



GRENFELL TOWER INQUIRY RT

Day 235

February 21, 2022

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Monday, 21 February 2022

1 (10.00 am)
 2 (Proceedings delayed)
 3 (10.08 am)
 4 SIR MARTIN MOORE—BICK: Good morning, everyone. Welcome to
 5 today's hearing. Today we're going to continue hearing
 6 evidence from Dr Smith, formerly of the Building
 7 Research Establishment.
 8 So would you ask Dr Smith to come in, please.
 9 DR DEBBIE SMITH (continued)
 10 SIR MARTIN MOORE—BICK: Good morning, Dr Smith.
 11 THE WITNESS: Good morning.
 12 SIR MARTIN MOORE—BICK: Are you ready to carry on?
 13 THE WITNESS: Yes, thank you.
 14 SIR MARTIN MOORE—BICK: Thank you very much.
 15 Yes, Mr Millett.
 16 Questions from COUNSEL TO THE INQUIRY (continued)
 17 MR MILLETT: Yes, Mr Chairman, good morning. Good morning
 18 to you. Good morning to members of the panel.
 19 Dr Smith, good morning to you.
 20 A. Good morning.
 21 Q. Now, on Thursday evening, when we broke, we were looking
 22 at the literature review at {BRE00001353}, if we can
 23 please have that back up. You will recall we were in
 24 this document, I think?

1

1 A. Yes.
 2 Q. Can we please start at the bottom of page 13
 3 {BRE00001353/13}, where you see "External Surface", and
 4 that says:
 5 "Provisions are made in AD B to restrict the
 6 combustibility of external walls of buildings that are
 7 less than 1000mm from the relevant boundary. This is in
 8 order to reduce the surface's susceptibility to ignition
 9 from an external source, (e.g. an adjacent building)."
 10 Then if you go over the page {BRE00001353/14}, the
 11 first paragraph there, it says this:
 12 "Irrespective of boundary distance, Diagram 40
 13 (Provisions for external surface of walls), in AD B,
 14 restricts the combustibility of external walls of high
 15 buildings (where the top floor is at least 18m above
 16 ground level) and those of the Assembly and Recreation
 17 Purpose Group, to reduce the danger from fire spread up
 18 the external face of the building."
 19 You will note the word "combustibility" there.
 20 Do you consider that paragraph to be an accurate
 21 statement?
 22 A. Well, my interpretation of this has always been, as
 23 I think we spoke about on Thursday, in the sense that
 24 combustibility is something that's binary. So
 25 a material and whatever is either non-combustible or, if

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1 it isn't non-combustible, it is combustible.
 2 MR MILLETT: Yes, indeed.
 3 SIR MARTIN MOORE—BICK: Sorry, you hadn't finished there?
 4 A. Well —
 5 SIR MARTIN MOORE—BICK: Or had you?
 6 A. Yes, yes.
 7 SIR MARTIN MOORE—BICK: You had. I'm sorry.
 8 A. Yes, sorry.
 9 MR MILLETT: Indeed. So what do you make of the phrase
 10 "Diagram 40 ... restricts the combustibility of external
 11 walls of high buildings"?
 12 A. I guess — well, my interpretation of that is that it is
 13 referring to the different classifications that relate
 14 to predominantly BS 476—7 and the surface spread of
 15 flame test. Obviously class 0 includes the fire
 16 propagation test as well. But there is a hierarchy
 17 associated with flame spread ranging from the class 3 up
 18 to the class 0, being the best performing within that
 19 context.
 20 Q. How does diagram 40 of Approved Document B, at least at
 21 2000, in that edition, reduce the combustibility of the
 22 external surfaces of walls?
 23 A. Yeah, I mean, perhaps — I mean, I wouldn't necessarily
 24 describe it in that way now, in the sense that it is —
 25 but what it is trying to do is to say that, you know,

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1 the closer you are to the boundary, et cetera, then you
 2 have to have a better classification in terms of the
 3 surface spread of flame. So it's a graduation in terms
 4 of, you know, the performance, but accepting that all of
 5 the materials that are class 0 and above, or worse, are,
 6 in effect, combustible.
 7 SIR MARTIN MOORE—BICK: I'm sorry to interrupt you so early,
 8 Mr Millett, but can I just ask you this: is there some
 9 confusion, at this point and maybe in some other
 10 documents, between the combustibility of, as it's put
 11 here, external walls, and combustibility of the external
 12 surfaces of the walls?
 13 A. Do you mean in terms of the entire wall make-up?
 14 SIR MARTIN MOORE—BICK: Well, that's the point, because as
 15 I understand class 0, it is actually a measure of the
 16 combustibility of the surface, not necessarily of what's
 17 under the surface.
 18 A. Yes, although, of course, if you've got a product that
 19 has got a surface coating on it or whatever, then the
 20 performance of that surface is dependent upon what is
 21 behind it as well.
 22 SIR MARTIN MOORE—BICK: Exactly. But what's written here is
 23 that the diagram restricts the combustibility of
 24 external walls, as if that relates to the whole of the
 25 substance of the external walls, whereas —

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1 A. Okay, I see what you mean.
 2 SIR MARTIN MOORE-BICK: — class 0 only speaks to the
 3 surface, doesn't it? And that's a confusion which, if
 4 it exists — as it seems to me at the moment it does —
 5 is potentially rather dangerous.
 6 A. Yes, and I suppose that part of the issue that you're
 7 referring to there in this context would be the
 8 definition of "external wall", which a lot could be
 9 solved by, you know, a proper definition of "external
 10 wall" and what that actually means, if it means the
 11 whole wall make-up or, you know, just the external
 12 element of it.
 13 SIR MARTIN MOORE-BICK: So if we go back to where I started,
 14 would you accept that there is a degree of confusion
 15 here between the surface and the substance?
 16 A. Well, that certainly seems to be the way that it has
 17 been interpreted. I mean, I think — yes, yes.
 18 SIR MARTIN MOORE-BICK: All right, thank you very much.
 19 Yes, I'm sorry, Mr Millett.
 20 MR MILLETT: And in addition to the answers to the questions
 21 that the Chairman has just asked you, there's another
 22 confusion, isn't there, I would suggest, which is that,
 23 in fact, diagram 40 doesn't address combustibility, in
 24 its sense defined in ADB, at all, does it?
 25 A. Well, as I say, I go back to what I said before, in it

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1 being a binary definition, in that something is either
 2 non-combustible or it isn't, and if it's not
 3 non-combustible, it's combustible. And, you know, you
 4 would not typically carry out a BS 476-6 and 7 test on
 5 something that you knew to be non-combustible. You just
 6 wouldn't do that.
 7 Q. In fact this statement — I'm sorry.
 8 A. Yes, sorry.
 9 Q. I thought you'd finished your answer.
 10 A. No, that's fine, sorry.
 11 Q. Is it right that, looking at it now, this statement is
 12 actually fundamentally erroneous for two separate
 13 reasons: first, because diagram 40 doesn't restrict
 14 combustibility strictly so-called; and, secondly,
 15 because it purports to restrict the combustibility — or
 16 the report says that it restricts the combustibility of
 17 the entire external wall, whereas in fact diagram 40
 18 only relates to the surface?
 19 A. Well, that depends, as I've said, as we've just said, on
 20 the definition of "external wall", and my reading of
 21 this is that, insofar as it is restricting and giving
 22 a graduation in terms of performance in relation to the
 23 surface spread of flame, then it is in some way
 24 contributing to restricting the combustibility. It is
 25 saying that you must use, you know, a better performing

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1 product the closer you are to the boundary.
 2 SIR MARTIN MOORE-BICK: Mr Millett, I'm sorry to interrupt
 3 you yet again, but I understand that in some cases
 4 there's a transcript problem.
 5 Can I ask, first of all, is your transcript working?
 6 MR MILLETT: My transcript is working, although I've seen
 7 the note on the subject. But, yes, it is.
 8 SIR MARTIN MOORE-BICK: I'm going to ask counsel who are
 9 here for BRE whether their transcript is working.
 10 MS LEEK: Mine is. It has just come back.
 11 SIR MARTIN MOORE-BICK: It has just come back. All right.
 12 MR MILLETT: Shall we press on and I will —
 13 SIR MARTIN MOORE-BICK: The public transcript is running as
 14 well. Good. It sounds to me as though we might be back
 15 out of trouble, so we'll carry on.
 16 MR MILLETT: Let's continue.
 17 Dr Smith, you'll recall — maybe you won't, but I'll
 18 give you the reference anyway — that you signed this
 19 report off, and it's page 4 {BRE00001353/4}.
 20 A. Mm—hm.
 21 Q. It's your signature, bearing the date of 30 March 2000.
 22 Can we assume that you read this report carefully
 23 before you signed it off?
 24 A. Yes, I would have done.
 25 Q. So can you explain, going back to page 14

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1 {BRE00001353/14}, how the error or the confusion crept
 2 in? Why did you not correct it at the time to make it
 3 clear?
 4 A. In terms of the way that we were interpreting that at
 5 the time and the fact that diagram 40 is headed
 6 "Provisions of external surfaces of walls", our
 7 interpretation — well, we weren't aware that there was
 8 particular confusion around this point.
 9 Q. But just as a matter of the way this is set out on the
 10 page, it isn't right that diagram 40 restricts the
 11 combustibility of external walls of high buildings.
 12 It's much more refined than that, isn't it?
 13 A. I don't entirely agree because of the reasons that I've
 14 just explained.
 15 Q. Now, Sarah Colwell told us in her evidence that this
 16 wording would have been written by Brian Martin as,
 17 as she put it, the expert on that area; does that accord
 18 with your recollection in relation to the division of
 19 work between you in the production of this document?
 20 A. That would be my expectation today, yes.
 21 Q. Right. I'm going to read into the record the reference:
 22 it's {Day232/36:17}. That's just for our purposes for
 23 later.
 24 When you signed this off, was there some
 25 misunderstanding in your own mind at the time between

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1 class 0 and combustibility?
 2 A. No.
 3 Q. Did you ever detect that there was confusion in
 4 Mr Martin's mind or Dr Colwell's mind about the
 5 differences between what diagram 40 did and the concept
 6 of combustibility as defined?
 7 A. Not that I was aware of, no.
 8 Q. And yet, in answers to the Chairman this morning and to
 9 me, I think you accept that the phrase "Diagram 40
 10 restricts the combustibility of external walls of high
 11 buildings" is not accurate?
 12 A. Not entirely, no.
 13 Q. No.
 14 A. I don't — but I don't entirely accept that it doesn't
 15 reflect the fact that — you know, the combustibility
 16 issue, which, as I say, we've just discussed.
 17 Q. Just tell me, then — maybe I've misunderstood your
 18 evidence — what is it in diagram 40 that restricts the
 19 combustibility of external walls?
 20 A. So, basically, my understanding has always been that you
 21 would not be carrying out BS 476—6 and/or 7 tests on any
 22 product or material that is non-combustible. Therefore,
 23 clearly they are combustible, and then you have
 24 a ranking system in terms of their reaction to fire
 25 characteristics which is built into diagram 40. You'll

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1 see, you know, in diagram 40, you've got different
 2 classes depending upon the location in the building or
 3 where the building is actually located in proximity to
 4 adjacent buildings.
 5 Q. But those classes are not combustibility tests,
 6 are they?
 7 A. Yes, to some degree, I think they are.
 8 Q. You think they are. Well, 476—6 —
 9 A. The more combustible — sorry, the more combustible
 10 a material is or product is, you know, the worse the
 11 spread of flame characteristics will be.
 12 Q. 476—6, is that a combustibility test?
 13 A. 476—6?
 14 Q. Part 6.
 15 A. Insofar as it is measuring the amount of heat that's
 16 produced on exposure to an external radiant panel within
 17 the box, then it is measuring the amount of energy
 18 that's being released from the surface that's been
 19 exposed.
 20 Q. But it's not a test for combustibility as opposed to
 21 non-combustibility, let alone a test for limited
 22 combustibility, is it? It's a test for propagation of
 23 fire.
 24 A. But there are very — there are a number of
 25 characteristics that you need to understand when you

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1 start talking about combustibility, and really what
 2 you're looking at is the contribution that a material or
 3 product can make to the fire growth behaviour.
 4 Q. Similarly, part 7 isn't a combustibility test, is it?
 5 It's a surface spread of flame test.
 6 A. But then the amount of energy that a product or material
 7 will contribute to a fire over a period of time is
 8 dependent upon the rate at which the fire can spread
 9 over the surface. So if you can — if it spreads very,
 10 very quickly, then the energy that's contained within
 11 that product or material will be produced and released
 12 much more quickly. Clearly, if a product doesn't spread
 13 flame or, you know, just sits there in the exposed zone,
 14 then the amount of energy and so on that's released will
 15 be much, much slower. So these things are all
 16 interdependent and are, you know, key factors in
 17 assessing the overall combustibility of a product or
 18 material.
 19 MR MILLETT: Mr Chairman, I'm getting a note again from
 20 those behind me that the transcript issue is continuing.
 21 I don't know whether it is.
 22 SIR MARTIN MOORE—BICK: I think you and I can probably see
 23 the same note, which suggests that the problem may be
 24 limited to the display screens in this room, which are
 25 not working at the moment. But those who are logged on

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1 to Opus I think are getting the feed. I hope that's
 2 right.
 3 I'm just going to check with counsel who are sitting
 4 over there. Can I ask, are you getting the transcript
 5 feed?
 6 MS LEEK: Sir, I am not logged into Opus at the moment. I'm
 7 using the transcript on the screen, which isn't coming
 8 up.
 9 SIR MARTIN MOORE—BICK: Oh, right.
 10 Well, I think all we can do, actually, is to mention
 11 it to those who are in control of the technology and ask
 12 that they should try and restore the transcript to the
 13 hearing room, but I think those who are using the
 14 transcript through Opus are probably still all right and
 15 I think we ought to carry on. All right?
 16 MR MILLETT: Very well, Mr Chairman, yes.
 17 I'm sorry about that, Dr Smith. It's a technical
 18 problem.
 19 I think I've understood your evidence on the word
 20 "combustibility". Did you understand it in this report,
 21 when you signed it off, as combustibility in, as it
 22 were, the loose sense, in other words capability of
 23 burning, as opposed to any technical sense defined or
 24 indicated in Approved Document B?
 25 A. Correct, yes.

12

1 Q. Right, I see.
 2 Now, can we go back to page 12 {BRE00001353/12},
 3 then, please, in the literature review. There's
 4 a heading "Façade Costs", and there you will see
 5 table 1 — in fact, there are three tables — and what
 6 are described as "Types and costs of claddings quoted in
 7 AJ, Feb 1998 for overcladding". If you go, please, down
 8 the page, you'll see that there's a table 2, "Types and
 9 costs of curtain wall", and then over the page to
 10 page 13 {BRE00001353/13}, and look at table 3, you will
 11 see the heading of that table, "Types and costs of
 12 in-fill panels as quoted in AJ, Feb 1998", "Infill
 13 Panel Systems", and then the fourth entry down, says:
 14 "Composite panel of 0.5mm stove lacquered aluminium,
 15 3mm polyethylene core, 0.5mm mill-finish aluminium, with
 16 insulation and vapour barrier bonded to rear face."
 17 Then there's a cost: "160—210". Do you see that?
 18 A. Yes.
 19 Q. That's ACM with a polyethylene core, isn't it?
 20 A. As we know it now, yes.
 21 Q. Did you not know it then?
 22 A. No.
 23 Q. Why is that?
 24 A. I was not aware of that description of those particular
 25 products. I mean, this was the actual description that

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1 we had in relation to those products. We didn't know
 2 them as ACMs.
 3 Q. Right. You could see, nonetheless, though, that it had
 4 3 millimetres of polyethylene as the core?
 5 A. Yes, correct, from the discussion — from the
 6 description here, yes.
 7 Q. Can I ask you, what assumptions did you make about its
 8 mineral content?
 9 A. What, in —
 10 Q. In the core.
 11 A. But, what, in relation to table 3 at the time?
 12 Q. Yes, what assumptions did you make —
 13 A. I would not have made any assumptions.
 14 Q. — in relation to the mineral core content of the
 15 3 millimetres polyethylene?
 16 A. Yeah, no, I would not have made any assumptions about
 17 it.
 18 Q. Right. So can we proceed on the basis that you might
 19 have known that it was 100% polyethylene?
 20 A. I would have based any thoughts around the description
 21 as provided.
 22 Q. Right.
 23 Were you aware, before you approved this report,
 24 that ACM panels with a fully polyethylene core were used
 25 in the external wall arrangements of UK buildings?

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1 A. No.
 2 Q. You weren't aware?
 3 A. No.
 4 Q. Did you become aware when you read this table?
 5 A. This would have been the only information that I had.
 6 Q. Yes, maybe, but on the basis that that was the only
 7 information you had, did you become aware that this
 8 product, as described here, was in use in the UK built
 9 environment?
 10 A. In the same way that all of the other products are
 11 listed, that would have been my only source of
 12 reference, what was written here.
 13 Q. Is that a yes, then, to the question?
 14 A. Well, yes, if these products are the ones that were in
 15 use.
 16 Q. Did you ask yourself at the time why it was that
 17 composite panels with a 3—millimetre, let it be assumed,
 18 100% polyethylene core were in use on the external walls
 19 of buildings?
 20 A. No, I wouldn't have done at that point.
 21 Q. Why is that?
 22 A. In some ways, you know, a lot of these products that are
 23 listed here would be potentially products that you might
 24 want to further investigate in terms of their fire
 25 performance. I mean, I would not personally have had

15

1 any knowledge about how any of these products would have
 2 performed in a fire situation.
 3 Q. No, but looking at the box and the title in this report,
 4 did you not ask yourself, did you not wonder, "I wonder
 5 why these panels, as quoted in the Architect's Journal
 6 at that time, are in use, perhaps even common use, on
 7 tall buildings in the UK built environment"?
 8 A. I don't recall. I don't recall that at all.
 9 Q. No, right. So therefore it wasn't a surprise to you —
 10 is that right? — to discover that such panels were in
 11 use?
 12 A. Well, as I say, I wouldn't have had any knowledge about
 13 what was in use at all until I saw this report. I had
 14 no preconceived notion. I was not, you know, out there
 15 in the real world looking and surveying buildings, so
 16 I had no knowledge as to what was in use.
 17 Q. No. I'm afraid that doesn't quite answer my question.
 18 My question was really: when you saw this for the first
 19 time, did you not react by thinking or asking yourself,
 20 "I wonder why it is that there are out there these
 21 composite panels with 3 millimetres of polyethylene"?
 22 A. I don't recall that specifically in relation to this,
 23 no.
 24 Q. Right. So you weren't concerned to discover it for the
 25 first time?

16

1 A. I don't recall. I don't know.
 2 Q. What did you know at the time about the fire reaction
 3 properties of polyethylene?
 4 A. That it's basically a thermoplastic, and, I mean, one of
 5 the performances of thermoplastics is they have
 6 a tendency to melt on exposure to heat, and in some
 7 cases that actually means that the thermoplastic itself
 8 runs away from the fire. But apart from that, you know,
 9 we wouldn't have known — I wouldn't have known how this
 10 product, as it's constituted there, would perform in
 11 a fire scenario.
 12 Q. You say it has a tendency to melt and run away from the
 13 fire.
 14 A. Yes.
 15 Q. Did you not also know that it would burn as it dripped
 16 and ran?
 17 A. Yes, yes. I mean, it will burn; it's the extent to
 18 which it — and where it accumulates, in effect, when
 19 it's melting and dripping.
 20 Q. Yes. Can we agree this much, at least: that you knew at
 21 the time, whatever else you might not have known about
 22 polyethylene's reaction to fire characteristics, that it
 23 was combustible in all senses?
 24 A. Yes, yes.
 25 Q. In relation to compliance with the guidance as it then

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1 stood in Approved Document B, would there have been any
 2 particular reason for concern in discovering that ACM
 3 panels were being used to clad high-rise buildings where
 4 they had a polyethylene core?
 5 A. That did not — I don't recall what the discussion would
 6 have been around that. As I say, it wasn't specific to
 7 that particular product at that time. It was taken in
 8 the context of all of the other tables that are
 9 presented here as well and the other products, which
 10 equally you could look at and see from a fire situation
 11 you might want to investigate further. Because, in
 12 principle, you know, there were some others as well that
 13 you might look at and think: well, I'm not quite sure
 14 how that might perform in a fire either.
 15 Q. No. Did you have any thoughts along the lines of how it
 16 would be that such panels could comply with the then
 17 standing Approved Document B?
 18 A. I don't recall having had that consideration or
 19 discussion. I mean, Brian Martin would have led on that
 20 sort of area of discussion.
 21 Q. Right. You say he would have led on it; does that mean
 22 you were, in some senses, reliant on his expertise?
 23 A. Yes.
 24 Q. Right.
 25 A. Yes.

18

1 Q. Was he more of an expert in the field of fire science
 2 than you, would you say?
 3 A. No.
 4 Q. So why were you —
 5 A. No. Brian's area of expertise, I think as we spoke
 6 about before, it was on the approved document and the
 7 interpretation and so on of the approved documents.
 8 Q. Right. Do you know from your own knowledge at the time
 9 whether Brian Martin had any concerns of his own about
 10 how it could be that the panels identified in this table
 11 with a 3-millimetre polyethylene core were compliant
 12 with Approved Document B as it then stood?
 13 A. I don't know.
 14 Q. Did it occur to you at the time, before any experimental
 15 testing took place, as we know it did not long after
 16 this, that the use of polyethylene in the external wall
 17 at height might present a serious danger in the event of
 18 fire?
 19 A. I don't recall that one being considered as a special
 20 case.
 21 Q. Right. So can we take it that you don't recall any
 22 discussion, either within the BRE or with the
 23 department, about this issue at the time?
 24 A. Not at that time.
 25 Q. Not at that time.

19

1 Did you consider, looking at this document and this
 2 product in the table at this time, how it could be that
 3 the use of polyethylene in the external wall of
 4 a high-rise building could comply with the functional
 5 requirement in B4 of the Building Regulations?
 6 A. Not at that time, no.
 7 Q. Did you consider at the time whether ACM PE panels could
 8 achieve class 0, whether or not it was an appropriate
 9 classification?
 10 A. I don't recall whether we would have had that discussion
 11 or not.
 12 Q. Right.
 13 Just trying that slightly differently, on the
 14 assumption that these panels would be said to have met
 15 class 0, did you simply assume that a class 0 material
 16 or product would always meet the functional requirement,
 17 or did you think that some class 0 products or materials
 18 might not?
 19 A. I don't recall at that particular time.
 20 Q. Right.
 21 A. I think that we were on a — the whole point of the
 22 research project was to investigate these things, and
 23 this obviously was the first step in the research
 24 project, and that was to be followed by the experimental
 25 programme.

20

1 Q. Did you consider at this time or did you come to
2 consider whether, given the functional requirement in
3 B4, class 0 was an appropriate classification for
4 a composite product at all?
5 A. I don't recall at the time.
6 Q. At the time; did you ever later come to consider that
7 question?
8 A. I can't remember whether we've had that discussion or
9 not.
10 Q. And therefore it would follow that, particularly with
11 a combustible core, a panel with a combustible core was
12 something you never asked yourself about or never asked
13 the question: how is class 0 appropriate?
14 A. Probably not within that context. I mean, the context
15 for this, for me, was always around this research
16 project, what it was seeking to achieve, and then beyond
17 that, obviously later on, the adoption of BS 8414 and
18 the criteria and the introduction of that into the
19 approved document. And then, you know — so from the
20 outcomes of this research project and the classification
21 criteria that were then derived in BR 135, it was my
22 sort of absolute understanding from thereon in that the
23 door was closed in the use of these types of products
24 and materials in the future.
25 Q. Well, that would be so, I think — is this right? — if

21

1 BS 8414 and BR 135 criteria were adopted as the sole
2 route to compliance, but not if you left class 0 in
3 ADB —
4 A. Well, I mean our understanding and interpretation was —
5 and this is where the confusion around the term
6 " filler ", which is now apparent but wasn't apparent to
7 us at the time, obviously had an impact.
8 Q. Right.
9 Picking up on your point about the revisions, can we
10 go to page 27 of this document {BRE00001353/27}. You'll
11 find the conclusions of the literature review there.
12 You'll see, Dr Smith, at the top of your screen, the
13 word "Conclusions":
14 "The main findings from this review have been ..."
15 Then there are some numbers.
16 If you look at number 2, it says this:
17 "The 2000 revision of AD (B) goes some way to
18 addressing the issues of fire performance of external
19 cladding systems, the review of BR 135 will help to
20 clarify any remaining issues as identified ."
21 Now, is that a reference — just bearing in mind the
22 date of this, which is March 2000 — to the version of
23 the approved document which came into force in the July
24 of that year, July 2000?
25 A. I would imagine so, yes.

22

1 Q. The previous version was the 1992 second edition, which
2 ran from June 1992 to July 2000, so that must be right.
3 A. Yes, I — yes, that's —
4 Q. Had the BRE played any role in drafting or advising on
5 or assisting with the 2000 amendments to the approved
6 document?
7 A. I don't know.
8 Q. You don't know?
9 A. No.
10 Q. Can we take it that you were familiar at the time with
11 the provisions of the guidance in Approved Document B?
12 A. To some extent, not entirely. I mean, that wasn't the
13 area that I was working in until really this project.
14 Q. But as a result of working on this project, did you come
15 then to be fully familiar with at least the 2000
16 version, if not its predecessor?
17 A. In part, yes. I mean, I wouldn't have an extensive
18 oversight of every element of the approved document.
19 I mean, it wasn't my job and role to be interpreting
20 that on a daily basis, so it would only be on a
21 need-to-know basis.
22 Q. You say in part.
23 A. Yes.
24 Q. Did one of those parts include section 12 — what became
25 section 12 later, I think section 13 in the 2000

23

1 version — namely external wall?
2 A. Yes, I would have familiarised myself with it, but
3 I would not be asked to interpret it in the real world,
4 if you get my meaning. It's slightly different.
5 I would not be applying that to any projects or whatever
6 in the external world.
7 Q. Now, looking at the text of paragraph 2 under the
8 conclusions here, where it says that the revision "goes
9 some way to addressing the issues of fire performance of
10 external cladding systems, the review of BR 135 will
11 help to clarify any remaining issues as identified",
12 what specifically were the issues in relation to the
13 fire performance of external cladding systems that the
14 2000 revision of Approved Document B, as it says here,
15 had gone some way to addressing?
16 A. Yeah, I mean, I can't be definitive on that, I wasn't
17 involved in the revisions and so on, but my guess is
18 that this was all related to the parliamentary select
19 committee and the work that they had undertaken, and
20 that's really what then led to the need to embody the
21 classification criteria into BR 135. But in order to
22 sort of validate that, this research project was
23 commissioned by the department to enable that data and
24 information to be collected.
25 Q. Right. Let's look at the revision.

24

1 Can you remember though, before we do, how it was
 2 that the 2000 revision of Approved Document B had
 3 addressed these issues or gone some way to doing so?
 4 A. I can't remember, no.
 5 Q. Let's look at it, then, to help you.
 6 Can we put up Approved Document B 2000 against the
 7 original. I'd like to have both up on the screen.
 8 {CLG10000012/89}. The documents provider has done
 9 an excellent job in getting there before me.
 10 Now, what we have on the left—hand side is the
 11 previous edition, which is the 1992 Approved Document B
 12 {BLA00005482/74}, and on the right—hand side what has
 13 become section 12 in the 2000 edition {CLG10000012/89}.
 14 You can see there that the requirements for external
 15 surfaces in both versions are that the external walls of
 16 a building over a certain height should meet the
 17 provisions of diagram 40. Do you see that?
 18 A. Yes.
 19 Q. It's 12.5 in the 1992 edition on the right—hand side and
 20 13.5 in the 2000 edition.
 21 A. Mm—hm.
 22 Q. Now, both diagrams stipulate class 0, don't they? Let
 23 me show you that, page 75 {BLA00005482/75} and page 90
 24 {CLG10000012/90}. So right—hand side if we go forward
 25 a page, and left—hand side if we go forward a page.

25

1 Both versions there. It's diagram 36 and diagram 40.
 2 Both versions there stipulate class 0, don't they?
 3 A. Yes.
 4 Q. The only difference was the height. On the right—hand
 5 side, which is the 1992 version, it was 20 metres, and
 6 on the left—hand side, 2000 amendment, 18 metres; yes?
 7 A. Yes.
 8 Q. Both say class 0; yes?
 9 A. Yes.
 10 Q. Yes.
 11 In addition, I think it's right that the 2000
 12 edition of the approved document added, if we go back to
 13 it, at 13.5 {CLG10000012/89}, under the note:
 14 "One alternative to meeting the provisions in
 15 Diagram 40 could be BRE Fire Note 9 ..."
 16 Yes?
 17 A. Correct, yes.
 18 Q. Now, that was new, wasn't it?
 19 A. Yes, I believe so.
 20 Q. And was that one of the amendments that would "go some
 21 way to addressing the issues" that was referred to in
 22 the conclusions to the literature review?
 23 A. I would assume so, yes.
 24 Q. Right.
 25 Now, it's right, I think, isn't it, that Fire Note 9

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1 was not conceived with the spread of fire over the
 2 external surface of the walls in mind, was it?
 3 A. Well, clearly that's one of the things that it's
 4 measuring.
 5 Q. Well, let me try it differently.
 6 External surface fire spread — a cladding system on
 7 fire is another way of putting it — was not the problem
 8 which Fire Note 9 was seeking to solve, was it?
 9 A. My understanding was that, yes, it was looking at the
 10 fire performance of external cladding systems in the
 11 round and, therefore, that is one of the aspects that it
 12 would be looking at.
 13 Q. There's not very much in BR 135, as it then turned into,
 14 in 2003 about external fire spread, is there?
 15 A. In BR 135?
 16 Q. Yes, as it turned into.
 17 A. I'm not following you, sorry, which version?
 18 Q. We'll come to it.
 19 A. Yes.
 20 Q. We'll come to it. But in fact, Fire Note 9 was a full
 21 system test, wasn't it?
 22 A. Correct.
 23 Q. It wasn't measuring or quantifying the external spread
 24 of flame?
 25 A. Not in isolation.

27

1 Q. No. And in fact, on this and later amendments to
 2 Approved Document B, an external wall product like
 3 a panel did not have to meet the requirements of BR 135
 4 through a BS 8414 test; it simply needed to satisfy
 5 class 0.
 6 A. Well, that was not my interpretation of what was in
 7 there, but I guess we'll come to that later.
 8 Q. I see.
 9 A. Yeah.
 10 Q. Well, then, if that wasn't, could you just explain 13.5
 11 to us? 13.5, which is the amendment made in 2000, says:
 12 "The external surfaces of walls should meet the
 13 provisions in Diagram 40 ..."
 14 "Note: One alternative to meeting the provisions in
 15 Diagram 40 could be BRE Fire Note 9 ..."
 16 So you didn't have to satisfy —
 17 A. No, I accept that in this context, yes, yes.
 18 Q. But they were always alternatives, weren't they? That
 19 never changed, not until 2018.
 20 A. The 2006 version also has some text in there about the
 21 performance of the insulation.
 22 Q. Yes. Well, we're not talking about insulation though,
 23 are we? We're talking about the external surfaces of
 24 walls, which is what diagram 40 is about.
 25 A. Yes, but it also — I mean, this is where the paragraph

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1 in the 2006 version also refers to " filler material",
 2 and, you know — so within that context, it's not as
 3 simple as what's written here in the 2000 version.
 4 Q. That may be so. It may have become complicated, and
 5 we'll come to that in due course.
 6 Dr Smith, forgive me for taking a long historical
 7 run—up to this, but at this point in time, it's right,
 8 I think, that the partial cure to the issues that the
 9 industry was seeing and which your literature review was
 10 addressing was met by the introduction of what became
 11 BRE 135, but Fire Note 9, as an alternative to meeting
 12 diagram 40.
 13 A. Correct.
 14 Q. Yes.
 15 Now, turning to insulation, if we look, please, at
 16 the right—hand side and go back a page to page 74
 17 {BLA00005482/74}, which is the 1992 version of
 18 Approved Document B, that required insulation in the
 19 external wall construction, as you can see in 12.7,
 20 "External wall construction" — can you see?
 21 A. Mm—hm.
 22 Q. It says in the second paragraph there:
 23 "In a building with a storey at more than 20m above
 24 ground level, insulation material used in the external
 25 wall construction should be of limited combustibility

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1 (see Appendix A)."
 2 Then you have the exception for masonry cavity wall
 3 constructions. Do you see that?
 4 A. Yes.
 5 Q. Then if you look to page 89 on the left—hand side
 6 {CLG10000012/89}, in the 2000 version of Approved
 7 Document B, if you look at what became 13.7, "External
 8 wall construction", you can see that the second
 9 paragraph has been amended, and it now says — we can
 10 compare the two:
 11 "In a building with a storey 18m or more above
 12 ground level, insulation material used in ventilated
 13 cavities in the external wall construction should be of
 14 limited combustibility ..."
 15 Can you explain the rationale for the introduction
 16 of the words "in ventilated cavities"?
 17 A. No, I can't.
 18 Q. It's a narrowing, isn't it, of the circumstances in
 19 which the guidance asked for insulation to be of limited
 20 combustibility?
 21 A. It certainly appears so, yes.
 22 Q. You don't know why that was?
 23 A. No, I don't.
 24 Q. Did you ever notice it at the time?
 25 A. No, I don't believe I did.

30

1 Q. You didn't notice it at the time, so that would tell us
 2 there was no discussion within the BRE, to your
 3 knowledge, of that narrowing?
 4 A. Well, not that I was involved in. I mean —
 5 Q. No. Can you tell us from your own knowledge who
 6 suggested it or how it came about?
 7 A. No, I wouldn't know that.
 8 Q. Right.
 9 A. But, I mean, the people that were working in that area,
 10 as we spoke about on Friday — Thursday, sorry, would
 11 have been Tony Morris and potentially a colleague of
 12 his, Richard Reed, who were involved in this area.
 13 Q. Right. What about Brian Martin, who I think you told us
 14 was —
 15 A. Yeah, I can't remember when Brian joined, so I don't
 16 know how much involvement he would have had in the 2000
 17 version of the approved document, but, I mean, he would
 18 be able to answer those questions, I'm sure.
 19 Q. Right.
 20 Can you recall when you became aware for the first
 21 time that the 2000 version had amended and narrowed the
 22 restriction in relation to insulation material in the
 23 external wall construction?
 24 A. No, I don't remember.
 25 Q. Right.

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1 Let's look at the functional requirement.
 2 Can we please have up on the screen page 72 of the
 3 document on the right {BLA00005482/72} and page 86 of
 4 the document on the left {CLG10000012/86}. The one on
 5 the left is a little bit fuzzy because of the copying,
 6 but we'll do our best with it. I hope you can see it.
 7 A. Yes.
 8 Q. On the right, which is the 1992 version of the
 9 functional requirement, it says:
 10 "B4.(1)The external walls of the building shall
 11 resist the spread of fire over the walls and from one
 12 building to another, having regard to the height, use
 13 and position of the building."
 14 Then in 2000, that's amended, as you can see, to the
 15 words:
 16 "The external walls of the building shall adequately
 17 resist the spread of fire over the walls ..."
 18 So you can see that the word "adequately" has now
 19 been inserted into the functional requirement in 2000.
 20 A. Yes.
 21 Q. Yes? So we've moved from resisting external fire spread
 22 altogether to resisting it adequately; yes?
 23 A. Yes.
 24 Q. Do you have any recollection yourself of that amendment?
 25 A. No.

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1 Q. Do you have any recollection of any discussion about the
2 reasons for that amendment?
3 A. Not that I was involved in at all, no.
4 Q. Do you know anything about the background to that
5 amendment?
6 A. No.
7 Q. When did you first learn, if you ever did, of that
8 amendment?
9 A. Yeah, I'm not sure I learned of it being a difference.
10 Obviously the 2000 version would have been the first
11 version that I would have looked at in the context of
12 this particular project. So, yes, I don't know why that
13 was put in there or where it came from.
14 Q. No. But you don't remember when you discovered that the
15 word "adequately" had been inserted into the 2000
16 edition?
17 A. No.
18 Q. Was this not something that you were looking at as part
19 of your literature review and the amendments leading up
20 to the July 2000 amendments?
21 A. Well, obviously I wasn't involved in the detailed work
22 on the literature review, I was the approver of the
23 report. So unless it was brought to my attention at
24 that point, I wouldn't necessarily have been aware of
25 it.

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1 Q. Did anybody give you a briefing before you signed off as
2 the approver of the conclusions, which include
3 conclusion 2, of the proposed amendments to Approved
4 Document B?
5 A. In terms of what timeframe? What do you mean, the
6 proposed amendments?
7 Q. Let's take it in stages.
8 You signed off as approved the literature review
9 with its conclusions on 30 March 2000.
10 A. Yes.
11 Q. Before you did that, did anybody give you a briefing on
12 the proposed amendments of Approved Document B or,
13 indeed, the functional requirement?
14 A. Not that I can recall.
15 Q. Right. So when you signed it off, what was the state of
16 your knowledge about what those proposed amendments
17 were?
18 A. I don't recall. I mean, I would have signed the report
19 off based upon the content of the report as provided to
20 me, so the text that would have been, you know, included
21 within the report.
22 Q. But if you didn't know what the proposed amendments
23 were, how could you sign off a report that said that
24 they went some way to satisfying the issues?
25 A. Well, in the content of the report it explains what —

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1 well, if it doesn't explain that, then somebody would
2 obviously have told me — must have told me that they
3 were going to refer to Fire Note 9, I guess.
4 Q. Right. Anything else?
5 A. But I don't recall first — hand. I'm just trying to
6 unpick the context and roll my mind back, but it's
7 a long time ago.
8 Q. Right.
9 Now, I don't want to ask you about the meaning of
10 words in a statutory piece of guidance, but did there
11 come a time when you had your own understanding about
12 what the word "adequately" connoted?
13 A. No, it was always a point that was a point of debate
14 amongst the industry as well, as to who defines what is
15 adequate.
16 Q. Now, you say it was always a point of debate; when did
17 that debate begin?
18 A. Well, I became aware of it probably in the 2000s at some
19 point.
20 Q. Right.
21 A. You know, attending conferences and seminars and so on,
22 and just picking up those sorts of discussions that
23 would have generally happened.
24 Q. So there did come a point, then, that you learnt about
25 the insertion of the word "adequately" into the

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1 functional requirement?
2 A. Well, I'm not sure it would have been in the context of,
3 "This has just suddenly appeared"; it would have been in
4 the context of, "This exists, who defines what is
5 adequate?"
6 Q. You say in the 2000s at some point the debate began
7 about what the word "adequately" meant. What was the
8 answer — sorry, I'll start again.
9 Did the BRE itself ever give an answer or suggest
10 an answer to that question, to your knowledge?
11 A. Not to my knowledge, no. That would not have been — my
12 view is that would not have been our role to have done
13 so. That is a matter for — because it exists in the
14 statutory requirements, it would be a matter for
15 government to define what is adequate and what is
16 suitable.
17 Q. Do you recall an occasion on which government was ever
18 asked that question?
19 A. I don't personally.
20 Q. You don't personally recall?
21 A. I'm not aware of when — you know, if industry asked for
22 clarification around what "adequate" meant, I don't
23 know.
24 Q. Did it ever occur to you, as the points person at the
25 BRE, to ask government, Anthony Burd or Brian Martin

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1 perhaps, about why it was that the word "adequate" was
 2 inserted and what was meant so that you could tell your
 3 clients?
 4 A. Again, I mean, if anybody had asked us to define
 5 "adequate", then we would have referred them to the
 6 department for that discussion. We would not provide
 7 that advice and we would not, you know, discuss that
 8 particularly with our clients.
 9 There's clearly different ways to define and to
 10 demonstrate adequacy. I mean, certainly it's a point
 11 that the department were very well aware of because, you
 12 know, they sat in some of the workshops and conferences
 13 and so on and would have heard the same questions. So,
 14 I mean — but only they can answer to if they were ever
 15 asked and then how they responded to that.
 16 Q. Can we just understand, despite the debate, as you say,
 17 which started some time in the 2000s, the BRE, to your
 18 knowledge, never took that up with government and said,
 19 "Look, you need to clarify this because there's
 20 a debate"?
 21 A. We would have raised it with them and said, you know,
 22 there's an issue around adequacy.
 23 Q. Oh, you did?
 24 A. And they were fully aware of that anyway because, you
 25 know, they sat in some of the same discussions that

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1 I was personally sat in or other people from BRE were
 2 sat in.
 3 Q. Okay. Let's just break that down.
 4 So you recall sitting in discussions, do you, with
 5 people from government and discussing the meaning or the
 6 intended meaning of the word "adequately"?
 7 A. Well, not necessarily discussing the meaning of it, but
 8 where — the issues around: well, what does "adequate"
 9 mean?
 10 Q. Yes. Well, that's a better way of putting the
 11 question —
 12 A. Yes, but not necessarily providing an answer to the
 13 question.
 14 Q. And what did government say during those discussions?
 15 A. I don't recall. I mean, you would need to — I suspect
 16 that people wouldn't have given an answer there and
 17 then. They would have to take that back and it would
 18 have to be an agreed response to something like that.
 19 It's not something that one individual would be able to
 20 sit there and define.
 21 Q. No. I'm not asking, really, about whether somebody
 22 could define it, I'm just really getting your
 23 recollection of the discussions, who said what and when
 24 about the word "adequately".
 25 A. Yeah, no, I can't give you chapter and verse in that

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1 respect.
 2 Q. Can you give us the gist?
 3 A. Well, I think it's as I've already described. I mean,
 4 people would say, "Well, who — what does 'adequate'
 5 mean within this context and who defines it?"
 6 Q. But you're talking to government; who was it you were
 7 discussing it with?
 8 A. I would have discussed it with Anthony Burd.
 9 Q. Yes. Anybody else?
 10 A. And potentially Brian Martin.
 11 Q. Right. Do you remember what they said about the word
 12 "adequately"?
 13 A. I mean, they will need to answer to that themselves.
 14 I mean, my view is and my recollection is that,
 15 initially anyway, their view was, "Well, yes it's
 16 a little bit vague, isn't it?"
 17 Q. Right.
 18 A. It's not definitive.
 19 Q. No.
 20 A. But then there's a lot of, you know, other regulation
 21 that I guess you could argue — not necessarily in the
 22 fire context as well, that is similar.
 23 Q. "It's a little bit vague."
 24 Were you not interested to know why a word which
 25 introduced vagueness into an otherwise absolute

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1 provision had been inserted?
 2 A. I mean, it really wasn't for me to question what the
 3 government had decided to do in terms of their own legal
 4 framework.
 5 Q. I wonder about that. Let me try it differently.
 6 Can you help with this: when BRE(sic), second
 7 edition, 2003, was in production, so between the date of
 8 the literature review and sometime in 2003, and
 9 therefore after the word "adequately" had been inserted
 10 into the functional requirement, to your knowledge,
 11 Dr Smith, did anybody at the BRE ever consider whether
 12 meeting the criteria in BR 135 would satisfy the word
 13 "adequately", so that you knew that if you passed
 14 BR 135, the performance of your external wall would be
 15 adequate for the purposes of the functional requirement?
 16 A. My understanding is that that would have been discussed
 17 and it would have — the fact that it was accepted and
 18 the research as it was carried out was all presented,
 19 that then was accepted as a demonstration of adequacy.
 20 Q. If "adequately" was vague, how did they know, how did
 21 anybody know, how did the BRE know, that the outputs
 22 from a BS 8414 test meeting BR 135 criteria would
 23 satisfy?
 24 A. Well, in terms of the support for the outputs from the
 25 project, and also the commitment from the parliamentary

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1 select committee to acceptance that the — what was
 2 then, I think, Fire Note 9 was suitable and needed to be
 3 adopted within the guidance.
 4 Q. But if there were no criteria, objective criteria, by
 5 which to measure the word "adequacy", how did you know
 6 whether the outputs from a BS 8414 test meeting BR 135
 7 would satisfy the word "adequate"?
 8 A. Well, I think it was implicit in the fact that the
 9 standard and the document, BR 135, were accepted.
 10 Q. Let's go back to the third conclusion, then, of the
 11 literature review, page 27. That's {BRE00001353/27}.
 12 Conclusion 3:
 13 "The work to date suggests that a large-scale test
 14 method is necessary to assess the performance of the
 15 complete system."
 16 Now, that was not a new discovery, was it, as at
 17 spring 2000?
 18 A. No.
 19 Q. I think you agree with me, it had been noted in
 20 Fire Note 3 and Fire Note 9?
 21 A. Correct.
 22 Q. Yes.
 23 Had you or Sarah Colwell or Brian Martin, for that
 24 matter, previously considered that small-scale testing
 25 of individual components of a cladding system to the

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1 BS 476 standards could "assess the performance of
 2 a complete system"?
 3 A. Yes, I believe people had considered that. So probably
 4 Sarah had in her earlier involvement in the — was it
 5 Fire Note — I don't know if she was involved in
 6 Fire Note 3, but certainly Fire Note 9, and, yes,
 7 I discussed it and I would have discussed it with Sarah
 8 at the time.
 9 Q. During the course of this project, was any consideration
 10 given, either within the BRE or in discussions with the
 11 department, to limiting all elements of the external
 12 wall construction, or at least all significant elements
 13 of the external wall construction, to materials or
 14 products of limited combustibility or non-combustible?
 15 A. I don't know.
 16 Q. You don't know one way or the other?
 17 A. No.
 18 Q. Does that mean you can't remember or —
 19 A. I don't know one way or the other. I don't know if any
 20 discussion took place between other people and the
 21 department around that particular issue.
 22 Q. Right.
 23 Other than your own knowledge of the 2000 amendments
 24 to Approved Document B, such as it was, which I think,
 25 accept from me, did not implement the recommendation of

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1 the select committee to have BS 8414 in place of
 2 class 0, what was your own state of knowledge at the
 3 time of whether the department would follow the select
 4 committee's recommendation that all external cladding
 5 systems should be required to be entirely
 6 non-combustible or tested to full scale?
 7 A. I think in 2000, when this project was initiated, the
 8 view was that obviously a number of things needed to be
 9 put in place. Obviously, we didn't have BS 8414 at that
 10 particular time, it was still Fire Note 9, so that then
 11 had to be developed and published and so on and the
 12 classifications published. So it was almost like
 13 a journey in terms of the implementation of the
 14 recommendations from the select committee.
 15 Q. Yes.
 16 A. And that was my expectation, that that was where this
 17 was all heading.
 18 Q. Did you ever have any discussions with Anthony Burd or
 19 anyone else from the department about whether class 0
 20 should be dropped?
 21 A. Well, not at that time because there was nothing to
 22 replace it with.
 23 Q. Well, you had the arriving Fire Note 9 which then became
 24 BS 8414.
 25 A. Yes, but it hadn't arrived in 2000, so we were on that

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1 journey, if you like.
 2 Q. Right.
 3 A. So — yes.
 4 Q. You say you were on a journey; did you and Anthony Burd
 5 or anybody else in the department ever discuss at what
 6 point that journey would end and class 0 would be
 7 dropped?
 8 A. I mean, obviously we understood and BRE understood that
 9 the changes would be made at a revision point within the
 10 cycle for the approved document, and that — because
 11 that's typically how it works. So once the British
 12 Standards were ready and published and so on, then at
 13 the relevant point in the cycle, those would then be
 14 adopted, and that was the expectation at that time.
 15 Q. I see. And when was the next revolution of the cycle?
 16 A. Well, we understood — obviously that emerged to be
 17 2006.
 18 Q. Right.
 19 A. I think it was like a five or six-year revision cycle
 20 typically around that time.
 21 Q. And what was it about Fire Note 9 that meant that it
 22 couldn't be adopted straightaway as the full-scale test
 23 in place of class 0?
 24 A. I think it was mainly the fact that in the approved
 25 document it predominantly refers to either national or

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1 European or international standards, and, clearly ,
 2 Fire Note 9 was none of those. It was, if you like ,
 3 a BRE in-house standard. So it was felt that it then
 4 needed to go through the standards-making process and be
 5 opened up to full discussion and consultation with the
 6 industry and all the stakeholders at large to improve
 7 the standard in the way that you would expect for
 8 a British Standard. There is, you know — a different
 9 process is gone through.
 10 Q. Was it your expectation that class 0 would be dropped,
 11 then, come the next iteration of Approved Document B?
 12 A. I don't recall exactly what the expectation would have
 13 been around that, because this was all also complicated
 14 by the introduction of the European test standards as
 15 well during this period.
 16 Q. Yes, which came in in a 2002 amendment.
 17 A. Yes, I believe so.
 18 MR MILLETT: Mr Chairman, I'm going to turn to a new topic,
 19 or vaguely new topic, but I won't finish it before the
 20 break, but I do think I should make a start on it.
 21 SIR MARTIN MOORE-BICK: Oh, do, yes. We started a little
 22 late, I'm afraid, so that's perfectly all right.
 23 MR MILLETT: Right, thank you.
 24 Can we then look at {BRE00041836}, please.
 25 SIR MARTIN MOORE-BICK: This is a new area of inquiry?

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1 MR MILLETT: It's a continuing but semi-new area of inquiry.
 2 SIR MARTIN MOORE-BICK: In that case, can I just raise
 3 a question which I don't think you've answered already,
 4 and, if you have, I apologise for asking it again. It
 5 concerns how Fire Note 3 and Fire Note 9 came into
 6 existence. The intention was, as I understand it, to
 7 produce a test which would demonstrate compliance with
 8 B4, functional requirement B4; is that right?
 9 A. That's my understanding.
 10 SIR MARTIN MOORE-BICK: Since functional requirement B4
 11 either did at one stage not include the word
 12 "adequately", so it just said "resist fire" without
 13 providing any numbers, someone must have taken a view
 14 when formulating Fire Note 9, let's say, as to what the
 15 criteria should be.
 16 A. Mm—hm.
 17 SIR MARTIN MOORE-BICK: Do you know how that was done and
 18 who did it?
 19 A. I'm afraid I don't. I mean, it would have been
 20 Tony Morris and his coworkers at the time, because he
 21 was leading on all of that work.
 22 SIR MARTIN MOORE-BICK: So it sounds, as far as you know,
 23 that we can assume that those who were doing that work
 24 took a certain view of the extent to which fire
 25 resistance was required, whatever the wording of the

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1 time —
 2 A. Mm—hm.
 3 SIR MARTIN MOORE-BICK: — and built that in to Fire Note 9,
 4 which became BS 8414?
 5 A. That would be my understanding, yes.
 6 SIR MARTIN MOORE-BICK: All right, yes. Thank you very
 7 much.
 8 Yes, thank you, Mr Millett.
 9 MR MILLETT: Yes, thank you.
 10 Can we then turn to the document which I want to
 11 look at, which is the bid document {BRE00041836}. If we
 12 just have a look at page 1, just to refresh all of our
 13 memories about this document. This is the bid by BRE to
 14 undertake work for DETR under the framework agreements.
 15 This was the title:
 16 "Review of fire performance of external cladding
 17 systems and revision of BRE report BR135."
 18 Which at that stage was a 1988 edition.
 19 If we go to page 3 {BRE00041836/3}, you can see that
 20 on that page there was a proposal that the BRE should
 21 undertake a survey of current stock in relation to the
 22 cladding of high-rise buildings in the UK. You will see
 23 that under the specific objectives, first bullet point.
 24 A. Yes.
 25 Q. That was accomplished by compiling a six-page

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1 questionnaire for completion by a selected number of
 2 relevant local authorities, wasn't it?
 3 A. I believe so.
 4 Q. Yes. Let's go to the questionnaire. That's at
 5 {BRE00041885}, please. It's entitled "BRE External
 6 Cladding Survey", and you can see there are some numbers
 7 down the left-hand side, ages of buildings. Do you see
 8 that?
 9 A. Yes.
 10 Q. Did you approve that survey?
 11 A. I don't recall. Possibly I did.
 12 Q. Right.
 13 A. It would also have had to have been approved by the
 14 department before it went out.
 15 Q. Yes.
 16 A. Because they had to approve anything where you were
 17 surveying industry.
 18 Q. We can scroll through it to see the nature of the
 19 questions. You've got the number of units above
 20 18 metres, the age group of the buildings,
 21 refurbishment, types of cladding, and if you turn the
 22 page to page 2 {BRE00041885/2}, you can see "Render
 23 Systems" or "Rainscreen Systems".
 24 Then going down to page 3 {BRE00041885/3}, please,
 25 you can see infill or built-ups, and then you have kinds

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1 of fibre — underneath paragraph 8 — insulation,
 2 mineral or polymeric, and then if you go over the page
 3 {BRE00041885/4}, of the polymerics, under 8.2, you're
 4 asked whether they're EPS, PUR, PIR or phenolics. Do
 5 you see that?
 6 A. Yes.
 7 Q. If we go to page 4, lower down, you can see the
 8 respondents are asked about firestopping and whether
 9 they are aware of the use of cavity barriers; yes?
 10 A. Correct.
 11 Q. At page 5 {BRE00041885/5}, question 11, you can see it
 12 says:
 13 "Have you had any incidents involving fire spread
 14 due to external cladding systems, any details would be
 15 appreciated."
 16 Yes?
 17 A. Yes.
 18 Q. Now, for that, I think it's right that the BRE then
 19 created an Excel spreadsheet to record the responses to
 20 this survey. Let's look at that. It's at
 21 {BRE00041886}. It's the next document on, actually, in
 22 the series. That is an Excel spreadsheet, so we'll need
 23 the native version of that, please.
 24 These take some time to pull up because of the
 25 nature of the document, so just bear with us, Dr Smith,

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1 please.
 2 Now, that is the Excel spreadsheet. If we can go to
 3 the first tab, "Introduction", which I think we're on,
 4 you can see that it records, just over halfway down, the
 5 text inside the box which starts "To date", you've got
 6 45 surveys that have been distributed, 17 responses have
 7 been received and, of those, three were nil returns, one
 8 is still trying to provide the data and 13 full returns
 9 were provided.
 10 A. Mm—hm.
 11 Q. Do you know why only 45 questionnaires were sent out?
 12 A. No, I don't.
 13 Q. You don't know who took that decision?
 14 A. No.
 15 Q. Do you know who chose the list of recipients?
 16 A. Typically, in these sorts of instances, it would be
 17 discussed between our project team, our project manager
 18 and the department.
 19 Q. I see. Were you party to those discussions?
 20 A. No, I wouldn't have been.
 21 Q. Do you know on what basis these organisations were
 22 selected?
 23 A. No, I don't.
 24 Q. You can see that one of the organisations was WS Atkins,
 25 and if you go, please, to {BRE00041886}, to the sheet

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1 entitled "Survey Responses", you can see, if you go to
 2 column C, WS Atkins, and they are type 1. Type 1, take
 3 it from me, is a specifier.
 4 Do you know what kind of organisation WS Atkins was?
 5 A. In this context, so presumably then they were specifying
 6 what went on to buildings.
 7 Q. If we go down, then, to row 54 in column C, if we scroll
 8 down to 54, question 11, there's a "Yes", and there's
 9 a note that's added to the cell, if we can just open up
 10 the note. I think you may have to enable editing to do
 11 it. If we can open the cell, we have some of the text
 12 but not all of it, which I'll have to ask you to take
 13 from me. It says:
 14 "BRE: Spread of flames generally rapid due to loss
 15 of integrity of [and the words that follow, take it from
 16 me are] composite aluminium panels using combustible
 17 cores."
 18 Now, can you help us, is that a note of what was
 19 recorded on WS Atkins' survey response, particularly at
 20 question 11?
 21 A. I don't know. I would assume probably yes, but
 22 I don't — I can't be definitive about that.
 23 Q. Right.
 24 Did you or to your knowledge anybody else, either in
 25 the BRE or in government, contact WS Atkins to find out

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1 what the composite aluminium panels using combustible
 2 cores were?
 3 A. I don't know.
 4 Q. Were they ACM with a PE core or a sandwich panel or
 5 infill panel or the like?
 6 A. I don't know.
 7 Q. Did you see this spreadsheet at the time?
 8 A. I would have probably seen it as part of the pack that
 9 comes to you for approval of the report.
 10 Q. Did you open up the cell that I've just opened up?
 11 A. I don't recall. I don't recall.
 12 Q. Do you recall any discussion at the time about
 13 WS Atkins' discovery?
 14 A. I don't recall that, but clearly, you know, the
 15 responses to the questionnaire, et cetera, were then
 16 used to help formulate the experimental programme.
 17 Q. Right. Yes, I see that.
 18 Was this spreadsheet sent to the department or
 19 did it remain an internal BRE document?
 20 A. I don't know. I would imagine it probably did get sent,
 21 but I don't know. Others would know that.
 22 Q. Right.
 23 Let's look, then, at another document,
 24 {BRE00041887}. Now, this is the project report dated
 25 24 July 2000. It was issued to Anthony Burd outlining

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1 the results of the BRE's cladding survey, and it
 2 provided various options for large-scale and
 3 experimental studies.
 4 Let's go to page 2 {BRE00041887/2}. You can see
 5 that the report was prepared by Sarah Colwell and
 6 approved by you; yes?
 7 A. Correct.
 8 Q. And at page 6 {BRE00041887/6}, if we go to that, you can
 9 see "Survey Responses" and the report says there,
 10 underneath:
 11 "Forty five questionnaires were issued of these 17
 12 responses were received. Figure 1 summarises the
 13 categories and responses received. The number of
 14 responses received were less than expected."
 15 In fact, it is right, isn't it, that there were only
 16 13 full responses?
 17 A. Based on what you showed earlier, yes.
 18 Q. Do you know why the BRE didn't issue further surveys to
 19 other organisations when it became apparent that the
 20 response rate was so low?
 21 A. I don't. I mean, I'm pretty sure that this would have
 22 been discussed with the department at the time and there
 23 would have been some follow-up to those where there had
 24 been no response received at all.
 25 Q. With only about a third of the organisations actually

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1 responding to the BRE survey, do you know how the BRE or
 2 government could gain a proper and comprehensive
 3 understanding of the current industry practice in
 4 relation to the overcladding of building stock in the
 5 United Kingdom?
 6 A. I'm sure this would have been discussed between the
 7 project team and the department at the time, and then
 8 the decision would have been taken jointly.
 9 Q. Jointly? Right. So it was a joint decision, was it, to
 10 proceed without issuing further surveys to other
 11 organisations to get a better data set?
 12 A. Well, we would have sought the view of the department as
 13 to whether they felt it was adequate or not.
 14 Q. Did anybody from the department suggest to you that
 15 perhaps more data than 17 or even 13 responses was
 16 needed and more surveys should be sent out?
 17 A. I don't know.
 18 Q. If we look at page 10 of this document {BRE00041887/10},
 19 there's a heading, "Survey Conclusions". You see it
 20 concludes as follows, the first bullet point:
 21 "Based on this survey it would appear that although
 22 the number of responses have been limited they provide
 23 sufficient data to form a consistent view of the types
 24 of external cladding systems used in the public housing
 25 sector."

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1 On what basis was that conclusion reached, do you
 2 know?
 3 A. No. I mean, I would anticipate, reading this now, that
 4 it would have looked at the types of responses that we
 5 were getting back, and if there was a consistency in the
 6 responses that we had had, that would have been what
 7 would have, you know, dictated that conclusion.
 8 Q. Did you yourself have a view at the time about whether
 9 this was a sufficient data set on which to form
 10 an opinion?
 11 A. I don't recall at the time. I'm sure we would have had
 12 some discussion around that. Clearly, one of the things
 13 that would have been looked at as well would have been
 14 who — you know, which areas or which local authorities
 15 or so on would have responded.
 16 Q. If we go to figure 1 on page 7 {BRE00041887/7}, which is
 17 back three pages in the report, you can see there
 18 that — we need to expand the table, please, if we can
 19 do that:
 20 "Figure 1. Questionnaires returned by respondent
 21 type."
 22 You can see there that it looks as though the number
 23 of surveys actually returned by local authorities in
 24 England was five, yes? It's the little purple or
 25 burgundy-coloured —

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1 A. Yes, yes, I see that.
 2 Q. And three in Scotland, one of which was a nil return.
 3 A. Yes, I can see that.
 4 Q. And one in Wales; yes?
 5 A. Yes.
 6 Q. So a total of eight?
 7 A. Yes.
 8 Q. I think it's also acknowledged, if you look at the final
 9 paragraph on the same page, if you scroll down to that,
 10 please, that, and I quote, under the heading "Specifiers
 11 and Suppliers":
 12 "The suppliers and specifiers identified a total of
 13 193 units, but it has not been possible to quantify how
 14 many of these units are duplicates of those already
 15 provided by the local authorities."
 16 Now, just pausing on that sentence, and taken
 17 together with the table, do you agree that this is
 18 really quite a long way from the comprehensive survey of
 19 the UK building stock that was proposed in the bid for
 20 this contract?
 21 A. Well, the results — the issue with a lot of these types
 22 of surveys is, indeed, in getting the responses back.
 23 I mean, it's very difficult to get busy people to
 24 respond and to see the need to respond. And it also
 25 probably points to the fact that a lot of the local

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1 authorities didn't actually know the answer to a lot of
 2 the questions.
 3 Q. Well, let's just see.
 4 If we just go back, please, to {BRE00041836/5}, we
 5 looked at this earlier but I just want to revisit it in
 6 the light of the answer that you've just given us.
 7 This is the bid document we saw, and the heading
 8 "Programme of Work and Method Statement". Under the
 9 title or heading "Preferred Approach" at the start of
 10 the page, it says:
 11 "The approach adopted in this proposal is to provide
 12 the Department with information relevant to actual
 13 construction practise. This information will be derived
 14 from a comprehensive survey of the U.K. building stock
 15 which will form the basis for DETR to specify generic
 16 external cladding systems for experimental
 17 investigation."
 18 It's clear that you were bidding for a contract in
 19 which there would be a comprehensive survey of the UK
 20 building stock.
 21 Now, it's right, looking at the responses we have
 22 seen, that at that stage you hadn't done a comprehensive
 23 survey, had you?
 24 A. Well, as I said earlier, I mean, it would have been
 25 discussed at all stages with the department, with the

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1 fact that we were getting a lot of no responses,
 2 I guess, or nil returns, and the department, in
 3 discussion with us, would have decided if that was
 4 adequate or not.
 5 Q. Presumably they did, did they?
 6 A. Well, yes. The fact that the project continued, that
 7 must have been the conclusion.
 8 MR MILLETT: Mr Chairman, I have three questions left on
 9 this line before turning to a slightly different line of
 10 questions on the same document.
 11 SIR MARTIN MOORE-BICK: Yes.
 12 MR MILLETT: If you go, please, to page 10 of the survey,
 13 that's back at {BRE00041887/10}, at the second bullet
 14 point in the middle of your screen, it says:
 15 "Whilst no one clear system was identified, the
 16 majority of systems used by local authorities appears to
 17 be the render based systems, with rainscreen systems
 18 representing around 12% of the market."
 19 Did you yourself genuinely consider that conclusions
 20 based on such a limited data set, 13 responses from
 21 local authorities and only 12% of the market for
 22 rainscreen, some of which was duplicated, could truly
 23 have been considered to be representative or reliable?
 24 A. Well, this conclusion is obviously based upon the
 25 information that we had and the survey returns that we'd

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1 had. As I say, I think part of the discussion would
 2 have been which authorities had actually responded as
 3 well, because obviously some have, you know, much bigger
 4 areas of responsibility and many more buildings than
 5 others.
 6 Q. Did you yourself consider at the time that such
 7 a limited data set was appropriate as the basis for
 8 a government-funded experimental testing programme of
 9 such importance to fire safety?
 10 A. I'm sure we would have discussed this, as I said, at the
 11 time, yes.
 12 Q. Yes. You said that, and I just want to know whether you
 13 yourself, in your own head, thought that this limited
 14 data set was safe and sufficient?
 15 A. I would have been guided by the discussions that had
 16 happened and whether — as I say, I think a key element
 17 of that would be who had responded in terms of the local
 18 authorities, et cetera, as well, which — and if the
 19 department had considered that this was adequate to move
 20 forwards, then that's what we would have done.
 21 Q. That's not quite answering my question. I would like to
 22 know your own view at the time.
 23 Did you think that this data set was sufficient and
 24 safe or did you not?
 25 A. I must have been convinced that it was okay to continue.

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1 Q. Who convinced you?
 2 A. Well, I'd have been convinced by the information that
 3 was being presented to me and, you know, the fact that
 4 we were going to proceed to the experimental programme.
 5 Q. Were you convinced by the nature of the data or were you
 6 convinced by a person being persuasive?
 7 A. I don't recall. I mean, it would have been a bit of
 8 both, I think.
 9 Q. And can you explain, if you considered it yourself, why
 10 it was that such a limited data set was adequate for
 11 this purpose?
 12 A. Well, I guess as well, factored into all of this would
 13 have been that there was some degree of time imperative
 14 in proceeding, based upon the pressure that the
 15 department was probably under from the select committee.
 16 And, you know, you could, in an ideal world, say, "Well,
 17 we're going to spend, you know, a considerable length of
 18 time to try to get more responses back", and I'm sure
 19 a lot of effort would have been put into chasing up
 20 questionnaires and responses anyway, but you reach
 21 a point where you have to decide whether you have enough
 22 information and you're going to progress or you're not.
 23 MR MILLETT: Yes, thank you.
 24 Mr Chairman, is that a convenient moment?
 25 SIR MARTIN MOORE-BICK: I think it is, yes.

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1 It's time we had a break, isn't it, Dr Smith? We'll
 2 stop now. We'll resume at 11.45, please. Again, please
 3 don't talk to anyone about your evidence while you're
 4 out of the room.
 5 THE WITNESS: Thank you.
 6 (Pause)
 7 SIR MARTIN MOORE-BICK: 11.45, please.
 8 (11.32 am)
 9 (A short break)
 10 (11.47 am)
 11 SIR MARTIN MOORE-BICK: All right, Dr Smith?
 12 THE WITNESS: Yes, thank you.
 13 SIR MARTIN MOORE-BICK: All right, let's keep going.
 14 Yes, Mr Millett.
 15 MR MILLETT: Yes, thank you, Mr Chairman.
 16 Dr Smith, if we can please carry on with the
 17 document we were on, {BRE00041887/10}, please, you can
 18 see there there's a heading, "Fire Breaks", and in the
 19 second sentence of that paragraph underneath it, it
 20 says:
 21 "The use of fire barriers appears to be very
 22 sporadic and typical responses included 'only fitted
 23 when asked' or 'unknown'."
 24 Just focusing on that sentence, did that cause you
 25 concern at the time?

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1 A. I suppose the fact that it's mentioned there is a flag
 2 that, yes, there are issues around the use of fire
 3 barriers.
 4 Q. It's right, isn't it, that at this point cavity barriers
 5 had been recommended for more than a decade by Approved
 6 Document B?
 7 A. Correct.
 8 Q. Do you know whether any action was taken in response to
 9 this finding?
 10 A. I don't know if any action was taken at that particular
 11 time, no. No, I don't.
 12 Q. You don't know?
 13 A. No.
 14 Q. You didn't follow up or seek to find out whether action
 15 was being taken?
 16 A. No.
 17 Q. Why's that?
 18 A. This was a finding of the research, and the research
 19 obviously was only part-way through.
 20 Q. Did you have any discussions that you can recall about
 21 that topic with Anthony Burd or Brian Martin?
 22 A. I don't recall.
 23 Q. You don't recall?
 24 A. No.
 25 Q. Do you know whether Sarah Colwell was involved in any

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1 such discussions with them or with you about this topic?
 2 A. I don't know whether Sarah would have discussed it with
 3 them or not. I mean, the fact — sorry, just to say,
 4 I mean, Brian obviously was part of this research
 5 anyway, so Brian would have been aware of this.
 6 Q. Right.
 7 A. Yes.
 8 Q. Yes.
 9 Can we then go to page 12 {BRE00041887/12} and look,
 10 under the heading "Procurement", at the second paragraph
 11 there. It says this:
 12 "It is evident that the insulation industry has
 13 a number of highly active lobbying groups. The approach
 14 taken by the two main factions: the mineral wool
 15 manufacturers and the polymeric core suppliers has been
 16 one of highly aggressive marketing against their
 17 opposition. This has led to several articles in the
 18 construction press."
 19 What was the basis for those observations?
 20 A. I can't recall the specifics, but, I mean, I guess we
 21 were aware of some activity in the construction press,
 22 as this says.
 23 Q. Do you know to which manufacturers this report was
 24 referring there?
 25 A. It was more likely to refer to the trade associations

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1 associated with, you know, the different generic types
 2 of manufacturers.
 3 Q. The factions that are identified are manufacturers on
 4 the one hand and suppliers on the other, not trade
 5 associations. Do you know who the manufacturers there
 6 and the suppliers there were?
 7 A. Not at this point in time, no, I don't.
 8 Q. Later?
 9 A. No, I mean sat here today, I can't recall, sorry.
 10 Q. Right. Do you know whether the department was given the
 11 identity or knew the identity of the companies this
 12 report was referring to here?
 13 A. I would imagine they probably were, yes.
 14 Q. But you didn't have any discussion about this
 15 factionalisation?
 16 A. Not me personally.
 17 Q. Who, then, at the BRE, can you help?
 18 A. Well, again, it could very well have been Brian Martin
 19 and/or Sarah Colwell.
 20 Q. Let's look at the next paragraph on that same page. It
 21 says this:
 22 "Should the department [choose] to partner these
 23 companies for the supply and installation of their
 24 products for this project, they should be aware of this
 25 background. Experience suggests that the industry

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1 sector will wish to ensure the maximum publicity from
 2 this work to the detriment of their opposition and this
 3 may prove difficult to manage. In addition, it is
 4 important to ensure that the work is independent and
 5 free from undue commercial influence, which is difficult
 6 to control when partnering with industry. Whilst we are
 7 happy to work with these organisations it may be more
 8 politically expedient to purchase the materials and
 9 services on the open market in order to ensure that
 10 a level playing field is maintained in the market
 11 place."
 12 Now, the companies, of course, manufacturers and
 13 suppliers, are not named in the report. Was it your
 14 understanding that the department would need to know who
 15 they were in order to be informed properly when making
 16 decisions on partnering with industry for the supply of
 17 products for the project?
 18 A. Yes, and I'm sure those discussions would have taken
 19 place.
 20 Q. Why are you so sure?
 21 A. Because they would want to understand what the
 22 background to this would be.
 23 Q. Coming back to the point, were you party to those
 24 discussions?
 25 A. Not that I can recall.

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1 Q. Right.
 2 What was the experience that suggested that industry
 3 would seek to ensure maximum publicity from any
 4 partnership to the detriment of their opposition, as it
 5 says here?
 6 A. Well, that's not terribly unusual, really, with the
 7 industry at large. It's not just, I think, the
 8 insulation industry. You get the same sort of
 9 tendencies in other sectors as well. If they see
 10 a result that is particularly favourable in their view
 11 to their particular type of products, then they will
 12 seek to gain marketing advantage from that. So, you
 13 know — and especially if it is done under a government
 14 contract, you know, as shown in government research
 15 carried out by whoever, BRE or whoever else it might be,
 16 because, you know, they regard that with a higher degree
 17 of kudos.
 18 Q. Was it your own experience that it was difficult to
 19 control the independence of work and keep it free from
 20 undue commercial influence when partnering with
 21 industry?
 22 A. It's more difficult if you're partnering with them,
 23 where you're relying on them to basically supply
 24 products and materials. Whereas, I mean, as proposed
 25 here, if you go to the open market and use

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1 an independent third party to procure directly from
 2 suppliers and building suppliers, then you've got
 3 product that is actually taken out of the market —
 4 Q. Yes, I see that.
 5 A. — and the supply chain.
 6 Q. Do you know whether products for this programme were
 7 actually purchased on the open market?
 8 A. I believe they were, yes, and that's probably as
 9 a consequence of these observations.
 10 Q. Looking at this paragraph and hearing your answers just
 11 now, Dr Smith, can we take it from that that, as early
 12 as 2000, you — the BRE, certainly — had good reason to
 13 be sceptical of the manufacturers in the insulation
 14 industry?
 15 A. Well, and other factions within the construction
 16 industry in general.
 17 Q. Right, to the extent that you saw fit to warn government
 18 that those manufacturers and perhaps others may try to
 19 influence research for their own financial benefit in
 20 a way which might be difficult to control?
 21 A. Yes, especially at this particular time because, as
 22 I say, I think there was a lot going on at that time, as
 23 evidenced by articles in the construction press at the
 24 time.
 25 Q. Just give us a hint of what that was. What was going on

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1 that might aggravate or exacerbate the attempts by
 2 manufacturers and suppliers to influence the research in
 3 that way?
 4 A. Not necessarily to influence the research, but in terms
 5 of, you know, the aggressive marketing that was evident
 6 at the time.
 7 Q. Now, sticking with this document, I want to ask you some
 8 questions about the experimental testing programme.
 9 If we stick with page 12 {BRE00041887/12}, you can
 10 see lower down the page, if we scroll down, there's
 11 "Option One — Fire Note 9", and that says:
 12 "From the information provided in the survey and in
 13 order to address the trends towards increasing thermal
 14 and acoustic performance in the residential housing
 15 market, the following experimental programme is
 16 proposed. This option does not provide any indication
 17 of the performance of built-up systems or preformed
 18 insulation panels. The tests would be carried out in
 19 accordance with BRE fire Note 9 using the existing test
 20 facility at BRE Cardington."
 21 Do you see that?
 22 A. Yes.
 23 Q. Then if we just read down, you can see there's "System
 24 Type One" with U-values, and that has:
 25 "Set 1 Rendered systems — No fire barriers, standard

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1 fixings .
 2 " ■ Test 1 — Mineral Fibre ...
 3 " ■ Test 2 — Expanded Polystyrene ...
 4 " ■ Test 3 — Phenolic ..."
 5 Then you repeat that again with fire barriers .
 6 Then if you turn the page {BRE00041887/13}:
 7 "System Type Two — Equivalent 'U' value for System
 8 Type One.
 9 " ... Ventilated Rainscreen ... No fire barriers .
 10 " ■ Test 1 — Metal faced panel on metal rail ...
 11 " ■ Test 2 — Non combustible panel on wooden battens
 12 (mineral fibre insulation).
 13 " ■ Test 3 — Class 0 panel on metal rails (mineral
 14 fibre insulation).
 15 " ■ Test 4 — Class 0 panel on wooden batten (mineral
 16 fibre insulation).
 17 "Repeat Set 2, Tests 3 and 4 with fire barriers ."
 18 I've taken that quite quickly .
 19 Then there are some costings at the bottom of each
 20 of those options .
 21 Who designed that testing programme; do you
 22 remember?
 23 A. I don't recall , but I would anticipate that that was
 24 done by the project team, which would have obviously
 25 been Sarah Colwell, Brian Martin and others involved in,

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1 you know, the project on a day—to—day basis.
 2 Q. Right. What was your own involvement?
 3 A. I wouldn't have had any involvement in the design of the
 4 experimental programme and the options, other than being
 5 asked, I guess, at some point to approve the report.
 6 Q. Do you know how the various components were chosen?
 7 A. No, I don't.
 8 Q. Do you know what the technical or practical rationale
 9 for choosing these products and, in particular , the
 10 particular cladding configurations was?
 11 A. No, I don't. I mean, I guess it would have been guided
 12 in principle by the responses to the questionnaire and
 13 so on as well .
 14 Q. Right.
 15 Can we look at page 13 {BRE00041887/13}, please,
 16 which is "Option Two — Modified Fire Note 9", as you can
 17 see there. There's a long text underneath that, and it
 18 says at the start :
 19 "During discussions [then there's an end note 8,
 20 which I'm going to come to] it has become increasingly
 21 obvious that there are several issues relating to the
 22 use of built—up systems and preformed insulation panels
 23 that should be addressed as part of this project. It
 24 should also be noted that the joint British Standards
 25 committee working on the Fire Note 9 test method is

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1 recommending that a part 2 of the standard be developed
 2 to address the testing of built—up, preformed insulation
 3 (where no masonry wall is present) and curtain wall
 4 systems. We currently have no experience of their fire
 5 behaviour in this scenario."
 6 Now, according to end note 8, if you go to page 15
 7 {BRE00041887/15}, the discussions that are identified
 8 there in that first line of that paragraph are said, if
 9 you look at 8, to have taken place at a meeting at DETR
 10 on 24 July 2000.
 11 Do you recall that meeting?
 12 A. I don't.
 13 Q. You can't tell us who attended or what was discussed?
 14 A. No.
 15 Q. Do you know whether it was minuted by the BRE?
 16 A. I don't know.
 17 Q. You haven't seen a minute?
 18 A. No, I haven't. I mean, at that time, when the framework
 19 management contractors were in place, it would be
 20 normal, if they were present, for them to basically take
 21 some notes, actions at least .
 22 Q. It may help you, but the meeting of 24 July 2000 is the
 23 same day that this document gets signed off. Do you
 24 remember having a meeting very, very close —
 25 A. No. It probably indicates that I was not involved in

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1 that meeting.
 2 Q. Do you know what the issues were relating to the use of
 3 built—up systems and preformed insulation panels that
 4 should be addressed as part of that project, as it says?
 5 A. No, I don't.
 6 Q. Now, it's right, I think, that the joint British
 7 Standards committee which is referred to was working on
 8 the conversion of Fire Note 9 into what eventually
 9 became BS 8414 part 1 and then part 2.
 10 A. Yes.
 11 Q. Going back, if we can, please, to page 13
 12 {BRE00041887/13}, there are two paragraphs I want to
 13 read to you next, the second and the third paragraphs on
 14 that page under option 2. The second paragraph says:
 15 "The major change between the existing test method
 16 and the second scenario discussed above, is the
 17 influence of an internal masonry wall. The existing
 18 test facility is designed with this internal wall in
 19 place. This is an inappropriate test scenario for the
 20 built—up and preformed insulation systems that are
 21 installed , in practice, without an internal masonry
 22 wall. In order to address this issue the test facility
 23 will need to [be] redesigned.
 24 "From the work undertaken in the 1997 PiT project we
 25 have some limited knowledge of the behaviour of

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1 proprietary ventilated rainscreen systems and we are
 2 aware of some work under a DOE contract 39/3/370 cc 972,
 3 but we do not have access to this data so no comment can
 4 be made on its suitability for use in this study."
 5 Now, PiT, that's Partners in Technology, isn't it?
 6 A. Yes.
 7 Q. If we go back to page 15 {BRE00041887/15}, if we can,
 8 please, we can see end note 11, which is what is
 9 signified by the reference to that project. It says
 10 there, under end note 11:
 11 "Colwell, S. Smit, D. Andrews, A. Connolly, R.,
 12 'Fire Note 3 – Test method to assess the fire
 13 performance of external cladding systems'. CR 213/96.
 14 BRE 1996."
 15 That's Fire Note 3, isn't it?
 16 A. Yes, it appears so.
 17 Q. Do you know what specific work undertaken in the 1997
 18 PiT project is being referred to here?
 19 A. No, I don't.
 20 Q. Do you know who carried out that work?
 21 A. The authors as listed would have all been involved in
 22 that project, and that would have all been headed up by
 23 Tony Morris.
 24 Q. As a result of that project, the 1997 PiT project, what
 25 was your knowledge about the behaviour of proprietary

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1 ventilated rainscreen systems?
 2 A. At that time, in 1996, I would have had no knowledge at
 3 all.
 4 Q. What about by 2000 and the time of this document?
 5 A. My knowledge in 2000 would have been based upon the work
 6 that was being undertaken under this contract.
 7 Q. Right, I see. And what about the evidence given to the
 8 select committee the year before?
 9 A. I wasn't involved in that at all.
 10 Q. Do you know in what way the knowledge was limited, as is
 11 said?
 12 A. I guess they're referring to the possibility that they
 13 hadn't tested any of those types of systems and,
 14 therefore, had no knowledge as to how they would perform
 15 in this kind of scenario.
 16 Q. I see. Was DOE contract 39/3/370 the contract which led
 17 to Fire Note 3?
 18 A. I don't know.
 19 Q. You don't know.
 20 After this report, did you obtain access to the data
 21 under that contract to see for yourself what it said?
 22 A. No, I wouldn't have done.
 23 Q. Why is that?
 24 A. I would have expected the project team to have been
 25 utilising that if it was available, but I think they've

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1 said in this report that it wasn't available,
 2 didn't they, on that previous page?
 3 Q. Going back, please, if we can, to page 13
 4 {BRE00041887/13}, it says at the foot of the page:
 5 "Accepting the budgetary constraints associated with
 6 this project, the large-scale experimental programme may
 7 be better served by considering a modification to
 8 Fire Note 9 to allow built-up systems and preformed
 9 insulation panels to be tested. In order to undertake
 10 this change in test scenario a new test facility would
 11 be required. The construction of such a facility would
 12 reduce the budget available for the purchase and supply
 13 of full-scale systems but would provide a good basis on
 14 which to expand the scope of the existing guidance given
 15 BR135 to cover the emerging market trends for which we
 16 currently have no data. This data could also be used to
 17 support the British Standards activity.
 18 "It is not possible to offer fixed budgetary figures
 19 for this option, but should this proposal be considered
 20 worthy of further consideration, a costing could be
 21 obtained."
 22 Now, given the lack of data on emerging market
 23 trends, as we saw from the survey, and given that the
 24 data could also support the conversion of Fire Note 9
 25 into a British Standard running in parallel with this

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1 work, as I think you told us, did you yourself recommend
 2 to the department that they should proceed with
 3 option 2?
 4 A. I don't recall.
 5 Q. You don't recall.
 6 Which was the option that you would have preferred
 7 the department to take?
 8 A. I mean, from our perspective, I think it was just
 9 important to outline what the options were so that they
 10 had the information to make their decision. I mean, it
 11 would not — you know, we were just using the
 12 information that we had to say: well, this is what you
 13 can do, you can go this route or you can go this route,
 14 and it's up to you whether you want to expand the scope
 15 along the lines that's being proposed in option 2 or
 16 not. I mean, I don't think I would have particularly
 17 had a preference, as you suggest.
 18 Q. Was option 2 for the testing programme given
 19 consideration or further consideration by the
 20 department?
 21 A. I'm sure it would have been given consideration.
 22 Q. Was it ever costed by the BRE?
 23 A. I don't recall.
 24 Q. Now, it's right, I think, isn't it, that the testing
 25 programme which was eventually undertaken and then

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1 reported as part of this project was different both from
 2 option 1 and from option 2, as set out in the report
 3 we've been looking at?
 4 A. I don't recall all the details, but if that's what
 5 you're telling me, yes.
 6 Q. Well, we'll look at the details very shortly, but do you
 7 remember that fact, that the testing programme
 8 eventually undertaken the following year was different
 9 from what was proposed?
 10 A. I don't recall it specifically, but --
 11 Q. Right.
 12 A. -- that could very well be the case.
 13 Q. I'm so sorry, yes.
 14 Do you recall that a total of 14 full-scale tests
 15 were carried out, with a third set of tests on composite
 16 panel systems included?
 17 A. In broad terms, yes.
 18 Q. Yes.
 19 Do you know how the testing programme that was
 20 eventually carried out was decided upon?
 21 A. Well, it would have been a discussion with the project
 22 team and the department.
 23 Q. Yes, clearly, but what were the factors that led to the
 24 decision to carry out the testing programme in the form
 25 in which it was?

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1 A. I don't know the details. I don't know the detailed
 2 discussion that took place.
 3 Q. By whom was the decision ultimately taken to carry out
 4 the test programme in the form that it was?
 5 A. Well, ultimately it would have been signed off by the
 6 department.
 7 Q. Do you know who?
 8 A. No.
 9 Q. Do you know when it happened? By which I mean was the
 10 ultimate programme decided before the tests began or
 11 did it evolve as the tests happened over the months
 12 between May and November 2001?
 13 A. I don't recall.
 14 Q. Let's just look at a document, if we can. Can we go to
 15 {BRE00006285}. This is an email from Sarah Colwell to
 16 Anthony Burd of 10 August 2001, and you will see that
 17 you are copied in on it, as is Peter Field. This is
 18 during the course of what became known as the cc1924
 19 testing programme. Just looking at the text -- I'm not
 20 going to read it all out to you -- it essentially says
 21 that this is a proposal for changes to the testing
 22 programme some time after it had begun.
 23 A. Okay.
 24 Q. Do you remember that?
 25 A. Not specifically, but, yes, I can see this.

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1 Q. If we look at the final three paragraphs on page 2 of
 2 this email {BRE00006285/2}, if we go to that, I think
 3 you can see that Sarah Colwell is proposing changes to
 4 the testing programme at this point, August 2001; yes?
 5 A. Yes.
 6 Q. Now, in terms of the suggested options for the
 7 full-scale testing, which we'll come back to, the
 8 rendered systems, which were set 1, tests 2 and 3,
 9 weren't all repeated with fire barriers. Take that from
 10 me.
 11 A. Okay.
 12 Q. Do you know why that is?
 13 A. Specifically, no, I don't. It may have been a case of
 14 there was a fixed budget that the department had to
 15 spend on this work and that, in order to undertake some
 16 different types of tests, they needed to, you know,
 17 reduce the amount of tests they did elsewhere. But
 18 I don't specifically know.
 19 Q. You don't know.
 20 Take it from me also that the ventilated rainscreen
 21 system tests in set 2, tests 3 and 4, were also both not
 22 repeated with fire barriers. Was that for the same
 23 reason, so far as you can --
 24 A. Yes, again, I don't know specifically.
 25 Q. In fact -- and we'll come back to it in detail

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1 shortly -- it's right, isn't it, that of the full-scale
 2 tests undertaken, all 14 of them, only two, one render
 3 and one rainscreen system, actually contained fire
 4 barriers?
 5 A. That could very well be true.
 6 Q. Is the reason for that financial, to the best of your
 7 recollection?
 8 A. Probably. Probably.
 9 Q. Let's then go to the test programme analysis report.
 10 This is {BRE00041882}.
 11 If we go to page 1 of that document, it's a client
 12 report prepared for Mr A Burd in the ODPM. You can see
 13 the date at the bottom: 19 September 2002.
 14 A. Yes.
 15 Q. That's an important date. I'll call this the analysis
 16 report, okay? That's 19 September.
 17 If we go to page 2 {BRE00041882/2}, we can see that
 18 it was prepared by Sarah Colwell and approved by you,
 19 Dr Smith.
 20 A. Correct.
 21 Q. Yes.
 22 If we go to page 5 {BRE00041882/5}, we see the
 23 introduction section, and if you look at the second
 24 paragraph and the five bullet points under it, it tells
 25 us that:

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1 " ... 14 full-scale fire tests were undertaken using
 2 the Fire Note 9 test methodology, the results from this
 3 work are presented in BRE report 209169 revision 1. The
 4 systems identified and tested at full-scale were also
 5 assessed at intermediate and bench scale using the
 6 following test methods ..."
 7 Then you've got the BS 476-6 and 7 tests, and three
 8 of the European norm tests, the EN tests. Do you see
 9 that?
 10 A. Yes.
 11 Q. Now, before we go through these, the intermediate and
 12 bench scale tests, what are those?
 13 A. The single burning item test, the BS EN ISO 11925-2 and
 14 the BS 476-6 and 7.
 15 Q. Right.
 16 A. So all of those except for the ISO 9705.
 17 Q. Yes.
 18 Just for clarity, if we turn to page 10
 19 {BRE00041882/10} and table 1, we see a summary of the
 20 systems tested at intermediate and bench scale.
 21 Page 10. It refers to 13 systems. Now, there may be
 22 a reason for that, and I just want to see if you can
 23 help me with it.
 24 If we go to page 23 {BRE00041882/23} and look at
 25 table 8, the only difference between tests 3 and 4 under

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1 set 2, "Render Systems", you see those --
 2 A. Yes.
 3 Q. -- is the provision or otherwise of fire barriers; yes?
 4 A. Yes.
 5 Q. Yes. Is it right, fire barriers, of course, can't be
 6 incorporated into intermediate and bench scale tests,
 7 can they?
 8 A. Correct.
 9 Q. Does that explain why there are only 13 systems in
 10 table 1 on page 10, which summarises the intermediate
 11 and bench scale results?
 12 A. Yes, that will be the case.
 13 Q. Yes, thank you.
 14 Now, do you remember, when did this testing
 15 programme begin?
 16 A. I can't recall that.
 17 Q. We have it at about June 2001, possibly May. Does that
 18 ring a bell with you?
 19 A. Yeah, I don't know.
 20 Q. Right.
 21 What was your role in the testing programme?
 22 A. So far as I can recollect, I mean, no role. I wasn't
 23 carrying out the tests, if that's what you mean.
 24 Q. Were you supervising Sarah Colwell's work?
 25 A. Insofar as she might want to come and discuss issues

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1 with me, flag things up, but the actual tests would have
 2 been carried out by the testing teams in the
 3 laboratories that are expert and competent to do so.
 4 Q. Did you supervise any aspect of that?
 5 A. No.
 6 Q. Did you supervise any aspect of the production of the
 7 results from the tests or their collation or their
 8 analysis?
 9 A. Only insofar as I would have reviewed this when
 10 I reviewed the report.
 11 Q. Does that tell us that your only involvement in this was
 12 approving this document?
 13 A. That would have predominantly been my involvement,
 14 unless we'd have had some, you know, discussions leading
 15 up to this.
 16 Q. When you sat down and applied your name as approver to
 17 this document, what did you have in front of you, other
 18 than the report itself?
 19 A. I don't recall, but -- yeah, I don't recall.
 20 Q. No, not specifically. Let me ask it differently.
 21 Did you have anything else on your desk when you
 22 were approving this document other than this document?
 23 A. Yeah, I don't recall. I don't know.
 24 Q. Would it have been your usual practice to examine the
 25 underlying test data for each of these 14 tests and

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1 check the conclusions that Sarah Colwell had reached?
 2 A. No, not necessarily. Not to have gone through every
 3 single, you know, BS 476 test report, for example.
 4 Q. What did the role of approver, then, of this report
 5 involve?
 6 A. Well, because -- and the reason I wouldn't do that is
 7 because, in producing a BS 476-7 test report, for
 8 example, then that would go through its own approvals
 9 process before it was delivered to the end client, even
 10 if that's an internal client within BRE. So Sarah would
 11 have received approved test reports and, you know, the
 12 role -- there would be no need for me to go back and
 13 re-approve something that had already gone through
 14 an approvals process.
 15 Q. So what did you actually do with this document?
 16 A. I would have reviewed this document as submitted to me.
 17 Q. So you read it and signed it?
 18 A. And query anything, pass comments. I mean, as I said
 19 earlier, the whole role of the approver is basically to
 20 read the document, to check for spelling mistakes, check
 21 for paragraphs, make sure it all reads and makes sense.
 22 If anything doesn't make sense or isn't clear, then that
 23 might lead to, well, comments being fed back or
 24 a discussion, or if any of the conclusions didn't appear
 25 to stack up or be supported by the evidence as

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1 presented.
2 Q. So your review as approver was limited to the four
3 corners of this document?
4 A. Predominantly it would have been, unless something, you
5 know, had cropped up that had prompted me to go and look
6 at other information.
7 Q. Do you remember whether there was anything that cropped
8 up that prompted you to go and look at other
9 information?
10 A. I don't recall that. Not now.
11 Q. Wasn't your role on this project to quality assure the
12 technical detail of the outputs and the timeliness of
13 the delivery?
14 A. On this project, yes.
15 Q. Yes, as director of the centre for reaction to fire.
16 A. Yes.
17 Q. I would like to look, then, at the 14 full-scale tests
18 on the assumption, from the evidence you've just given
19 us, that you would have read or did read this document
20 carefully; yes?
21 A. Yes.
22 Q. Now, as I say, from the documents we've got, it looks as
23 if the tests were carried out at various times in the
24 months between the end of May/beginning of June 2001 and
25 14 November 2001, but on occasions more than one test

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1 was carried out within a single day. Does that sound
2 about right to you?
3 A. It could be, yes.
4 Q. Right.
5 Were you actually present at any of the large-scale
6 tests?
7 A. I don't recall being present, no.
8 Q. Right. Do you know who were present?
9 A. Well, clearly the project team would have been, and the
10 technicians that would have been running those tests.
11 Q. Right.
12 Sarah Colwell told us — {Day232/82:20} — that
13 although she couldn't tell us which tests you attended,
14 you and Brian Martin would have been present at some of
15 or all of the large-scale tests. What do you say about
16 that?
17 A. I don't recall being present at any of the large-scale
18 tests personally.
19 Q. Right.
20 A. And I would have no reason to be particularly. I would
21 have no role to play in conducting those tests. And
22 I think it's also important to point out that, you know,
23 you can't just — because of the proximity of Cardington
24 to BRE, it was at least a half day to get there and get
25 back, so it would have to be a planned visit. You

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1 couldn't just sort of walk out of your office and pop
2 down to the lab to see a test and return, so — you
3 know, and given that the project team would have been in
4 attendance, I would have added very little value to the
5 project team at that time.
6 Q. Well, as director of the centre for reaction to fire at
7 the time, and given that this was a government project
8 for which you had bid, and successfully so, did you not
9 think it appropriate on one or two occasions just to
10 attend at Cardington for the half day, in a supervisory
11 role, just to see what was going on and making sure that
12 everything was working properly?
13 A. Well, I would have attended if I'd been asked to for
14 a specific problem, but if reassured that everything was
15 on track and going well, then I would have no reason to
16 deviate from that. But, as I say, I do not recall —
17 I cannot recall whether I saw any of the tests or not,
18 but I don't recall actually going up there and
19 witnessing them.
20 Q. Does that tell us that your role as supervisor of this
21 project was essentially a reactive one; you would
22 respond to negative reporting but you didn't positively
23 go out and see for yourself what was happening?
24 A. I mean, we would meet on a reasonably regular basis to
25 review progress, but that would have been in the context

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1 of, you know, are we on track, how are we doing, do we
2 need additional resources to deliver this and so on and
3 so forth.
4 Q. Now, I'd like to show you a different document of
5 three days before this document, which is the BRE's
6 closing report, dated 16 September 2002. That is at
7 {BRE00041895}. Again, it is prepared for Mr A Burd of
8 the ODPM, and you can see the date there,
9 16 September 2002, at the bottom of your screen.
10 If we go to page 9 {BRE00041895/9}, please, we can
11 see a list of the 14 full-scale tests which were carried
12 out, with a description of the main components of the
13 systems in each test.
14 Do you know why these specific products aren't
15 identified by reference to the product name and
16 manufacturer?
17 A. I think this relates to the standard practice with
18 pretty much all of the government projects that actually
19 I've ever been involved in. It's always been
20 a requirement to describe the products in a very generic
21 way rather than using specific trade names and
22 manufacturers' descriptions. I think possibly the
23 reasoning behind that is to try to give the most widely
24 applicable scope where possible, and to prevent the
25 industry being able to use the data in the way that we

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1 discussed earlier .
 2 Q. Do you actually know or did the BRE actually know the
 3 identity of the specific products and manufacturers,
 4 leaving aside the absence of identification in this
 5 document?
 6 A. I don't recall , but I'll be very surprised if we didn't.
 7 Q. Well, I ask you that because the Inquiry has asked both
 8 the BRE and the department for their records and have
 9 been told that there aren't any, and Dr Colwell couldn't
 10 help when she was asked about it. But can you confirm
 11 that, at the time, that information was known to the
 12 BRE?
 13 A. As I say, I would be surprised if it wasn't.
 14 Q. Right.
 15 A. But I can't say definitively one way or the other.
 16 Q. No, of course.
 17 Do you know how and where that information was
 18 recorded?
 19 A. From my recollection, I think this project, as we
 20 discussed earlier , was — the systems were procured
 21 through an independent third-party contractor, so there
 22 would have been specifications generated by him — or
 23 them, sorry.
 24 Q. Indeed. But my question was slightly different : do you
 25 know how and where the information was recorded in the

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1 BRE's files?
 2 A. Oh, right. No, I don't for sure.
 3 Q. Right.
 4 Now, we looked earlier at the advice given by the
 5 BRE to the department in the survey summary and options
 6 report, particularly about the dangers of partnering
 7 with industry. Do you know whether, by this time, the
 8 department had decided to follow that advice or not?
 9 A. Yes, insofar as this project, I don't think we were
 10 partnering with industry. As I say, I think all the
 11 procurement was done through an independent third-party
 12 contractor.
 13 Q. And who funded the full-scale testing?
 14 A. The government department.
 15 Q. Right.
 16 A. ODPM.
 17 Q. What, all of it?
 18 A. Yes.
 19 Q. So can you confirm that no manufacturers or industry
 20 organisations were involved in funding any of these
 21 tests?
 22 A. As far as I'm aware.
 23 Q. Right.
 24 Did you yourself have any involvement in the process
 25 of purchasing or obtaining any of the products to be

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1 tested?
 2 A. I don't recall , but it's likely that I would have signed
 3 off the requisitions because we had a — you know,
 4 limits in terms of how much you could, you know, sign
 5 off a requisition for, and indeed some of those may have
 6 been above my sign-off limit as well, so they may have
 7 then gone up to Peter Field to sign.
 8 Q. Right. Do you remember whether, in requisitioning, you
 9 would identify a particular product or just a particular
 10 performance standard?
 11 A. It would have related to at least a generic description
 12 of the system, and then there would have been
 13 a discussion — because we'd have known — in order to
 14 issue a requisition , you would know how much it was
 15 going to cost roughly.
 16 Q. If we go, please, then, to {BRE00006370}. This is an
 17 email from Sarah Colwell to you on 15 March 2002, so
 18 this looks like it's after the tests, asking you about
 19 the drafted text for Mike Payne.
 20 Do you know who Mike Payne was?
 21 A. Yes, Mike Payne was the — one of the people that were
 22 working for AEA Technology at the time, who were the
 23 approved — the appointed third-party contractor that
 24 ran the management of the frameworks on behalf of ODPM.
 25 Q. If you look at the text below it, there's a telephone

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1 conversation in the first paragraph. In the second
 2 paragraph it says:
 3 "The provision of material for this project lies
 4 outside the framework agreement and from the outset we
 5 have undertaken to procure and supply the materials for
 6 this project on an at cost basis. The initial materials
 7 estimate supplied to you was the best estimate available
 8 at the time when the project was being developed. As
 9 the project has gone on we have continued to procure the
 10 materials and services required to complete this project
 11 whilst passing all invoices to yourselves directly. To
 12 date the invoices received and forward to you total
 13 £117,570.25 ex VAT. This covers all materials supplied,
 14 installed and tested to date to meet the requirements of
 15 this contract. This covers all full-scale tests but
 16 only the rainscreen and composite panel systems at
 17 small-scale and ISO room."
 18 Is it right, looking at that at least, that it was
 19 the BRE who bought the products for the testing but
 20 passed the bills back to AET?
 21 A. Yes, it does look like that.
 22 Q. So it would be the BRE who then actually chose the
 23 specific products to be tested?
 24 A. Yes, but that would have been agreed, as I say, upfront
 25 as in terms of the programme of work to be undertaken.

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1 Q. And do you know who it was who identified the specific
2 project to be acquired?
3 A. No, I don't.
4 Q. It says "project" in the question and that is what
5 I said; I meant "product".
6 A. Yes.
7 Q. No.
8 Can you help with what level of oversight and
9 decision-making you had about the components of each
10 full-scale test?
11 A. Very little.
12 Q. Sarah Colwell tells us, which is why I ask you, that the
13 procurement of the components of the systems to be
14 tested would have gone through you. That was
15 {Day232/88:1}. Is she right about that?
16 A. Only insofar as -- in terms of signing them off, the
17 invoices off, as described here, in terms of the
18 procurement. So, as I say, there would have been
19 discussions, I'm sure, with the contractor who was
20 procuring these within the scope of what was set out in
21 the reports to the department, where it had been
22 discussed which systems in generic terms they wanted to
23 test, and then we would have gone to the contractor to
24 provide us with a price for those, which would have then
25 been agreed and signed off, and that's where I would

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1 have signed off to say, yes, we can buy that, and then
2 that would have been sent back to the department. And
3 I hadn't remembered, but the actual external expenditure
4 part of this project then sat outside of the framework
5 agreement. So the framework agreement and the project
6 within that then only covered our staff time in carrying
7 out the works, rather than the purchase of all of the
8 materials.
9 Q. Did the department have any role to play in the
10 selection of the individual components making up each of
11 the full-scale tests?
12 A. I don't know to what extent -- I mean, they would have
13 done in a general sense.
14 Q. What do you mean, in a general sense?
15 A. Well, when you talk about specific components, I mean,
16 they wouldn't -- and I guess we didn't either -- have
17 a particular role in saying that you need to use these
18 batons and fixed at these centres and so on and so
19 forth, but in terms of the make-up, in terms of the
20 insulation and the render system or the rainscreen
21 system or whatever, then they would have seen that and
22 would have agreed to that.
23 Q. Do you know who designed the test rigs for each of these
24 14 tests?
25 A. The systems to actually go on to the rig --

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1 Q. Yes.
2 A. -- in terms of securing it on to the rig? It would have
3 been the contractor.
4 Q. The contractor being?
5 A. The third party that procured the materials. It was one
6 and the same --
7 Q. Just help me then. Is this AET?
8 A. No.
9 Q. So who was the contractor?
10 A. No. So we appointed an independent third-party
11 contractor to undertake the procurement and the
12 installation of the systems on to the rig.
13 AEA Technology were the contractor used by ODPM and
14 appointed by ODPM as their -- I think they were called
15 their research management contractor, and they acted as
16 the interface, the people that basically agreed and
17 accepted reports, let the contracts. They had a portal,
18 a database, where all of the reports and so on had to be
19 delivered through. So they dealt with the day-to-day
20 running of the project from the department's end.
21 Q. Who was your contractor?
22 A. Our external contractor?
23 Q. Who built the rigs -- who designed the rigs.
24 A. I don't know.
25 Q. Right.

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1 A. I'm sure there must be something in the -- well, I would
2 have thought there would be something in the documents
3 we provided to you.
4 Q. Now, the full-scale tests were designed and carried out
5 according to the methodology in Fire Note 9, as we
6 understand it; is that right?
7 A. That's my understanding.
8 Q. Can we go to {BRE00041882/23}, please. This is the
9 19 September report, the analysis report, and here we
10 see a table at page 23, "Summary of full-scale test
11 results", table 8. If you look at the table, it
12 contains the 14 tested systems listed and the results
13 are in the far right-hand column; yes?
14 A. Yes.
15 Q. "Fire Note 9 Pass/Fail."
16 A. Yes.
17 Q. You can see from that final column that 3 of the 14
18 tests resulted in a pass.
19 A. Yes.
20 Q. Do you see that?
21 A. Yes.
22 Q. They are render tests 4 and 5 and composite panels
23 test 4; yes?
24 A. Yes.
25 Q. And all the others failed?

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1 A. Yes.
 2 Q. So two of the systems which passed were in set 2, as
 3 initially proposed, render systems; yes?
 4 A. Yes.
 5 Q. And only one pass from set 3, the composite panels?
 6 A. Yes.
 7 Q. And no passes in set 1, the rainscreen panels. They all
 8 failed, didn't they?
 9 A. Yes.
 10 Q. I want to ask you briefly about something in the
 11 documents.
 12 Keeping page 23 up on the screen if we can, I wonder
 13 if you can help us with this, can we please have up
 14 {BRE00041912}. This is going to have to be in the
 15 native and may take a little time to pull up. It's
 16 an Excel spreadsheet which shows the same or more or
 17 less the same data as in table 8. If we open it, and
 18 keep it on the left—hand side, I think that will do.
 19 It's right, I think, can you help us, this is
 20 an Excel spreadsheet showing the same data as in table 8
 21 on the right—hand side of your screen?
 22 A. It appears so.
 23 Q. It appears so.
 24 A. I can only see two columns but —
 25 Q. Yes.

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1 A. I can't see the product descriptions.
 2 Q. No, and that's sheet 8, but let's go — if you look at
 3 table 8, you can see there are two render passes, but in
 4 the spreadsheet, on the left, you can see that there are
 5 three. Do you see that? Three passes on the render
 6 spreadsheet.
 7 A. That's the group at the top, I presume?
 8 Q. Yes.
 9 A. So I'm assuming that's the group at the top?
 10 Q. Yes.
 11 A. Yes, it's in a different order to —
 12 Q. It is.
 13 Let's look at row 6, which is identified as a pass;
 14 yes? Now, that's a test on a render system which
 15 incorporates phenolic. We can see that that same test
 16 is recorded in the table on the right—hand of your
 17 screen, as you see, as a fail. Do you see that?
 18 A. That's line 1, is it, on the —
 19 Q. It's row 6.
 20 A. But in table 8 it's row 1, is it?
 21 Q. In table 8 —
 22 A. Yes.
 23 Q. — it is, yes.
 24 A. Specimen 1 under "Render Systems".
 25 Q. Yes, "Phenolic insulation with acrylic render coat no

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1 fire barriers".
 2 A. Yes.
 3 Q. Can you explain the discrepancy?
 4 A. No. Not sat here right now.
 5 Q. Are you able to confirm that the particular test, render
 6 with phenolic, was in fact a fail?
 7 A. I would presume so.
 8 Q. Yes, and why would you presume so?
 9 A. Because that's the way it's been reported.
 10 Q. Right. Did somebody therefore look at the spreadsheet
 11 and correct the result, so that what went to government
 12 in the analysis report can be taken as the correct
 13 version?
 14 A. I would have expected so, yes, but I don't recall.
 15 Q. Thank you.
 16 Now, let's go back, then, to the closing reports at
 17 {BRE00041895/9}. You can take both of those documents
 18 off the screen and go back to that document, please,
 19 {BRE00041895/9}.
 20 Here we have the initial experimental programme
 21 under table 1. You can see under the heading
 22 "Rainscreen System" — do you see that?
 23 A. Yes.
 24 Q. Which is set 2, you've got item 5, aluminium sheets;
 25 yes?

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1 A. Yes.
 2 Q. Do you know the name of the aluminium sheet product?
 3 A. No, I don't.
 4 Q. Or the manufacturer? Presumably not.
 5 A. No.
 6 Q. Is it the case that these panels were in fact aluminium
 7 panels with a polyethylene core?
 8 A. I believe they were from the earlier document that you
 9 presented.
 10 Q. Yes. Indeed, they were one of the types of panels
 11 referred to in the literature review we've looked at
 12 taken from the Architect's Journal.
 13 A. Yes.
 14 Q. Good.
 15 So let's go to the analysis report of three days
 16 later, then, {BRE00041882/10}. Let's trace this
 17 through. If we go to that document — this is only
 18 three days later, as I say — and go to page 10 and
 19 table 1 in that, and look down at the systems there.
 20 Table 1, item 5, under the heading "Rainscreen", you
 21 can see a bit more detail, and it says:
 22 "Aluminium/polyethylene core sheets ..."
 23 Yes?
 24 A. Yes.
 25 Q. And then tracing it through to {BRE00041909}, we find

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1 a blank tabulated summary for all the testing results ,
 2 and in the final row, under the heading "Rainscreen",
 3 you see the description :
 4 "Aluminium/polyethylene core sheets on aluminium
 5 railing ."
 6 Now, Dr Colwell said that that product was ACM with
 7 a polyethylene core, and I think you would agree with
 8 that?
 9 A. Yes.
 10 Q. That was {Day232/90:21} and {Day232/91:19}.
 11 Do you remember being present at that test, the test
 12 which incorporated aluminium polyethylene core sheets on
 13 an aluminium railing?
 14 A. No, I don't.
 15 Q. Now, the date of that test, according to the Inquiry's
 16 records, was 18 July 2001. Does that trigger
 17 a recollection ?
 18 A. No. No, it doesn't.
 19 Q. Now, this test was notable in terms of its fire
 20 performance and, in particular, the early manual
 21 termination before six minutes was up. Do you recall
 22 that?
 23 A. No.
 24 Q. Did you not hear about that from others?
 25 A. I'm sure I would have heard about all of the tests in

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1 summary during various discussions, you know, in broad
 2 terms. But —
 3 Q. Can we go to — so sorry.
 4 A. No, go on, sorry.
 5 Q. Right. Can we go to {BRE00041912}, please.
 6 I'm so sorry, this will take a bit of time. It's
 7 easier and quicker to go back to table 8 in the
 8 19 September analysis report, if we can do that, which
 9 is at BRE000 — well, we're here now, all right. Leave
 10 it as it is.
 11 If you open that up at row 15, column R, you can see
 12 the termination time of 5.75 minutes; yes?
 13 A. Yes.
 14 Q. So that was one which was terminated very early on.
 15 A. Yes.
 16 Q. If you look to the left of that, you can see some other
 17 results: time to external under column L, three minutes,
 18 and the maximum temperature is also recorded.
 19 A. Yes.
 20 Q. Those were strikingly poor, weren't they?
 21 A. The times are, yes.
 22 Q. Yes.
 23 We'll come back to that in a moment, but just some
 24 further questions about the selection of these products.
 25 Do you know why a ACM polyethylene—cored product was

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1 chosen as one of the products to be tested in this
 2 programme?
 3 A. I don't recall, but looking back at the earlier report
 4 that we looked at earlier this morning, in terms of the
 5 survey responses, et cetera, my guess is that it
 6 followed through the planning and the programme from
 7 there.
 8 Q. Right. Does that tell us that, however good or bad the
 9 survey was in relation to its reliability as a data set,
 10 you knew enough to include ACM panels with
 11 a polyethylene core in your full — scale tests?
 12 A. Yes, because this is a research project, so you're
 13 looking to basically include a range of different
 14 products and materials to basically — well, test their
 15 performance, because a lot of these, as we also spoke
 16 about, we had no knowledge of how they would perform in
 17 these types of scenarios, and that was particularly true
 18 of the composite and rainscreen systems, and therefore
 19 you want to sort of include a range of systems that you
 20 can obtain data on, so that you can then look at how the
 21 test is performing against these types of products and
 22 it gives a basis upon which to benchmark performance and
 23 whether they're adequate or not. You know, if the tests
 24 gave passes for everything, you would take the view,
 25 well, the test isn't severe enough.

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1 Q. Right.
 2 Do you know who decided on the inclusion of ACM
 3 panels with a polyethylene core in this test programme?
 4 A. No, I don't.
 5 Q. Can we take it that the reason or one of the reasons it
 6 was included in this test programme is that ACM panels
 7 with a polyethylene core was in common use or at least
 8 common enough use to warrant inclusion?
 9 A. I don't know whether we would have had that information,
 10 other than it had been flagged up, I think, in the
 11 literature — the building survey, sorry, not the
 12 literature review. Well, that was included in the —
 13 Q. And based on the Architect's Journal's costings?
 14 A. Yes, yes, and obviously there was a vast number of
 15 different products that came out of the
 16 Architect's Journal details, and obviously all of those
 17 products could not be tested anyway, so it was a case of
 18 selecting a few. But I don't know who actually made
 19 that —
 20 Q. Was ACM with a polyethylene core, or indeed ACM with
 21 different kinds of core, a cladding product that you had
 22 come across before?
 23 A. No.
 24 Q. Can we take it from that that you had no knowledge one
 25 way or the other of its particular reaction to fire

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1 performance?
 2 A. Correct.
 3 Q. Now, you said you don't recall being present at the
 4 test. I'd just like to go back, please, if we can,
 5 to — we can probably use this document, but it may be
 6 better to use the report that was actually sent to
 7 government.
 8 Can we go, please, to the analysis report of
 9 19 September at {BRE00041882/23}, which is the results
 10 table at table 8.
 11 Now, if you go, please, to row 5, under the heading
 12 "Rainscreen System", that shows, as I've shown you
 13 already, that that failed at 5.75 minutes. That's
 14 a strikingly rapid time to failure, isn't it?
 15 A. Yes.
 16 Q. Do you remember what the reaction was by the BRE at the
 17 time to that result?
 18 A. I don't recall, no —
 19 Q. Do you remember —
 20 A. — at the time.
 21 Q. — what you were told by those who witnessed this test?
 22 A. Probably that it was a rapid failure and they would have
 23 presumably had the same view about the render system
 24 that failed and also the composite panel system that
 25 failed.

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1 Q. We can see the other results on the screen: time to
 2 external failure, 3 minutes, and to internal failure,
 3 4.34 minutes.
 4 A. Yes.
 5 Q. Do you know why the test was terminated at 5.75 minutes?
 6 A. No.
 7 Q. Did nobody tell you that it was terminated because it
 8 would have been dangerous to continue?
 9 A. I mean, that's — no, I don't know. No.
 10 Q. Did anybody tell you that they were shocked by what they
 11 had seen and shocked by the results?
 12 A. I don't recall that, no.
 13 Q. That was Sarah Colwell's reaction, as she told us in her
 14 evidence on {Day232/96:16}. Do you not recall her
 15 reporting to you that this particular test had had
 16 a shocking outcome and had been terminated early?
 17 A. I don't recall it in those terms, no.
 18 Q. You don't?
 19 A. But, you know, you can clearly see that it has failed,
 20 so ...
 21 Q. Well, there are failures and there are failures,
 22 aren't there?
 23 A. Yes, yeah, but it's part of the research, then, to make
 24 sure that the lines and the criteria that then follow in
 25 terms of the classification are such that these types of

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1 products can never pass the test. Whatever you do to
 2 them, they can never pass this test.
 3 Q. But, as you say, this was a research product and this
 4 was a product you had never come across before. When
 5 you saw the results or heard about the test, did it not
 6 strike you, did it not stick in your mind, that this, of
 7 all the products tested, had a particularly noteworthy
 8 result?
 9 A. Yes. I mean, I would have noted that it had failed and
 10 it had failed early. Yes.
 11 Q. Now, this was a class 0 product, wasn't it?
 12 A. Yes, I guess it was. Yes.
 13 Q. It was, and we have that elsewhere in this document.
 14 A. Yes.
 15 Q. For our records, it's at page 11 {BRE00041882/11}.
 16 Let's go to {BRE00041911/3}, please, "Rainscreen 3 —
 17 Aluminium + Isowool on metal", and you've got the
 18 detailed observations from the PE-cored aluminium
 19 rainscreen cladding test. They're there, starting at
 20 time 0:00, "Ignition of crib", and ending at 7 minutes,
 21 "Front and wing faces extinguished". You can see at
 22 5 minutes, "Flame approximately twice height of rig
 23 (20m)."
 24 Do you remember seeing these results at the time?
 25 A. I don't recall it, no.

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1 Q. Do you know who recorded these observations?
 2 A. No, I don't.
 3 Q. Looking up, it says at 3 minutes and 5 seconds, "Molten
 4 aluminium drops off front face". Do you remember
 5 reading that particular observation?
 6 A. I don't recall it, no, and the person that would have
 7 recorded the observations would have been part of the
 8 project team undertaking the test.
 9 Q. When you learnt about this result, did you yourself
 10 consider that this was a significant form of behaviour
 11 for a panel because of the potential for downward fire
 12 spread, the fire following the molten dripping
 13 polyethylene?
 14 A. Yes, and, you know, as I said earlier, I mean, the whole
 15 point of this research project was to get to the point
 16 where we could ensure that products that performed badly
 17 would never ever be able to pass the test.
 18 Q. Looking at the results I've shown you and the chronology
 19 that I've shown you here, particularly, at 5 minutes,
 20 the flames being approximately twice the height of the
 21 rig at 20 metres, did you conclude at the time that this
 22 was a catastrophic escalation?
 23 A. Well, yes, clearly it was not performing well in the
 24 test scenario that we were using, Fire Note 9, yes.
 25 Q. That's something of an understatement, isn't it?

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1 A. Mm.
2 Q. I mean, it's an outlier, if you look at the other
3 failures, to a very considerable degree.
4 A. Sorry, you want me to ...?
5 Q. Do you agree with me that what you've just told us is
6 something of an understatement, "not performing well"?
7 It's an outlier, if you look at the other failures, to
8 a very considerable degree, Dr Smith.
9 A. Well, there were only three products that actually
10 failed — passed, sorry. So an outlier? Yes, it was
11 very rapid in terms of its behaviour, but, as I say, it
12 just — it was part of the project to ensure that these
13 products could never ever be used.
14 Q. Yes, and on that answer, does that —
15 A. So — sorry, go on.
16 Q. Let me lead up to it.
17 Do you remember there being a sense of alarm at the
18 BRE in the wake of this test about this product which
19 would lead to the conclusion you've just given us, that
20 they should never ever be used?
21 A. I don't regard it as a sense of alarm. I mean, our
22 role, of course, is to present the data and the results
23 and the technical evidence. I mean, you know, you don't
24 sort of react in quite the way that you're suggesting,
25 I don't think.

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1 Q. Well, others did at the BRE, Sarah Colwell told us. She
2 was shocked.
3 A. Well, okay, that wasn't conveyed to me. I mean, I would
4 have looked at this report, I would have looked at the
5 facts and I would have looked at the way the facts were
6 reported and would have ensured that what was reported
7 was, you know, factually correct and supported.
8 Q. Mm.
9 Did you report to the department not just the facts,
10 the scientific objective data, but the human reaction
11 that your scientists conducting these tests had had?
12 A. I would not have had that discussion with the department
13 necessarily. I mean, that would have been had through
14 the project team. I mean Sarah and/or Brian Martin
15 would have had those discussions.
16 Q. You say they would have; do you know whether they did?
17 A. I don't know definitively, no, but I'll be very
18 surprised if they didn't, especially if they were there
19 and witnessed it.
20 Q. Wasn't it important to you, as the scientist, to drive
21 home to the department, to Anthony Burd, not just the
22 data on a page, but what it might signify in human
23 terms, so that he, in government, could really
24 understand the effect on real human lives in real
25 buildings?

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1 A. I don't think there was ever any doubt in my mind that
2 that was fully conveyed and that the department sort of
3 didn't understand. I think the department were very
4 aware.
5 Q. They were very aware. Now, were they aware —
6 A. On the basis of, you know, the research outcomes.
7 Q. Now, you've told us in your evidence just a few moments
8 ago that this test told you that this product should
9 never ever be used on a tall building.
10 A. Correct.
11 Q. And that was your conclusion and the BRE's conclusion,
12 was it, from that test result?
13 A. Yes.
14 Q. Do you remember yourself or anybody at the BRE conveying
15 that information in those terms or in like terms to
16 government?
17 A. In a broad sense, yes, that would have been conveyed, in
18 the sense that, you know, in the discussions about where
19 the criteria would sit and were adopted therefore in
20 BR 135, those parameters are set to ensure that
21 materials and systems of this type, and indeed some of
22 the others that also didn't perform well, would not be
23 acceptable within the context of the large-scale test
24 method.
25 Q. Did anybody at the BRE or in government consider

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1 alerting industry or local authorities or building
2 control or the NHBC or building owners to this result
3 and its obvious danger to life?
4 A. I don't know.
5 Q. You don't know?
6 A. No, I don't.
7 Q. Can I take it that the BRE didn't?
8 A. No, we would not have done. It would have been —
9 I mean, we would convey the results and the data,
10 et cetera, to the department, and then they would decide
11 what to do with those data and results and whether to
12 discuss it in a wider sense. So that's the way that
13 that would be handled and did work.
14 Q. I see.
15 Can we be just clear about one thing then: your
16 evidence to the Inquiry, is it, is that from the middle
17 of September 2002, to the best of your recollection, the
18 government was in no doubt at all that ACM panels with
19 a PE core should never ever be used above 18 metres?
20 A. Well, I can't say whether they took that all on board or
21 not. I mean, you'll have to ask the department
22 themselves as to what they actually — what their views
23 were. I can't speak on behalf of what individuals'
24 views were.
25 Q. No, I'm asking you to speak on your own behalf and on

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1 behalf of the BRE.
 2 My question — I'll put it again: is it your
 3 evidence that from the middle of September 2002, to the
 4 best of your recollection, as you saw it, the government
 5 was in no doubt at all that ACM panels with
 6 a polyethylene core should never ever be used above
 7 18 metres?
 8 A. Well, as I say, the bit that I can't accept is that the
 9 government had taken the view that they should not be
 10 used. I mean, I don't know that. All I can say and as
 11 far as I can go is that the results were reported within
 12 the context of the outputs from this project, and it was
 13 very clear what the results of those tests were,
 14 including ACM, but there were some other systems as
 15 well, and that information was there. And there had
 16 been, to my knowledge, discussions around those results
 17 and what they meant and how to set the criteria,
 18 therefore, in BR 135 going forwards.
 19 SIR MARTIN MOORE-BICK: Can I ask you this: do you know if
 20 any steps were taken to draw the government's attention
 21 to this particular result or was it simply left for it
 22 to find out for itself by reading the details of the
 23 report?
 24 A. Well, all the way through these projects, I mean, there
 25 would be meetings, progress report meetings, with, you

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1 know, departmental representatives, and, you know, you
 2 would have some fairly detailed presentations and
 3 feedback during those, which go beyond what was actually
 4 reported in the reports. So, you know, I have a high
 5 degree of expectation that that would have all been
 6 discussed during the progress of the project, basically.
 7 SIR MARTIN MOORE-BICK: Thank you.
 8 MR MILLETT: Let me just try this a slightly different way.
 9 Casting your mind back to September 2002, as best
 10 you recall it, were you in any doubt in your mind that
 11 the government understood, so far as you knew, that ACM
 12 panels with a polyethylene core should never ever be
 13 used above 18 metres?
 14 A. Well —
 15 Q. You can't speak for them, but you can speak for you.
 16 A. No, I can speak for myself, and I would say within the
 17 context of the work being undertaken in relation to
 18 Fire Note 9 at the time.
 19 Q. And the answer is yes?
 20 A. Within that context, of Fire Note 9, yes. So the extent
 21 to which they were prepared to accept Fire Note 9 as
 22 being representative.
 23 Q. Did this test performance of what was or what was said,
 24 I think, to be, at least, a class 0 product make you
 25 think about whether class 0 was an appropriate

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1 classification for the surface material or a product
 2 above 18 metres?
 3 A. I don't recall thinking about that specifically at the
 4 time. I mean, that wasn't the primary objective of this
 5 project, so I don't recall thinking about that at the
 6 time. I can't recall.
 7 Q. Did it occur to you that the fact that a product
 8 achieved class 0, such as this product, was no guide at
 9 all to whether it would meet the functional requirement
 10 B4(1)?
 11 A. The — whether it was a class 0 or not, class 0? Yes,
 12 I mean, insofar as — I think the whole purpose of doing
 13 this project and doing the development work on
 14 Fire Note 9 was for that very reason, to look at the
 15 performance of the system as a whole rather than looking
 16 at the performance of the individual elements within the
 17 system, which, you know, Ray Connolly's work had
 18 previously shown was not a reliable means for looking at
 19 the whole make-up of the external system.
 20 Q. Well, quite so, and that's why I asked the question. If
 21 nothing else, this test result would have told you — is
 22 this right? — that class 0 had now been empirically
 23 proved to be an utterly unreliable guide, at least in
 24 respect of this class 0 product, to whether it would
 25 meet the functional requirement B4(1)?

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1 A. If used in absolute isolation, yes.
 2 Q. If used in absolute isolation.
 3 A. If you just relied on that test alone.
 4 Q. Which of course, at the time, was the linear route to
 5 compliance with ADB, wasn't it?
 6 A. Yeah, I can't recollect off the top of my head, but
 7 probably, yes.
 8 MR MILLETT: Mr Chairman, is that a convenient moment?
 9 SIR MARTIN MOORE-BICK: Yes, I think it is. Thank you very
 10 much.
 11 Well, it's time we stopped for lunch, Dr Smith.
 12 We'll break off there. We'll resume, please, at
 13 2 o'clock, and, as before, please don't talk to anyone
 14 about your evidence while you are away from the room.
 15 Thank you very much.
 16 THE WITNESS: Thank you.
 17 (Pause)
 18 SIR MARTIN MOORE-BICK: Thank you, Mr Millett. 2 o'clock,
 19 please.
 20 (1.02 pm)
 21 (The short adjournment)
 22 (2.01 pm)
 23 SIR MARTIN MOORE-BICK: All right, Dr Smith?
 24 THE WITNESS: Yes, thank you.
 25 SIR MARTIN MOORE-BICK: Good. Thank you very much.

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1 Yes, Mr Millett, when you're ready.
 2 MR MILLETT: Yes, Mr Chairman, thank you.
 3 Dr Smith, I would like now to go back, please, to
 4 {BRE00041882/23}, which we were looking at before,
 5 page 23, table 8, under the heading "Render Systems".
 6 You can see under that section of this table that there
 7 are five tests, and there are references there to
 8 phenolic insulation and polyethylene insulation at
 9 items 1 and 2 respectively; yes?
 10 A. Yes.
 11 Q. Do you know what the name of the polyethylene insulation
 12 product was?
 13 A. No.
 14 Q. Nor the manufacturer?
 15 A. No.
 16 Q. Does the same apply to the phenolic insulation product
 17 and its manufacturer?
 18 A. Yes, it does.
 19 Q. Looking further down the table, under the heading
 20 "Composite Panel Systems", there are references to
 21 polyisocyanurate-cored panels and polyurethane-cored
 22 panels at items 1 and 2. Do you know the name of the
 23 polyisocyanurate-cored panel and manufacturer?
 24 A. No, I don't, sorry.
 25 Q. Do you know why only the core of these panels is

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1 described in this table?
 2 A. What, you mean as opposed to ...?
 3 Q. As opposed to the other products.
 4 A. Okay, so the fact it doesn't say steel-faced or
 5 whatever?
 6 Q. That's actually right, that's the point. Yes.
 7 A. Yes.
 8 Q. Yes. Do you know why it doesn't say so in the data?
 9 Do you know why the PIR and PUR-cored panels don't say
 10 they had steel facings?
 11 A. No, I don't, although for those type of composite panel
 12 systems, it was probably taken as read that they were
 13 all steel-faced.
 14 Q. Why would that be?
 15 A. Because that's what they were that were available in the
 16 market, to my understanding anyway.
 17 Q. Right. So you hadn't heard of aluminium foiled
 18 insulation?
 19 A. Not in terms of composite panel systems that are used
 20 on, you know, the outside of buildings.
 21 Q. I see. This is under the render systems as opposed to
 22 rainscreen?
 23 A. Under the composite panel systems, sorry, I thought
 24 that's the section we were talking about.
 25 Q. Yes, under that system, yes, so composite panel systems,

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1 your experience was that the panels were always steel?
 2 A. Yes.
 3 Q. I see.
 4 Now, neither of those panels achieved class 0 in the
 5 testing, did they?
 6 A. Which ones? The line 1 and 2?
 7 Q. The PIR and PUR-cored panels under composite.
 8 A. I don't know.
 9 Q. If we stay with the tests on page 23, you can see that
 10 both the test on the PIR-cored composite panel and the
 11 PUR-cored panel failed the full-scale test because of
 12 flame penetration. You can see that --
 13 A. Yes, I can.
 14 Q. Yes, in the column. Did that concern you at the time?
 15 A. Well, it was a -- I don't know whether it would have
 16 concerned me particularly other than it was additional
 17 data that we were collecting as part of this project --
 18 Q. Right.
 19 A. -- to guide the development of BR 135.
 20 Q. What did those results tell you about the
 21 polyisocyanurate and the polyurethane-cored products?
 22 A. Well, it basically gives you the reason that they
 23 failed.
 24 Q. Did it surprise you, looking up the table at the
 25 rainscreen system results, that none of the rainscreen

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1 systems tested passed under the full-scale test under
 2 what was then Fire Note 9?
 3 A. Yes, that's evident from the results as presented.
 4 Q. It is.
 5 A. Yes.
 6 Q. What I'm really seeking to understand is your reaction
 7 to it, if you had one? Were you surprised by that?
 8 A. Not necessarily, as I say, because this was all about
 9 setting pass and failure criteria for, you know, the
 10 large-scale test.
 11 Q. Indeed, but did you have a reaction? Did you have
 12 a thought about what that might mean as opposed to
 13 simply seeing visually the word "fail" on the page?
 14 A. Well, I mean, from BRE's perspective and my own
 15 perspective, I mean, we wouldn't then be looking to say,
 16 "Well, we can't fail everything, therefore we're going
 17 to change the criteria", if that's what you're
 18 suggesting.
 19 Q. Oh, no, not at all. I was actually really just seeing
 20 if you could tell me rather the opposite, whether you
 21 drew any conclusions about the fire safety of common
 22 products.
 23 A. Probably not at this particular stage.
 24 Q. No.
 25 Is it the case that you yourself simply drew no

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1 conclusions of your own about the fire safety of common
2 products?
3 A. Well, I mean, the data that's collected here is clearly
4 showing sort of a range of performances, and it's also
5 showing, you know, the sensitivity of systems to factors
6 such as fire barriers as well, I mean, because none of
7 these had fire barriers in them. So it's possible that,
8 if they were tested again with fire barriers in the
9 relevant positions, then you may well have got — well,
10 you would have got, presumably, an improved performance
11 for some of the systems. But, you know, this was seen
12 as a data-gathering exercise to inform the development
13 of, well, the test method and then the BR 135 document
14 and the classification criteria.
15 Q. Let me ask you about fire barriers.
16 We've touched on the fact that only two of the 14
17 systems tested included fire barriers.
18 A. Mm—hm.
19 Q. We saw from the bid document that one of the stated
20 objectives of this contract was to understand the
21 contribution of any firestopping present within cladding
22 systems; you remember that? Yes?
23 A. Yes, in the initial proposal, yes.
24 Q. Did it change?
25 A. It's possible that it changed during the discussions

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1 because, obviously, as we also identified this morning,
2 the scope of the systems tested was increased.
3 Q. Did it increase so as to remove the understanding of
4 contribution of firestopping?
5 A. It probably evolved such that it was seen that those
6 tested without fire barriers would give a worst—case
7 type performance, and it was probably, based on the
8 discussions that would have been had at the time,
9 decided that it would be more beneficial to test
10 a broader range of systems, rather than doing half the
11 number of systems with and without fire barriers.
12 Q. Oh, I see.
13 Did you yourself ever investigate internally within
14 the BRE why it was that, despite the fact that the bid
15 document stated in terms that one of the objectives of
16 the contract was to understand the contribution of any
17 firestopping present in the cladding system, in fact
18 only two of the 14 tests in the end had firestopping or
19 cavity barriers in them?
20 A. I don't recall at the time but, I mean, obviously to
21 deviate from the proposal would only be done with the
22 agreement of the department. So it would have changed
23 on the basis of discussion and direction from the
24 department.
25 Q. No, I understand that. But my question is: did you ever

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1 find out the reason for —
2 A. I don't recall.
3 Q. No.
4 Let's go back to the analysis report, please, at
5 {BRE00041882/3}. This is the 19 September 2002 report
6 submitted to Anthony Burd. Page 3, paragraph 7, at the
7 bottom of the page, it says:
8 "The full—scale test was the only method which
9 satisfactorily assessed the system performance,
10 including detailing such as fire barriers."
11 Now, that's one of the conclusions of the BRE from
12 this project, isn't it?
13 A. Yes.
14 Q. Do you know how the full—scale test method
15 satisfactorily assessed detailing such as fire barriers
16 when only two of the full—scale tests actually contained
17 any fire barriers?
18 A. Well, yes, as we discussed earlier, I mean, it's the
19 only methodology that you can incorporate that detail
20 into anyway. You cannot include fire barriers in any of
21 the bench scale or intermediate scale tests.
22 Q. That's true, but I don't think that quite grasps the
23 essence of my question.
24 My question is really about how the full—scale test
25 method, on the basis that it did test the efficacy of

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1 particular fire barriers, did so when only two of the
2 full—scale tests actually contained cavity barriers.
3 A. Well, obviously there was data there for those two
4 scenarios with fire barriers in them.
5 SIR MARTIN MOORE—BICK: I think Mr Millett's point is that
6 if you only do two tests with fire barriers, it's not
7 a very large body of data to determine whether the fire
8 barriers really did much good.
9 A. Yes, I accept that point in relation to this test, but
10 there was a — there was also all of the other work that
11 had been done leading up to this large—scale test.
12 MR MILLETT: Is the conclusion at 7 no more than in fact
13 what you've just told me, which is that it's a statement
14 of fact that bench and intermediate scale tests cannot,
15 by their nature, assess the performance of cavity
16 barriers in a full system because they're not full—scale
17 tests? It's saying no more than that, I think.
18 A. That could very well be the case, yes.
19 Q. Right. So they're not actually tests capable of
20 assessing the performance of cavity barriers per se?
21 A. Well, of course they do as part of a system.
22 Q. Well, that's the point.
23 A. Yes.
24 Q. If they're going to as part of a system, then don't you
25 need rather more than just two out of 14 to be able to

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1 form a view?

2 A. Well, it depends what conclusions you're then going to

3 draw, I guess, from that test, but if you want to have

4 a generic solution, then you would need a lot more

5 tests. But if you're talking about a specific type of

6 fire barrier, and I think in this one they used

7 an intumescent—type metal grid that intumesces under the

8 influence of heat, so the results for those tests would

9 only be applicable to those particular fire barriers,

10 and I don't think it's really saying very much more than

11 that.

12 Q. Well, why not run each test in each series with and then

13 without fire barriers in order to form a conclusion?

14 A. Well, yes, in an ideal world, that's what we would like

15 to do.

16 Q. Why didn't you do it?

17 A. Because you can only do what the budget will enable you

18 to do, and, you know, you're constrained by a fixed

19 allocation of money, and then it's a question of

20 detailing the experimental programme within the

21 boundaries that you have available to you financially.

22 If we were to repeat all 14 tests with and without

23 barriers, the project would have cost double the money,

24 and at the time, the department wouldn't have had the

25 budget, I'm guessing, to have done that, which is why

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1 the discussions took place with the project team and so

2 on to vary the project and the scope of it and the scope

3 of the materials, et cetera, during the course of the

4 project.

5 Q. Didn't Approved Document B at the time of this test

6 require cavity barriers in the external wall?

7 A. Yes. It still does now, I believe.

8 Q. Indeed, but at the time it did. Therefore, why were you

9 testing full—scale systems which, by the absence of

10 cavity barriers, would not have complied?

11 A. Well, my view is that this was looking at basically the

12 make—up of the external wall in a worst—case scenario,

13 and given the information that we've already discussed

14 as well, where some people were getting these details

15 wrong or not including them, which is obviously a matter

16 for enforcement, not a matter for the regulations as

17 such, then it was looking at the worst case.

18 Q. But weren't you interested in seeing how ACM with

19 a polyethylene core panel performed where cavity

20 barriers were present?

21 A. I don't recall what the discussions were around that at

22 the time.

23 Q. No, but weren't you interested in knowing —

24 A. In an ideal world, you would be interested in looking at

25 lots of different variations, but, you know, that's

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1 sometimes just not feasible.

2 Q. Does it come to this: you had 14 tests, of which only

3 two had cavity barriers, because you wanted to test

4 a wide range of products, but, in doing so, tested 12

5 out of 14 in full—scale tests that would never have

6 complied with Approved Document B because of the absence

7 of fire barriers?

8 A. Yes, but if you're setting then the criteria based on

9 those tests, you've got an in—built margin of safety, in

10 the sense that a system that does comply and does have

11 cavity barriers, you would expect to perform better.

12 Q. Ah, but unless you've done a test, Dr Smith —

13 A. But there is a body of evidence that led up to that.

14 Q. You had no empirical evidence to form any conclusion

15 that if you tested ACM with a PE core, it would perform

16 better in a system with cavity barriers than without.

17 A. Not with that specific case, but there was generic —

18 an emerging body of evidence from other systems tested

19 that that was indeed the case.

20 Q. Now, I think you have told us, and you say so in your

21 statement, paragraph 24 at page 8 {BRE00005624/8} —

22 I don't think we need to go back to it, we saw it,

23 I think, last week — that there had been a clear

24 recognition that it wasn't possible to rely on

25 small—scale fire tests producing data on individual

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1 elements as a means to try to predict and control fire

2 performance. That's in your statement.

3 My question, on the back of that, is: did you

4 consider at the time that the test programme as carried

5 out, with only two of the 14 full systems containing

6 cavity barriers, was capable of informing questions

7 regarding the influence of cavity barriers?

8 A. Well, within the context that we've just discussed.

9 Q. So yes —

10 A. Yes.

11 Q. — I think is the answer to my question.

12 A. Yes.

13 Q. And what questions about cavity barriers did this

14 testing programme in the end inform? What did it

15 answer? What did it tell you?

16 A. That basically by installing cavity barriers in

17 a correct way, then they can improve the performance.

18 Q. In two cases out of 14?

19 A. Yes.

20 Q. Let's move on to some questions about intermediate and

21 bench scale tests.

22 Did you carry out or witness any of those tests?

23 A. Not to my recollection, no.

24 Q. Let's look at this document, the analysis report,

25 please, page 11 {BRE00041882/11}, where we have the

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1 results under the heading, "BS 476 parts 6 and 7", and
2 that's divided up into "Rainscreen Panels", "Render
3 Systems" and "Composite Panels".

4 If you look at the overall heading, it says this:

5 "The results from BS 476 parts 6 and 7 are presented
6 in Table 2. The results from these tests were not as
7 expected, with only four of the eleven products
8 achieving Class 0. All the materials tested were
9 believed to be Class 0 products when purchased for this
10 project."

11 Now, we've established, because you've told us, that
12 it was the BRE who purchased the products from the
13 market, invoicing the department through AEAT
14 afterwards; yes?

15 A. Yes, we used a third-party contractor to do that on our
16 behalf. So BRE didn't go out and purchase the products
17 because, I mean, there's a danger, if you like, in doing
18 that, because people think: well, why do BRE want some
19 of our products?

20 Q. It was done through AEAT as the middleman?

21 A. No, no, no, through another third-party contractor who
22 I — you asked me who it was this morning and I couldn't
23 remember, I didn't know, but that — so it's a different
24 contractor. It's a cladding-type contractor who is
25 familiar with designing cladding systems, et cetera, and

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1 that's not AEA Technology.

2 Q. Was that Fox Designs?

3 A. It might be. I can't be sure.

4 Q. Right.

5 What was the basis, just going back to the words on
6 the page there, for BRE's belief that all of these
7 products were class 0?

8 A. It's something we would have asked them to go out and
9 do, to buy.

10 Q. Right. But it says "were believed to be Class 0".

11 A. Yes.

12 Q. Believed by the BRE?

13 A. Yes.

14 Q. On the basis of what?

15 A. In the sense that the contractor would have sought and
16 asked for class 0 products and would have been told that
17 they were class 0 products.

18 Q. Right. Do you know whether the contractor saw any
19 independent verification or certification of the class 0
20 status of those products?

21 A. I don't know.

22 Q. Right. Do you know whether the belief was based simply
23 on the say—so of the manufacturers or some other
24 objective data?

25 A. Yes, I don't know, no.

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1 Q. Was your expectation, looking at that second sentence,
2 that those products would achieve class 0 when tested
3 under BS 476—6 and 7 by the BRE?

4 A. Yes.

5 Q. If we look at table 2 on page 12 {BRE00041882/12}, the
6 next page, please, we can see the data which reflects
7 those results in the last column on the right,
8 "Class 0".

9 A. Yes.

10 Q. Then there is a series of Ns and Ys, nos and yeses;
11 do you see that?

12 A. Yes.

13 Q. Y is those which did achieve class 0 by testing, and N
14 for those which did not.

15 Now, if you look at the aluminium sheet, item 3 —

16 A. Yes.

17 Q. — you can see it gets a Y, in other words yes, class 0.

18 A. Yes.

19 Q. So that was one of those four panels that did achieve
20 class 0.

21 A. Yes.

22 Q. Now, apart from being unexpected, what did those class 0
23 test results tell you?

24 A. Well, that it appears that the market claims of some
25 manufactured products were not as they ought to be.

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1 Q. Yes.

2 Now, I'd like to understand your thought processes
3 when seeing this data.

4 Did you think, as one obvious possibility, that
5 seven out of 11 companies were misrepresenting their
6 product classifications?

7 A. Potentially, that was a possibility, yes.

8 Q. Up to seven?

9 A. Yes.

10 Q. It did occur to you, did it?

11 A. Yes.

12 Q. Really? Did it occur to you because you were cynical or
13 sceptical about the familiarity of some of these
14 manufacturers with the truth?

15 A. No, it was just the technical evidence, as it was
16 presented.

17 Q. The technical evidence as presented is that a class 0
18 product as told to your contractor, or perhaps as even
19 certified by a certifying body, was not class 0 when
20 tested, even though it was presented as class 0.

21 A. Yeah, I doubt any of these products would have been
22 certificated or claimed to have been.

23 Q. Right.

24 You said that one of the things that occurred to you
25 was because manufacturers might misstate the

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1 classification ; yes? What I'm interested in is why they
 2 would do that, to your knowledge?
 3 A. Why they would ...?
 4 Q. Were you familiar, as an experience of your own at the
 5 time, that manufacturers would play fast and loose with
 6 the truth about whether or not their product --
 7 A. No.
 8 Q. Right. But nonetheless it was something that occurred
 9 to you, as you told us?
 10 A. Yes, it was something that needed further consideration.
 11 Q. Another possibility, did this occur to you, was that
 12 there were very serious reproducibility issues with
 13 testing to BS 476--6 and 7?
 14 A. No, I don't believe that was a consideration.
 15 Q. You didn't?
 16 A. No.
 17 Q. Well, if that's not the case -- in other words, if you
 18 tested a product to class 0, it will always achieve
 19 class 0 -- what other conclusion could you have drawn at
 20 the time, other than that these manufacturers were lying
 21 to your agent?
 22 A. Well, that's what I said. It was something that needed
 23 further investigation.
 24 Q. Right.
 25 A. Or consideration, at least.

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1 Q. Yes.
 2 Were you struck by the fact that a majority of
 3 suppliers of allegedly class 0 products for your testing
 4 had misrepresented the classification in that way?
 5 A. Well, yes, in the sense that it was a surprise to us.
 6 Q. Did you think of taking that up with anybody in
 7 government? This is obviously in the report, but
 8 did you actually --
 9 A. Yes, I mean, it was a matter that was in the report and
 10 it was a matter that was raised. I mean, the kind of
 11 response to that was and has been for a long time, and
 12 has carried on in more recent times as well, that
 13 ultimately the claims that a manufacturer makes in the
 14 market are their responsibility, and, you know, they
 15 have to be able to justify those claims.
 16 Q. Did you think of raising this matter with Trading
 17 Standards?
 18 A. No, we wouldn't have done that directly. I mean, it's
 19 very possible that the government department would have
 20 done that.
 21 Q. Did you raise with Anthony Burd the possibility of his
 22 raising it with Trading Standards?
 23 A. I'm sure there was some kind of discussion around that,
 24 because I think also, at the same time, the Radar
 25 projects were going on around this sort of time as well,

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1 and I think there was also some results similar to this
 2 in the RADAR project that Warrington were undertaking.
 3 Q. That was in fact in the May of 2000. You're right about
 4 the results and we'll come back to that in due course.
 5 A. Yes.
 6 Q. Let's go to page 19 {BRE00041882/19} and look at that,
 7 please, under the heading "Class 0". It says:
 8 "The results from the BS 476 part 6 and 7 tests were
 9 expected to confirm the Class 0 performance of the
 10 products used in this project. As the results show, all
 11 the materials achieved the required performance levels
 12 in the Fire Propagation test, BS 476 part 6, but
 13 a significant number did not achieve the required
 14 Surface Spread of Flame classifications. There does not
 15 appear to be any one reason for this lack of
 16 performance."
 17 In other words, no one particular reason for the
 18 failure to satisfy BS 476--7 had been identified, I think
 19 that's what it's telling us; correct?
 20 A. Yes, yes, correct.
 21 Q. What was on the list of reasons from which no one factor
 22 could be picked out as the cause, do you know?
 23 A. No, I don't. I don't.
 24 Q. Do you know what possibilities had been thought through
 25 as to why it was that they routinely failed?

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1 A. I mean, I guess people would have considered things such
 2 as the surface coatings, the colours of the coatings,
 3 thickness of coatings and finishes.
 4 Q. Do you remember what your reaction to these results was
 5 when you first learnt of them?
 6 A. Yes, surprise.
 7 Q. Right. Do you remember whether anybody else in the BRE
 8 was surprised?
 9 A. Yes, I would imagine the project team was surprised. It
 10 would have been them that would have brought it to my
 11 attention.
 12 Q. Do you remember what Anthony Burd's reaction within the
 13 department was, or anybody else within the department?
 14 A. I don't recall, but, as I say, I do know there was
 15 an ongoing kind of discussion around this based on the
 16 earlier RADAR results as well.
 17 Q. And was Brian Martin involved in those discussions about
 18 these surprising results?
 19 A. I don't recall, but I would imagine he was, yes.
 20 Q. Do you remember sharing the idea or the notion with
 21 Brian Martin that some or all of these manufacturers had
 22 misrepresented the class 0 status of these products?
 23 A. I don't remember explicitly that.
 24 Q. Did you have any reason to consider that this situation
 25 where so many, so high a proportion, had failed class 0

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1 might be replicated across the market more generally?
 2 A. Well, that's why it was necessary for it to be given
 3 further consideration.
 4 Q. Did you actually, to the best of your recollection, tell
 5 the department in terms that your suspicions — I think
 6 this is a fair way of encompassing what you've told
 7 us — were that manufacturers were routinely misstating
 8 the class 0 status of products for which class 0 had
 9 been claimed?
 10 A. Probably in broad terms, yes. I mean, I wouldn't couch
 11 it in terms of manufacturers in general. I think you
 12 would have to caveat that with "some" manufacturers,
 13 because I'm sure equally there were manufacturers that,
 14 you know, were playing everything by the book and their
 15 products and so on were properly supported by their
 16 performance.
 17 Q. But seven out of 11 is a very substantial majority,
 18 isn't it?
 19 A. Yes, from the small sample that we looked at.
 20 Q. Indeed. But looking at the small sample of the data set
 21 nonetheless, I would suggest to you, I think, is
 22 sufficient for you to be able to draw at least the
 23 provisional conclusion that the market, if not riddled
 24 with misrepresentations about class 0, was sufficiently
 25 full of them to warrant serious concern.

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1 A. There appeared to be something that needed further
 2 consideration, yes.
 3 Q. And that, so far as you can recall, was something
 4 warranting consideration that the government knew — is
 5 this right — had to be considered?
 6 A. Yes.
 7 Q. Can I ask you about the ACM test again.
 8 If you go back to page 11 {BRE00041882/11}, just to
 9 link it up with class 0, you can see the second
 10 paragraph, under the heading "Rainscreen Panels", and it
 11 says there:
 12 "The aluminium cladding panels achieved a Class 0
 13 performance when tested to BS 476 parts 6 and 7, both
 14 their performance in the fire propagation test and the
 15 surface spread of flame test showed they fully met the
 16 requirement of this classification."
 17 Now, given the test performance of the full system
 18 using ACM as the cladding panel which others at BRE have
 19 told us were shocking, and you've seen the figures, did
 20 that result from the BS 476 test surprise you?
 21 A. I don't recall but — no, I don't recall what I thought
 22 at the time in relation to that. I mean, obviously,
 23 this is a factual run-through then test type by test
 24 type of the results that were achieved against those
 25 particular test methods.

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1 Q. But did it not strike you at the time that here you have
 2 a BS 8414 test, as it became, Fire Note 9, full system
 3 test with ACM cladding with a polyethylene core that
 4 performs in the way it did, with flames reaching above
 5 the top of the rig before six minutes on the one hand,
 6 and having to be terminated early, but on the other,
 7 those panels, when tested under BS 476—6 and 7, passed
 8 with flying colours? Putting those two together, did
 9 that juxtaposition not surprise you?
 10 A. Well, it probably did at the time but I don't recall
 11 first — hand what I thought back then.
 12 Q. Or did it simply confirm your own historic negative
 13 views about the utility and reliability of small-scale
 14 tests?
 15 A. Yes, it would certainly have — that would have been one
 16 of the issues, yes.
 17 Q. Right.
 18 Now, let's go down to page 14 {BRE00041882/14},
 19 then, in the same document, and to the final paragraph
 20 under the heading "Rainscreen Panels" there, you can see
 21 it on the screen. There you have the results obtained
 22 from the single burning item test summarised; yes?
 23 A. Yes.
 24 Q. You can see that in the final paragraph, because you
 25 have FIGRA and SMOGRA —

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1 A. Yes.
 2 Q. — and THR results.
 3 It says:
 4 "The aluminium system generated high rates of fire
 5 growth and in both cases was extinguished early due to
 6 excessive temperatures and fire growth. This is
 7 reflected in the indicative classification of D—s2, d0."
 8 A. Yes.
 9 Q. On page 19 {BRE00041882/19}, if we just go to that, the
 10 penultimate paragraph of the page, under "Rainscreen",
 11 the penultimate paragraph there says:
 12 "The aluminium sheeting system achieved the poorest
 13 classification in both tests, although it was the only
 14 system to achieve class 0 in the British Standard
 15 tests."
 16 Now, there it is.
 17 A. Yes.
 18 Q. There's the juxtaposition in clear terms.
 19 A. Yes.
 20 Q. Did that result surprise you or concern you in any way?
 21 A. Well, I think it was a clear indication of the sorts of
 22 performances or the performance that we were getting in
 23 relation to that test.
 24 Q. Do you remember whether any discussions with the
 25 department ensued as a result of that conclusion,

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1 particularly set in the context of the other parts of
 2 these conclusions I've been showing you?
 3 A. Yeah, I mean, I don't know what discussions took place
 4 with the project team, but it would have been, I'm sure,
 5 part of the discussion that then led to the drafting and
 6 was incorporated within the thinking around the criteria
 7 in BR 135.
 8 Q. In your own mind, were you clear, if not before this
 9 time, then certainly by this time as a result of these
 10 tests, that there ought to be very grave concerns about
 11 any regulatory system which continued to permit class 0
 12 external rainscreen panels to be used as a standard for
 13 fire performance on high-rise buildings?
 14 A. It was certainly pointing in that direction, yes.
 15 Q. Well, pointing in that direction; I think you'd arrived
 16 at the destination, hadn't you?
 17 A. Yes. Okay.
 18 Q. Yes? Yes.
 19 A. Yes.
 20 Q. And specifically, you knew that a panel might achieve
 21 class 0, but also only achieve class D when tested under
 22 the Euronorms?
 23 A. Yes.
 24 Q. So you knew from this — is this right — that when or
 25 if a builder in the UK opted for a class 0 rainscreen

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1 panel, let's assume it had genuinely achieved class 0,
 2 then that product might only achieve a class D under the
 3 Euronorms?
 4 A. Yes, I think that — you had — from the RADAR projects
 5 it was very clear that, because you're moving from sort
 6 of one methodology to a completely different
 7 methodology, you will get some materials, products that
 8 translate in terms of performance with the — between
 9 the national and the European classes, but then you will
 10 get outliers as well. You will get some that will do
 11 better and some that will do worse. This is clearly,
 12 yes, an indication that moving across to the European
 13 system is — well, or was more beneficial in terms of
 14 the safety levels in the main than using the national
 15 classification systems.
 16 Q. You say more beneficial in terms of safety levels. Can
 17 we just explore the way you've just put it. Two
 18 questions.
 19 First: do you accept, on this data, that a PE-cored
 20 aluminium product would not have been deemed suitable
 21 for use on any building above 18 metres if evaluated
 22 only based on the Euroclass test and diagram 40?
 23 A. Correct, yes.
 24 Q. But if evaluated based on the national classification
 25 system alone, class 0 in this case, the PE-cored

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1 aluminium product was considered suitable for use on
 2 buildings over 18 metres?
 3 A. Yes.
 4 Q. Did you therefore have cause to consider at this point
 5 whether class 0 was an appropriate and safe metric for
 6 external surfaces of high-rise buildings, particularly
 7 in light of these test results?
 8 A. Well, I don't recall exactly what the discussion would
 9 have been at that time. As I say, the main focus of
 10 this was around the development of the large-scale test
 11 method, and it was anticipated that that was going to be
 12 the way forward for buildings above 18 metres at this
 13 time.
 14 Q. Yes. We'll come in due course to looking at RADAR and
 15 the transition period.
 16 A. Yes.
 17 Q. But just focusing on class 0 for the moment, did you
 18 consider at this stage of the project, or indeed at any
 19 time afterwards in light of these results, that the
 20 national reaction to fire classification ought to be
 21 withdrawn from use in relation to the external wall of
 22 high-rise buildings?
 23 A. I mean, I think it was generally understood that they
 24 would ultimately be removed, and I think the only thing
 25 that was up for debate is what was the point at which

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1 the national classes would be removed. Obviously, that
 2 became — that was a decision that was a government
 3 decision based on other factors.
 4 Q. Did you have a discussion at this time with Anthony Burd
 5 or anybody else in the department about removing class 0
 6 in light of this test programme?
 7 A. I don't recall. I mean, certainly at this particular
 8 time, the European test standards were not embodied
 9 within the approved document anyway.
 10 Q. I think they'd just come in, in fact.
 11 A. Okay. So —
 12 Q. I mean, you may be right, but there's a 2002 amendment.
 13 Whether it was before or after September, I'm not sure
 14 I'm able, standing here, to tell you.
 15 A. Yes.
 16 Q. But it certainly postdates the discussions about the
 17 RADAR report.
 18 A. Yes. I mean, it was the RADAR reports that led to the
 19 incorporation of the European norms in the approved
 20 document.
 21 Q. Yes, and my question, coming back to it, is: in a sense
 22 leaving aside the discussions of the RADAR report and
 23 the harmonisation project, which we're going to come to,
 24 were the results of this test not the clearest flag that
 25 even though class 0 might be withdrawn at some point,

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1 now was the time to do it?

2 A. I mean, that wasn't a decision for me to be taking.

3 I mean, we were presenting the data and the results for

4 others to discuss and take forward.

5 Q. Did you expect government to act on it and accelerate

6 the time at which class 0 was withdrawn, based on these

7 results?

8 A. Well, I don't know, in terms of accelerate. I mean, we

9 understood that there was a commitment to do that. I'm

10 not sure we understood exactly what the timeline for

11 that was, so I wouldn't necessarily be looking in terms

12 of accelerating that.

13 Q. What was the commitment you've just described to remove

14 class 0 that you understood at the time?

15 A. Well, under the construction products directive, there

16 was a requirement based upon member states of the

17 European Union to adopt the European norms in preference

18 to any national classifications. Any work on national

19 classifications was halted at the point that the

20 European tests were under development, so it wasn't

21 possible to update the national standards from that

22 point on, and the reason being that, you know, they

23 would then become redundant over the — you know, when

24 the new European norms were published, and they needed

25 to then be — the national standards would have to be

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1 withdrawn.

2 Q. Over what timeframe? We'll come to see some documents

3 on this later.

4 A. Yes.

5 Q. But at this time, just getting your evidence on this,

6 September 2002, what was the commitment? What was the

7 time horizon by which class 0 would be scrapped?

8 A. Well, they weren't developed beyond — well, from about

9 19 — late 1990s.

10 Q. No, sorry —

11 A. The national standards.

12 Q. September 2002.

13 A. Yes.

14 Q. If you'd asked Anthony Burd, "When are we going to scrap

15 class 0?", what would he have told you, as you saw it at

16 the time?

17 A. Well, I think prior to the publication of the European

18 supplement, everybody expected that to happen in 2002.

19 Q. Right.

20 A. But that didn't happen in 2002, as I said earlier, for

21 other reasons.

22 Q. Now, I just want to ask you one or two questions about

23 the IAG.

24 Can we go to {BRE00042045}, please. We'll take this

25 quickly.

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1 Looking at the front cover of this document, this is

2 the generic data supporting the revision of BR 135

3 dated June 2002, which was prepared by the BRE for the

4 industry advisory group; yes?

5 A. Yes.

6 Q. And also the joint working group of BSI technical

7 committees, and you can see that. It's dated

8 26 June 2002; therefore, it's before the analysis report

9 and the closing report of the 1924 testing programme,

10 isn't it, just in chronological terms?

11 A. Probably, yes.

12 Q. Well, it is.

13 A. I accept what you say, yes.

14 Q. Because the dates are that.

15 A. Yes.

16 Q. Just pausing there, did you put this document together?

17 A. No, I wouldn't have done.

18 Q. Do you know who did?

19 A. The project team would have done it, so I guess

20 Sarah Colwell and Brian Martin predominantly.

21 Q. Was it approved by the department before it was

22 presented to the IAG?

23 A. Yes, it would have been.

24 Q. Who approved it on behalf of the department? Would that

25 have been Anthony Burd?

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1 A. Probably, yes.

2 Q. What was the role of the BSI committee and the IAG in

3 this project?

4 A. Sorry, in the ODPM project, the research project?

5 Q. Well, the revision of BR 135.

6 A. Right. So the IAG was there, I think as we've already

7 discussed, to provide input to the project, to act as

8 a steering group, to provide their real-world knowledge,

9 et cetera, and to guide the programme, and to provide

10 feedback and comments in terms of their understanding

11 and anything that wasn't clear, et cetera.

12 The joint working group, I guess this was presented

13 to them to assist them in the development of the British

14 Standard development.

15 Q. Was this document released more widely as part of the

16 consultation on the revisions of BR 135?

17 A. I don't know.

18 Q. Can we go to page 3 {BRE00042045/3}, please. We can see

19 there a list of the systems tested, ventilated cavity

20 systems and render systems; yes?

21 If we go to page 5 {BRE00042045/5}, there's a table

22 of generic test data for the ventilated cavity and

23 render systems. Do you see that?

24 A. Yes.

25 Q. And then under that table you can see the PE-cored

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1 aluminium panels, they're at item 3. You see it says
 2 "Aluminium"?
 3 A. Yes, yes.
 4 Q. And you've got the fail there.
 5 At page 8 {BRE00042045/8}, they're described as
 6 "Aluminium-based cladding panels".
 7 A. Yes.
 8 Q. You see that?
 9 A. Yes.
 10 Q. Under system 3, "Aluminium-based cladding panels".
 11 Why were they described like that, do you know?
 12 A. No, I don't.
 13 Q. On one view, that is a misleading description, isn't it,
 14 because it doesn't identify the presence of
 15 a polyethylene core?
 16 A. Yes, yes. I don't know why they weren't defined as we
 17 saw earlier.
 18 Q. Did it occur to you at the time that that description
 19 might lead a reader to conclude that the cladding
 20 described was pure aluminium, not a composite at all?
 21 A. I don't recall. I mean, I think if I had have been
 22 looking at this, then it's something I might have
 23 raised. I don't recall.
 24 Q. Right.
 25 Do you know whether any members of the IAG other

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1 than government or the BSI joint committee were actually
 2 told that the panels tested were ACM with a polyethylene
 3 core?
 4 A. Well, usually, typically in these types of projects, the
 5 IAG would have some physical meetings as well and, you
 6 know, it's usual that PowerPoint presentations and so on
 7 would be given and there would be discussion around some
 8 of these things. So I would have thought they would
 9 have known.
 10 Q. But you don't know because you weren't there?
 11 A. I don't know for sure. Of course I don't know for sure.
 12 Q. Do you know whether anybody on the IAG or the BSI
 13 committee raised any concerns in respect of the
 14 performance of the aluminium-based cladding panels —
 15 A. No.
 16 Q. — tested at full scale or intermediate or bench?
 17 A. No, I don't.
 18 Q. You don't.
 19 Can we then move to the conclusions and
 20 recommendations in the analysis report of
 21 19 September 2002. It's at {BRE00041882/24}, back to
 22 that document.
 23 If you look at that, "Conclusion and
 24 recommendations", in fact I think it is right that there
 25 are no actual recommendations in this section, are

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1 there? There are conclusions but not recommendations.
 2 A. Yeah, I mean, without reading them all in detail, but
 3 I take your — I'll take your analysis, yeah.
 4 Q. But if we go back three days to 16 September 2002, the
 5 closing report, at {BRE00041895/13}, let's look at that,
 6 this is paragraph 5 at the foot of the screen, it says
 7 this:
 8 "The aluminium sheet product satisfied Class 0
 9 requirements, but in the full — scale, intermediate scale
 10 and Single Burning Item test, proved to be one of the
 11 worst performing products. As the current guidance in
 12 Approved Document B asks for Class 0 performance in
 13 Diagram 40, these issues may require further
 14 consideration."
 15 This goes over ground we've covered before, but the
 16 fact that the aluminium sheet, as the ACM PE is again
 17 described here, satisfied the requirements of the
 18 approved document but nonetheless resulted in
 19 a catastrophic full — scale fire before six minutes may
 20 require further consideration — that's all you put, all
 21 this document said.
 22 A. Yes.
 23 Q. I mean, did you intend or did the BRE intend that this
 24 result be an urgent red flag for immediate consideration
 25 and action, or simply a mild indication that the

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1 government might like to have a think about this in its
 2 own sweet time?
 3 A. I don't recall at the time. I understand the way that
 4 you're interpreting that, but, I mean, the fact that
 5 it's there, we would expect that to act as the flag for
 6 the department to decide what they then wanted to do
 7 from thereon in.
 8 Q. Is that right?
 9 A. Yes.
 10 Q. So this oblique, rather loose recommendation, "these
 11 issues may require further consideration", you thought
 12 that was enough to spell out to the government that the
 13 use of ACM panels over 18 metres presented an immediate
 14 and present risk to life, did you?
 15 A. That they needed to consider the issues associated with
 16 all of this, yes.
 17 Q. You see, Dr Smith, what you don't do in this report is
 18 to spell out in big letters to Anthony Burd that unless
 19 the government does something now about ACM panels over
 20 18 metres, people will die. I mean, that's clear,
 21 isn't it?
 22 A. Well, it's not put in those terms. You won't find,
 23 I don't think, any BRE report that ever speaks in those
 24 terms, because our role is one to present the technical
 25 evidence and the technical facts and the data, and then

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1 to signal what we think needs to be considered. Then
 2 it's up to the department, with their statutory
 3 committees or whatever, to decide what they consider and
 4 what they want to do going forwards.
 5 Q. Isn't there an intermediate step between the data and
 6 government policy, and that is to apply a human
 7 interpretation on the data, convert it into foreseeable
 8 human consequences, and then spell those out to the
 9 government so that government can enact proper policy,
 10 rather than leaving it to government to grub about in
 11 the data?
 12 A. Well, I mean, all I can say is what I've already said,
 13 and, I mean, you won't find, I don't think, in any BRE
 14 report views expressed quite in the terms that you're
 15 expressing them now. It was always based on, you know,
 16 the technical, scientific evidence, and then issuing
 17 a flag as to the issues that they should be reflecting
 18 on. And also, I mean, this is the report that is in
 19 writing; there were meetings and discussions that would
 20 have been had as the project progressed around these
 21 factors as well. So, you know, none of this would come
 22 as a surprise to them when they first read this.
 23 SIR MARTIN MOORE-BICK: It might be suggested that what is
 24 missing, apart from what Mr Millett has suggested, is
 25 a clear assessment of the significance of the data. You

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1 give the government the data.
 2 A. Yes.
 3 SIR MARTIN MOORE-BICK: You say, "You think about this
 4 data". But you don't give them any assistance on
 5 assessing its significance. Do you think that was
 6 an omission?
 7 A. By that, do you mean in terms of the life safety,
 8 significance in terms of --
 9 SIR MARTIN MOORE-BICK: Well, I can understand why you may
 10 not have thought it was BRE's role to play up the human
 11 aspect, if you like, of this, because you're there to do
 12 a scientific job. But it might not be regarded as
 13 an impermissible step for the BRE to take to say, "The
 14 data we've got on these panels indicates that they are
 15 highly combustible and liable to create a significant
 16 fire". I'm not putting this very well, but do you see
 17 what I mean?
 18 A. Yes, yes.
 19 SIR MARTIN MOORE-BICK: In other words, to spell out what
 20 the data are telling you, albeit in scientific terms.
 21 A. Yes, I understand what you're saying, and perhaps that
 22 could have come through in the closing report. I mean,
 23 I think it's self-evident that those conclusions were
 24 drawn in the previous reports, in terms of, you know,
 25 this hasn't performed well -- well, it's performed badly

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1 in these contexts. So I think the information, for me,
 2 is all there, but maybe what this doesn't do is perhaps
 3 pull it all together in quite the way that you're
 4 suggesting.
 5 SIR MARTIN MOORE-BICK: I ask the question because you told
 6 us this morning that the results of the test indicated
 7 to you that this material should never be allowed on
 8 a high-rise building.
 9 A. Mm--hm.
 10 SIR MARTIN MOORE-BICK: I'm not sure that I would have
 11 derived that assessment from what is written in
 12 paragraph 5. Do you think you would have done?
 13 A. Well, as I say, that was said in the context of the
 14 large-scale test method in the BR 135 criteria that we
 15 were developing, that would, in our view, then slam the
 16 door shut on the use of these types of products on
 17 buildings over 18 metres.
 18 SIR MARTIN MOORE-BICK: All right, thank you.
 19 A. So, you know, it was all part of that journey, really.
 20 SIR MARTIN MOORE-BICK: All right. Thank you very much.
 21 MR MILLETT: It's right, I think, isn't it, that the reports
 22 and the data from this project have never, before this
 23 Inquiry began, been released into the public domain?
 24 A. I'm not entirely sure, to be honest. I mean, obviously
 25 you saw the document that was circulated to BSI and the

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1 IAG. I don't know if this was reduced -- any of this
 2 was presented in -- for the 2006 revision of ADB as part
 3 of the consultation then.
 4 Q. The BRE never disseminated information, for example,
 5 about the testing carried out on an aluminium composite
 6 material --
 7 A. Well, we wouldn't do that directly anyway. I mean, as
 8 part of -- if it was part of the consultation package,
 9 that would be done by the department. They generally
 10 pull together a package of technical evidence for people
 11 to review to consider the proposed amendments.
 12 Q. I think it's right though, isn't it, that the BRE didn't
 13 take it upon itself to disseminate the information in
 14 these reports?
 15 A. No, I mean, BRE, as a general rule, is not permitted to
 16 do so without the full agreement of the department
 17 anyway, because we're bound by confidentiality in all of
 18 the frameworks and the contracts that we undertake for
 19 them. So we can only publish or disseminate anything if
 20 we're permitted to do so, since privatisation.
 21 Q. Do you know whether anybody in government made
 22 a positive decision that the reports and data from this
 23 work should not be disseminated outside government and
 24 the BRE?
 25 A. I don't know.

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1 Q. Have you yourself ever considered whether these reports
2 and data should be released into the public domain
3 because of what they signify?
4 A. I don't recall at the time. As I say, I can't remember
5 if they were released as part of the consultation
6 package.
7 Q. Do you recall at any time giving any consideration
8 before the Grenfell Tower fire to revisiting this test
9 data or, alternatively, at least to the need to warn
10 industry and others about the potential dangers of using
11 aluminium composite material with a polyethylene core
12 above 18 metres?
13 A. No, I don't. I mean, as far as I think I was concerned,
14 and potentially other colleagues in BRE, once the
15 amendments to Approved Document B were made in the 2006
16 revision, it was considered that, as I said, that had
17 closed the door on these types of products being used
18 above 18 metres and, therefore, you know, that job was
19 completed —
20 Q. Did you really think that?
21 A. — as for the time being.
22 Q. Did you really think that? Because you know, of
23 course — and we'll come to it in detail no doubt later
24 on, but just picking up on that answer — of course the
25 2006 amendments continued to contain class 0 and

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1 diagram 40, didn't they, as the linear route to
2 compliance for external walls?
3 A. For above 18 metres?
4 Q. Yes.
5 A. Not — you couldn't just use class 0 in isolation, no.
6 Not my interpretation, anyway, because there are
7 restrictions placed on the insulation as well.
8 Q. Right. Okay, we'll come back to that in due course.
9 After the UAE fires in 2013 or the Dubai fires in
10 2014 or 2015, did you think again about revisiting this
11 test data?
12 A. Me, personally, no, I did not. I can remember having
13 some discussions with colleagues around the time of at
14 least one or two of the Dubai fires and just asking the
15 question, "Now, we are sure that this isn't happening in
16 the UK and can't happen in the UK, aren't we?", and, you
17 know, being satisfied that, yes, we weren't, through our
18 fire investigation project, seeing similar sorts of
19 materials on buildings, and (b) that the BS 8414 system,
20 including the BR 135 classification, was being utilised.
21 To that end, you know, we'd never been either presented
22 with, to my knowledge, prior to Grenfell, a BS 8414 test
23 that involved a polyethylene-cored ACM on a BS 8414
24 test.
25 Q. Do we take it from that answer that your view was that

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1 it wasn't necessary to look at these test reports in the
2 light of the UAE or Dubai fires and it couldn't happen
3 here simply because ACM with a polyethylene core was not
4 used in the UK built environment?
5 A. That's correct.
6 Q. Is that a fact?
7 A. That was my view.
8 Q. Right.
9 A. It's not a fact —
10 Q. It's not a fact, no.
11 A. — as we know now, but at the time, that was my view.
12 Q. Did you ever advise the government to release these
13 results?
14 A. I don't know whether — what the discussion was around
15 that, no.
16 Q. We know that the BRE never, as it were, blew the whistle
17 and put the results out themselves or issued a public
18 health warning to clients about the dangers of ACM
19 panels. Just help me, why was that?
20 A. Because that wasn't seen as our role to do that. As
21 I said earlier, we were bound by confidentiality. We
22 couldn't just decide on our own that we were going to
23 release results that others had paid for into the public
24 domain.
25 Q. Let's turn, then, to something we've been discussing

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1 before, the RADAR 2 consultation on harmonisation.
2 I would like to go back in time a little bit, if I may,
3 Dr Smith, and look at the position at the beginning of
4 2001 and your own involvement in that project.
5 First, I think it is right, isn't it, that RADAR
6 stands for "Research on Approved Document B and
7 Revision", doesn't it?
8 A. I don't know. I mean, I —
9 Q. Right. Well, I'm not going to chastise you for the
10 acronym.
11 A. Because that was a Warrington project, so ...
12 Q. Now, I'm summarising — please tell me if this is right
13 or wrong — as a result of the European construction
14 products directive, the department had needed to
15 consider amendments and updates to Approved Document B
16 in order to allow for the use of European fire test
17 methods.
18 A. That's right, yes.
19 Q. The RADAR research project was initiated, just help me,
20 to assist the department to understand how the new
21 European methods and classification system should be
22 implemented into UK regulations and guidance.
23 A. That's my understanding, yes.
24 Q. And to explore the impact of doing that; yes?
25 A. That's my understanding, yes.

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1 Q. And RADAR was research carried out by Warringtonfire,
2 commissioned by the department.
3 A. Yes, that's correct, as I understand it.
4 Q. Again, taking it shortly, do you agree that RADAR 1 was
5 about fire resistance, RADAR 2 was about reaction to
6 fire and RADAR 3 was about roofs and roofing products?
7 A. That's my understanding, yes.
8 Q. And the focus of the research was on — is this
9 right? — comparing the classifications achieved by
10 various products when tested under the Euroclass system
11 as against the classifications achieved by the same
12 products under the national class system and seeing what
13 happened.
14 A. That's my understanding, yes.
15 Q. Now, the product of Warringtonfire's RADAR 2 research on
16 reaction to fire were two reports, I think, published
17 in May 2000. I'll just show them to you. Part 1 is
18 {CLG00000950}, let's just pop that up, please. That's
19 the first page. If we go to page 2 {CLG00000950/2}, you
20 can see that this bears the title:
21 "Correlation of UK Reaction to Fire Classes for
22 Building Products with Euroclasses and Guidance on
23 Revision of Approved Document B.
24 "Part 1: UK and European Test Data and comparisons
25 between classification systems."

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1 You can see at the bottom right-hand corner it bears
2 the date of 23 May 2000.
3 If we go to {CLG00000951}, please, we can find
4 part 2, and that bears the date of 26 May 2000, as you
5 can see from the bottom right-hand corner, and its title
6 is:
7 "Proposals for the European Supplement to Approved
8 Document B."
9 Now, I've shown you both of those, just as their
10 first pages, but were you familiar with these reports
11 when they were first published?
12 A. Yes, I would have been. I would have had a copy sent to
13 me, I'm sure.
14 Q. The RADAR project was a PII, or Partners in Innovation,
15 project, wasn't it?
16 A. Yes, it says so there, yes.
17 Q. Yes, and that meant, I think, that 50% of the funding
18 for the project came from the department and 50% from
19 industry.
20 A. Yes, usually, yes.
21 Q. Do you know which industry partners contributed to the
22 funding for the RADAR 2 project?
23 A. No, I don't.
24 Q. You don't.
25 It's right also, I think, that RADAR 2 was steered

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1 by an IAG, an industry advisory group, wasn't it?
2 A. I would imagine so, yes.
3 Q. Right. I think Warringtonfire was the lead partner?
4 A. Yes, it was Warrington's project with the industry
5 partners, yes.
6 Q. Yes, and other members were representatives from within
7 industry, so manufacturing of all kinds of construction.
8 A. I would think so, yes, and it was likely to be trade
9 associations, I would imagine.
10 Q. Now, if we go to the first of these reports at
11 {CLG00000950/3}, we can see that there's a table at the
12 foot of the page under the heading "Organisation of
13 Project", and you can see that from the DETR, we've got
14 A Edwards, M Payne and D Smith. You can see who the
15 manufacturers and bodies are if you go over the page and
16 the various individuals.
17 Going back to page 3, the D Smith that I've just
18 pointed out to you there, is that you?
19 A. Yes, it would have been. I don't know why I was listed
20 as DETR, because obviously I never worked for DETR,
21 so ...
22 Q. Well, I was going to ask you that. Is it an indication
23 of your closeness of working with the DETR, at least in
24 respect of this project?
25 A. I don't know — no, I don't know why I was put down

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1 there as DETR.
2 Q. Now, your role, I think, was as a co-ordinator, because
3 it says so; you're in the "Co-ordinators" column.
4 A. Right.
5 Q. Is it right that, among a number of other contracts, in
6 2001, the BRE and the department entered into
7 a framework contract entitled "European harmonisation of
8 fire standards and representation on BSI regarding smoke
9 control"?
10 A. Probably. I would have to see it to confirm that that
11 was the title and what the scope of it was.
12 Q. Right. Well, let's —
13 A. Because on smoke control ...
14 Q. Right.
15 In 2001, I think you were also a member of BRAC,
16 weren't you?
17 A. No.
18 Q. The Building Regulations Advisory Committee part B
19 working party.
20 A. I was never a member of BRAC.
21 Q. You were never a member of BRAC.
22 Do you remember drafting or contributing to the
23 drafting of the European supplement to Approved
24 Document B which was considered by the part B working
25 party?

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1 A. I probably did assist, yes, on that.
 2 Q. Who drafted it?
 3 A. It would have been based on the outcome of the RADAR
 4 projects.
 5 Q. And who drafted it?
 6 A. I don't recall.
 7 Q. Did you advise BRAC's part B working party at meetings?
 8 A. I would have presented, potentially.
 9 Q. Right.
 10 A. And, you know, the way that that would have worked is,
 11 you know, you give a presentation as to potentially the
 12 outcomes from the RADAR project and the correlations
 13 that had been developed, and then, you know, it would be
 14 a question and answer session, and then the working
 15 party would agree or disagree and documents would be
 16 progressed accordingly.
 17 Q. Can we go to {CLG00001051}. This is a report of
 18 a meeting of the part B working party between BRAC and
 19 the Scots equivalent, BSAC, which was held on
 20 28 February 2001, as you can see.
 21 A. Yes.
 22 Q. Under the background, you can see in the second sentence
 23 it says:
 24 "The principal objective of the meeting was to
 25 consider the issues surrounding the harmonisation of

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1 fire tests across Europe and how the guidance in
 2 Approved Document B and the provisions of the Scottish
 3 Building Standards may need to be revised to reflect the
 4 proposed harmonised system. It was intended to bring
 5 together the salient issues for BRAC and BSAC, as well
 6 as for the UK Regulators, preparing for harmonisation."
 7 You can see that?
 8 A. Yes.
 9 Q. If you go to paragraph 2, under "Summary of
 10 Proceedings — Salient Issues", it says this:
 11 "Significant contributions to the meeting were made
 12 by Dr Debbie Smith of BRE(FRS) and Dr Paul Stollard of
 13 the Scottish Executive ..."
 14 A. Mm—hm.
 15 Q. Now, what was your role there in making significant
 16 contributions?
 17 A. Yeah, I don't recall first-hand, but looking at this, as
 18 I said prior to seeing this, I probably gave
 19 a PowerPoint presentation or the like based on the
 20 status at that point — I don't know if the RADAR
 21 project was finished or whether they were still
 22 ongoing — as to where they were at and what they were
 23 starting to show.
 24 Q. If you go to paragraph 5, same page, a little lower
 25 down, you can see that the report notes as follows:

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1 "5. The comparative standard [I think this is you
 2 and Dr Stollard explaining] of EN tests against the
 3 current National Standards was discussed in general and
 4 it was agreed that the harmonised fire resistance tests
 5 were generally at least as good as the current tests.
 6 "6. However, after discussing the RADAR 2 project,
 7 such a conclusion was not reached with regard to the
 8 reaction to fire tests as the test methods are
 9 significantly different. Dr Smith advised that the
 10 proposed tests are more quantitative as they rely on
 11 measuring heat release rather than measuring by eye. It
 12 was noted some products do better under this method,
 13 some do worse."
 14 A. Mm—hm.
 15 Q. Now, can we take it that what I've just shown you there
 16 from the note of this meeting is an accurate record of
 17 what you said?
 18 A. In all probability, yes.
 19 Q. You don't have a reason to dispute it —
 20 A. No.
 21 Q. — sitting there now, all these years later.
 22 A. No.
 23 Q. If we go to paragraph 7 {CLG00001051/2}, a little bit
 24 lower down, you say this:
 25 "Dr Smith gave a presentation on the draft European

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1 Supplement to Approved Document B, which resulted in
 2 detailed discussion of a number of issues — both
 3 technical and procedural. There was general support of
 4 the document, although some points were identified as
 5 being in need of further clarification."
 6 Can you remember what the issues were that were
 7 discussed in detail as a result of your presentation?
 8 A. No, I'm sorry, I don't.
 9 Q. Can you remember what the points were that were
 10 identified as being in need of clarification?
 11 A. No. I don't, no.
 12 Q. Do you remember whether any changes were made to the
 13 document as a result of the discussions that took place?
 14 A. Well, invariably they would have been, because that's
 15 the whole point of these meetings. You know, you
 16 present something, you take feedback and then the
 17 feedback has to be addressed accordingly. Or the
 18 guidance is given at the meeting that, you know, it
 19 needs to do this or it needs to say that or this needs
 20 to be clarified, and it's dealt with there and then at
 21 the meeting.
 22 Q. Right.
 23 Let's go to the RADAR 2 report itself at
 24 {CLG00000951}, which is the part 2 report. I showed you
 25 the front page, 26 May 2000.

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1 If we go in that document, please, to page 4
 2 {CLG00000951/4}, you can see there's a table, table 2,
 3 and that shows the transpositions of UK class 0 to
 4 Euroclasses. Then there's a table 3, transpositions of
 5 UK class 1 to Euroclasses, and so on, classes 2 and 3 to
 6 Euroclasses.
 7 If we look at the bottom of table 2, can you see
 8 that you have three class 0 levels which transpose to C,
 9 D and E?
 10 A. Mm—hm.
 11 Q. If you look at the product identifications on the
 12 right—hand side, you can see that there are four
 13 products which, although they test to class 0 under the
 14 national classification, fall below B, and in the case
 15 of D, there are two products. Do you see that?
 16 A. Yes, I can.
 17 Q. If you go to figure 1 on page 15 {CLG00000951/15}, you
 18 can see a key. Here is figure 1, which is attached to
 19 the back of this report, and we can start with the key.
 20 If the key could be blown up, please. It's at the
 21 bottom right of the screen. I just want to go through
 22 with you how this worked.
 23 You can see some seven product types; yes?
 24 A. Yes.
 25 Q. So wood has a little roundel, paints have a cross in

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1 a ring, plastics, mineral wool, wall coverings, cellular
 2 plastics, which has a little box and a dot in it, and
 3 board and sheet. Do you see that?
 4 A. Yes.
 5 Q. Who devised that set of categories, do you know?
 6 A. No. It would have been Warrington, I'm sure.
 7 Q. Right. Do you know into which category aluminium
 8 composite panels sat?
 9 A. No, I don't.
 10 Q. Now, we know from elsewhere in this report that there
 11 were 64 products chosen and tested for the purposes of
 12 this exercise, weren't there?
 13 A. I don't know how many were, but yes.
 14 Q. Take it from me.
 15 A. Yes, yes.
 16 Q. Do you know whether any ACM panels were selected?
 17 A. No, I don't, not without reviewing all of this.
 18 Q. And the same question, composite: do you know whether
 19 any composite panels were selected?
 20 A. No, I don't.
 21 Q. Do you remember whether anybody turned their minds to
 22 ACM or any other composite panel forming the rainscreen
 23 product at the time of this exercise?
 24 A. No, I don't.
 25 Q. Do you consider or did you consider at the time,

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1 perhaps, that the data in this table was representative
 2 of the range of products actually available on the
 3 market at this time?
 4 A. I don't recall. I mean, my role in this was very much
 5 arm's length. Obviously, you know, Warrington were
 6 carrying out the research under contract to the
 7 department, so I would have just been the recipient,
 8 really, of information. I wouldn't have had
 9 a particular knowledge, inside knowledge, of what they
 10 were doing.
 11 Q. If we pan back out so that we can see how this table
 12 worked. I just want to see if I can follow it through
 13 with you. We'll come back to it in due course, but does
 14 it work like this: that you take class 0 at the bottom,
 15 on the bottom axis, and you trace it through on a
 16 product—by—product basis and you see which Euronorm you
 17 meet?
 18 A. Yes, that seems to be the case.
 19 Q. And you can tell which products they are by reference to
 20 the key; yes?
 21 A. Yes.
 22 Q. So looking at class 0, you can find which class 0
 23 products are A1; there's one of them, which is mineral
 24 wool.
 25 A. Yes, yes.

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1 Q. That's the X. If you go up, I think there are nine
 2 which are A2.
 3 A. Yes.
 4 Q. And you can see there's a combination of mineral wool,
 5 paint, et cetera.
 6 A. Yes.
 7 Q. Do you see that?
 8 A. Yes, I do.
 9 Q. Then B has a larger range of products, and then above
 10 that C, D and E.
 11 A. Yes.
 12 Q. And you can tell which products meet which.
 13 A. Yes.
 14 Q. Just looking at that again, you can see the four
 15 products which meet C, D and E —
 16 A. Yes.
 17 Q. — but which are also class 0 —
 18 A. Yes.
 19 Q. — of which two are boxes with a dot, cellular plastics;
 20 yes?
 21 A. Yes.
 22 Q. One is wood, which is E, and one which is a box with an
 23 X in it —
 24 A. Yes.
 25 Q. — which is a wall covering.

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1 A. Yes.
 2 MR MILLETT: So that's how it works, good.
 3 Perhaps we should break at this point. I'm going to
 4 go on to some detail here, but, Mr Chairman, it's
 5 probably a good time to break.
 6 SIR MARTIN MOORE-BICK: Is that a convenient moment?
 7 MR MILLETT: I think so.
 8 SIR MARTIN MOORE-BICK: Right. I think we had better have
 9 a break before we get too deeply enmeshed in all this.
 10 We'll stop now, then. We'll resume at 3.35.
 11 THE WITNESS: Okay.
 12 SIR MARTIN MOORE-BICK: Same as before: please don't talk to
 13 anyone about your evidence while you're out of the room.
 14 THE WITNESS: No, okay. Thank you.
 15 SIR MARTIN MOORE-BICK: All right? Thank you very much.
 16 (Pause)
 17 Thank you very much. 3.35, please.
 18 (3.19 pm)
 19 (A short break)
 20 (3.36 pm)
 21 SIR MARTIN MOORE-BICK: All right, Dr Smith?
 22 THE WITNESS: Yes, thank you.
 23 SIR MARTIN MOORE-BICK: Good, thank you.
 24 Yes, Mr Millett.
 25 MR MILLETT: Yes, thank you, Mr Chairman.

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1 Dr Smith, can we now please go to {CLG00007308}.
 2 We'll flip, I think, back and forth from the RADAR
 3 report to this document.
 4 Now, this is a minute of a meeting of the part B
 5 working party held on 10 May 2001 at which you were
 6 present.
 7 A. Yes.
 8 Q. You can see your name and Anthony Burd's name there as
 9 one of those present.
 10 A. Yes.
 11 Q. If you look down at paragraph 1.3, you can see it says:
 12 "Dr Debbie Smith from BRE/FRS is presently serving
 13 the Working Party and brings her expertise on fire
 14 testing and European harmonisation to the group."
 15 Is that a fair description of your role in this
 16 meeting?
 17 A. Yes. Yes, so I wasn't a permanent member of the working
 18 party, I was just called in to provide input as needed.
 19 Q. And you had expertise on fire testing and European
 20 harmonisation?
 21 A. Yes.
 22 Q. Let's go to page 7 {CLG00007308/7}, and you can see
 23 a heading on that page, "RADAR 2 – Reaction to Fire".
 24 Below it there is a paragraph 5.7.
 25 Starting with the second sentence in that paragraph,

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1 it says this:
 2 "Dr Smith explained that one problem was that there
 3 was an uneven distribution of products submitted for
 4 testing (since PII is 50% industry led, industry sent in
 5 the products that it wanted to send in. There is
 6 a natural reluctance by industry to put in poor
 7 performing products)."
 8 In simple terms, does that mean that the data set in
 9 table 2 of the RADAR report which we've just been
 10 looking at is unrepresentative of the market or is
 11 skewed in some way?
 12 A. Potentially, that's — well, that's potentially what
 13 that's saying. I mean, obviously, my report back on
 14 this would have been based on the information that had
 15 been imparted by Warrington in their running of the
 16 project, so I can only, you know, go by what this says,
 17 yes.
 18 Q. Yes. Did you factor in that potential for bias into
 19 your own work?
 20 A. Well, insofar as we had a data set and whatever the data
 21 set was. I mean, I would have to go back and look to
 22 see where the concerns were around that being — you
 23 know, the potential for that causing bias.
 24 Q. Well, did you factor that potential for bias into your
 25 own work and your own interpretation?

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1 A. I mean, I'm sure there would have been some
 2 consideration of it and potentially some discussion of
 3 that with Warrington as to — to understand the
 4 background to that.
 5 Q. But you didn't have that —
 6 A. It's difficult to recollect that now, yes.
 7 Q. Does it follow from your identification here of that
 8 potential for bias that although table 2 records the
 9 majority of class 0 products tested as having achieved
 10 class B, in reality there might be many products not
 11 submitted for testing but nevertheless available on the
 12 market in the United Kingdom, perhaps in common use,
 13 that wouldn't or might not have been able to achieve
 14 a rating of class B?
 15 A. I think that's probably unlikely in actual fact because
 16 I think a lot of the industry were surprised to some
 17 extent — they didn't have a huge amount of experience
 18 with the European norms at this particular time that the
 19 RADAR project was going on, so the extent to which they
 20 could have interfered, in effect, with the distribution
 21 of products they submitted was to some degree limited
 22 anyway.
 23 I mean, in the next paragraph there's reference to
 24 the aluminium foil-faced insulations, and I think my
 25 recollection of that is that came as quite a surprise to

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1 that sector of the industry, that they performed
 2 significantly worse in the EN test standards than they
 3 did in the BS.
 4 Q. But you're making a criticism here, I think it can be
 5 read. What would you have liked to have seen, as
 6 a scientist, which would have provided an even
 7 distribution of products? What other products would you
 8 have liked to have seen?
 9 A. I can't answer that right now. I don't remember the
 10 details, if you like, of all of the 60 products that
 11 were tested. I mean, you would need to go back and look
 12 at that. I'd have to try and refresh my memory somehow
 13 to remember all of this.
 14 Q. Can you go back, please, to the RADAR report,
 15 {CLG00000951/4}, table 2. Just look with me at the
 16 results.
 17 Table 2 — we looked at this before — you can see
 18 the class 0 but also C, D and E results there for those
 19 four products.
 20 A. Yes, yes.
 21 Q. Looking at those four products, can you tell us, what
 22 work had been done to work out how commonly used the
 23 class 0 products at the bottom of this table achieving
 24 those C, D and E results were in the UK?
 25 A. I don't know.

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1 Q. Do you know whether any work had been done to work out
 2 how commonly used those products were?
 3 A. No, I don't.
 4 Q. So for all you knew, product ref 1/03, which achieved
 5 an E, could have been a market leader above 18 metres?
 6 A. I don't know.
 7 Q. No, but that's the point. I'm asking you why you don't
 8 know. My question is: did you ever ask yourself that
 9 question, "I wonder how commonly used these three or
 10 four types of product or four products are in the
 11 United Kingdom"?
 12 A. I don't recollect that. As I say, the project was very
 13 closely run by Warrington in conjunction and discussion
 14 with the industry and the trade associations that
 15 provided the materials, and I think there was probably
 16 a general expectation that the trade associations would
 17 do a certain amount of that normalisation to ensure that
 18 they had a representative selection of the products that
 19 they were representing. But, yeah, I can't answer that.
 20 I can't remember the details of the discussions that
 21 took place around this that I was party to.
 22 Q. What were these products, do you know?
 23 A. No, I don't, without, you know — sat here now,
 24 I couldn't help you with that.
 25 Q. Did you, in your work advising the working party, ever

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1 question the methodology of using this bell—curve type
 2 of approach to transposition, without knowing about
 3 frequency of use?
 4 A. No, I don't think we did quite in the way that you're
 5 suggesting. I mean, the main goal of this was,
 6 obviously, the removal of barriers to trade. It was
 7 intended to — well, it wasn't intended; it was a legal
 8 requirement that any barriers to trade were removed and
 9 that the European classes were adopted, and, you know,
 10 it wasn't — the same kind of treatment had to be
 11 applied across the data sets that were provided.
 12 Q. I think the answer to my question is no, you didn't
 13 question that methodology.
 14 Can I ask, can you tell us why that hadn't occurred
 15 to you?
 16 A. I don't recall the discussions that we had had around
 17 all of this at the time, but, yes, it would have been —
 18 we would have discussed the best approach and how to
 19 best go about this.
 20 Q. Did anybody, to your knowledge, whether in May 2000
 21 or May 2001, the RADAR reports and then this meeting,
 22 consider whether the data set used to transpose national
 23 classes to Euroclasses was fairly representative of what
 24 was on the market in the United Kingdom at the time?
 25 A. I'm sure there would have been discussion of that with

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1 Warrington and their project team.
 2 Q. Do you know what consideration was given to the
 3 possibility that this was an unrepresentative test by
 4 the IAG or the working party or by the department?
 5 A. I don't know what — no, I don't know what discussions
 6 took place outside of that, of course.
 7 Q. Now, at the time that you and the part B working party
 8 were considering the RADAR 2 reports in May 2001,
 9 I think it's right, isn't it, that the guidance in
 10 Approved Document B contained only one suggested
 11 restriction for the use of cladding panels on the
 12 external face of buildings above 18 metres, and that was
 13 that such panels should meet the provisions of
 14 diagram 40 and therefore national class 0?
 15 A. Yes, I think that's right.
 16 Q. Yes.
 17 In 2001, as we've already seen, I think you were by
 18 now aware that the fire at Knowsley Heights in 1991 had
 19 spread up the entire external face of the building,
 20 despite the fact that the cladding panels used had
 21 achieved class 0?
 22 A. Yes. Yes.
 23 Q. And aware of Dr Connolly's testing work in 1994 and his
 24 conclusions that class 0 panels could permit extensive
 25 and potentially unlimited vertical external fire spread?

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1 A. Yes.
 2 Q. And also, as we've covered I think repeatedly now, the
 3 fact that class 0 as a measurement of reaction to fire
 4 couldn't, or at least couldn't alone, give an accurate
 5 indication of the true fire hazard of a cladding system?
 6 A. Yes, that you needed the large-scale methodology, yes.
 7 Q. And also aware in 2001 of the select committee's
 8 recommendation that the class 0 requirement and the
 9 approved documents in relation to external surfaces of
 10 high-rise buildings should be substituted and replaced
 11 by a full-scale test of external cladding systems and
 12 what became BS 8414?
 13 A. Yes.
 14 Q. And by now I think you were aware, weren't you, that
 15 that recommendation had not been followed by government?
 16 A. BS 8414 wasn't published until 2002.
 17 Q. That's correct.
 18 A. So it wasn't available at this point.
 19 Q. But aware of the recommendation that that test,
 20 Fire Note 9, which then became BS 8414, should be
 21 substituted in place of class 0?
 22 A. That was the recommendation from the select committee,
 23 yes.
 24 Q. Yes, and you knew by this time, May 2001, that that
 25 recommendation had not been followed by the department?

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1 A. Well, yes, insofar as the approved document said what
 2 the approved document said.
 3 Q. Yes. So that's the background, in essence, and you knew
 4 all those things.
 5 In the light of that, let's just move on through the
 6 document.
 7 Can we go to page 5 of the RADAR report
 8 {CLG00000951/5}. That notes at the end of the first
 9 paragraph under 3, "Transposition Options", the
 10 following:
 11 "For other products, their position in the
 12 classification matrix is dependent upon a number of
 13 factors, which may need to be examined on an individual
 14 product basis; these factors include:
 15 "(a) the fundamental difference in UK and EC testing
 16 systems, especially the use of overall flame spread for
 17 UK classification compared to rate of heat release
 18 during the early stages of flame attack in the SBI test
 19 for Euroclassification."
 20 Is that recording something you said at the meeting,
 21 do you think?
 22 A. I don't know where that came from. No, I can't answer
 23 that.
 24 Q. If we look at the last paragraph on the page, it says
 25 this in the second line, and it's a question:

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1 "Is there any correlation between the i1 index in
 2 BS 476:Part 6 and FIGRA in the SBI test?"
 3 Now, it's not clear whether that question is
 4 actually answered in this document. Do you know whether
 5 that question was ever answered in the course of this
 6 working party's work?
 7 A. Yeah, I don't think there was a direct correlation
 8 between part 6 and FIGRA.
 9 Q. If we go to table 7 on page 7 {CLG00000951/7}, just help
 10 me with this. Table 7 there is the "Heat Release
 11 Contributions of UK Class 1 Products", and you can see
 12 in the column, you've got "UK Class 1 Product",
 13 "EC Class", which has four Bs and then five Cs below the
 14 horizontal line, then you've got "BS 476:Part 6", i1 and
 15 I, those are the indices there, and then the FIGRA heat
 16 release rates; yes?
 17 It's right, isn't it, I think, that i1 and FIGRA are
 18 measuring different things?
 19 A. Yes, absolutely.
 20 Q. And i1 is an average of three sub-indices, measures of
 21 fire propagation, isn't it?
 22 A. Yes.
 23 Q. Therefore, it's only part of one of the two tests for
 24 class 0; yes?
 25 A. Yes.

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1 Q. Whereas FIGRA is a fire index growth rate measured in
 2 watts per second, isn't it?
 3 A. Correct.
 4 Q. And again, that's only one element of the SBI test
 5 which, itself, is only one element of the
 6 Euroclassification, isn't it?
 7 A. Correct.
 8 Q. So the fact that the correlation was not 100% in any
 9 event was only one part of each of the tests, wasn't it?
 10 A. Yes, that's correct.
 11 Q. Yes. So the degree of overlap is small. I don't want
 12 to use a word more extravagant than that, but it's
 13 pretty limited.
 14 A. What, in terms of the correlation between the two?
 15 Q. Yes.
 16 A. Yes, I would agree.
 17 Q. I think you also agree that the test methods and set-ups
 18 were completely different as between these two tests.
 19 A. Absolutely.
 20 Q. For example, do you agree with this: that 476-6 was set
 21 up so that the core of a composite panel never sees the
 22 heat source?
 23 A. Unless you burn through the outer layer, the outer
 24 surface.
 25 Q. Absolutely.

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1 So is this right: do you accept that any correlation
 2 made no allowance for the differences in size of sample,
 3 the position and direction of the heat or flame source,
 4 or the way in which the sample was held in place, or any
 5 detailing or returns?
 6 A. Well, they were completely different.
 7 Q. Completely different?
 8 A. You know, the extent in the single burning item test,
 9 for example, you have to include joints and
 10 a representative fixing method, which it's not possible
 11 to do that in the part 6 and the part 7 tests. So, you
 12 know, it's comparing an apple with an orange. They're
 13 both items of fruit, but they are different.
 14 Q. Yes.
 15 Against that background and, indeed, in the light of
 16 that analogy, did your analysis of the results in
 17 table 2 of the RADAR 2 report which we've seen with the
 18 Euroclasses ranging between A1 and E, with class 0
 19 remaining, cause you any concerns in relation to the
 20 class 0 classification as a measurement of fire reaction
 21 on the external surfaces of high-rise buildings?
 22 A. So what we attempted to do was increase the performance
 23 requirement, if you like. So here, I mean, you'll see
 24 that the class 1 products and some of the class 0
 25 products have achieved Euroclass C; we did not include

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1 Euroclass C in the same safety level provision, which
 2 was one of the proposals from the RADAR 2 project.
 3 Q. Yes. We will, I think, come back to the class C
 4 question in a moment. But were you not concerned by the
 5 complete difference between the two tests and the very
 6 small degree of overlap in correlation terms between
 7 them about the adequacy or safety of the transposition
 8 process?
 9 A. Well, I mean, the transposition process was one that was
 10 required in law. It had to be done. There was no
 11 option because that had been signed up to by the various
 12 governments in terms of the European trade discussions
 13 around the construction products directive, and what the
 14 UK set out to do was to do this in a responsible manner
 15 by testing a range of different products and, you know,
 16 trying to do that, as I say, as safely as possible, by
 17 ensuring that the European equivalents were giving at
 18 least an equal or better reaction to fire performance,
 19 or fire resistance performance indeed. And I have to
 20 say, I mean, the UK went way beyond what any other
 21 European country did in that respect.
 22 Q. Maybe it did, maybe it didn't. But did you not think
 23 that, given what you knew and given the limits of the
 24 data set, 64 products, the transposition was likely to
 25 be something of a blunt instrument, given the complete

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1 differences between the two test regimes?
 2 A. Well, I don't know how else this could have been done.
 3 Q. Well, let me suggest that the only way of achieving true
 4 and safe transposition, in other words knowing whether
 5 a class 0 product achieved class B, was to subject every
 6 product to both tests.
 7 A. But that's not a realistic proposition, I would suggest.
 8 I mean, it's not for me to say, but obviously to explore
 9 with the department, you know, somebody has to carry out
 10 that work and has to fund that work, and, you know,
 11 that's an enormous task.
 12 Q. Given that, in an admittedly small data set, two out of
 13 the seven class 0 products did not achieve class B,
 14 that's not a negligible number, is it?
 15 A. Sorry, I'm not following your point there.
 16 Q. Well, you have a small data set, 64 products tested.
 17 A. Yes.
 18 Q. And you have seven class 0 products that don't achieve
 19 class B — sorry, two out of the seven don't achieve
 20 class B.
 21 A. Right, so they achieved class C, presumably.
 22 Q. That percentage was not negligible, was it? It was
 23 something like 28%. That's not a negligible proportion
 24 of mismatches.
 25 A. And?

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1 Q. My point is this, or my question is this: you knew there
 2 was a real risk that a product could achieve class 0 but
 3 not achieve class B if tested.
 4 A. There were some outliers, but there were a large group
 5 where they either achieved better performance or they
 6 did achieve class B.
 7 Q. And how was the risk presented by those outliers
 8 assessed?
 9 A. It was flagged. It was clear that there were outliers.
 10 You know, it was reported in the RADAR results to the
 11 department.
 12 Q. Was any error factor built into the transposition
 13 process to cater for the 28% of outliers? You call them
 14 outliers, but, I mean, two out of seven.
 15 A. Yeah, but, I mean, they were when you look at the whole
 16 grouping for class 0. Insofar as — I mean, we couldn't
 17 alter the classification limits. There's no scope to
 18 vary those. You know, you basically had to come up with
 19 some kind of correlation, and I, sat here now, don't
 20 know how else you could have done that, because —
 21 SIR MARTIN MOORE-BICK: Did you ever — I'm so sorry.
 22 A. Sorry, go on.
 23 SIR MARTIN MOORE-BICK: You hadn't finished.
 24 A. Yeah, I was just going to say, given that the two
 25 regimes are completely different, you know, you're never

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1 going to get 100% correlation. You're just not.
 2 SIR MARTIN MOORE—BICK: You're probably not the person to
 3 ask this question anyway, but there was presumably
 4 a transition period, wasn't there?
 5 A. Yes, there was. I can't remember — it was probably
 6 about two years, something like that.
 7 SIR MARTIN MOORE—BICK: So you could have decided at the
 8 beginning of the transition period just to adopt the
 9 European classification system and give industry
 10 two years to get their products tested?
 11 A. Yes, I guess we could, but you would have to check
 12 exactly what the transition period was.
 13 SIR MARTIN MOORE—BICK: Did that ever come up in discussions
 14 that you are aware of?
 15 A. I think, yes, it did come up, and I think it was also
 16 complicated by the fact that each of the harmonised
 17 product standards had their own transition periods as
 18 well. So where you had, you know, product families,
 19 they had to follow their own transition periods, which
 20 could be up to, I think, 36 months. So every product
 21 category was following a different timeline. Their
 22 start point was different.
 23 SIR MARTIN MOORE—BICK: All right, thank you.
 24 A. So I think, you know, it's an immensely implicated
 25 landscape, really, around all of that.

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1 SIR MARTIN MOORE—BICK: Yes.
 2 MR MILLETT: We're going to come to the transition periods
 3 shortly, I think.
 4 Can we go back to the RADAR 2 report at
 5 {CLG00000951/6}, please, table 6, top of the page,
 6 "Possible Option for Transposition of Classes for
 7 Reaction—to—Fire Performance". You can see there's the
 8 basic table there, with class 0 showing "B (or better)",
 9 and there are three ticks and there's some handwriting
 10 there.
 11 Do you know whose handwriting that is?
 12 A. No, I don't.
 13 Q. It's not yours, is it?
 14 A. No, it isn't.
 15 Q. So is it right that, despite the data in table 2 that
 16 we've seen with the four products achieving class 0 but
 17 only achieving classes C, D and E, and in two cases D,
 18 the proposal here was to equate class 0 with
 19 Euroclass B?
 20 A. Yes, that appears to be the case.
 21 Q. So you call them outliers; how were those four products
 22 treated? Were they ignored, or was an error factor
 23 built into the work in order to cater for their
 24 presence?
 25 A. Well, it wasn't possible to build in an error factor

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1 because we couldn't alter the classification limit. You
 2 got the class that you got when you tested according to
 3 the ENs.
 4 Q. Now, you told us that, to your knowledge, there was no
 5 investigation of the frequency of use of those four
 6 products which had not achieved class B.
 7 A. I don't know. No, I don't know because I don't know
 8 what they were. So there may have been with Warrington,
 9 but I don't recall that.
 10 Q. Do you know from your own knowledge how those four
 11 products were left? How would they be catered for in
 12 this harmonisation programme? Would they just be
 13 ignored?
 14 A. Yeah, I don't know.
 15 Q. You don't know.
 16 If we go to page 8 {CLG00000951/8}, please, at the
 17 top of the page at (c) you see this. Under (c) it says:
 18 "Any reference to Class 0 being equivalent to
 19 Euroclass A2 would severely restrict the market choice
 20 in terms of materials for specifiers and clients. This
 21 applies to virtually all organic containing materials.
 22 In Germany and France the authorities have a single
 23 classification, i.e. B1 or M1. Thus Euroclass B could
 24 be a cross border compromise which is supported by the
 25 high product density obtained at the Class 0 [to]

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1 Euroclass B transposition point."
 2 Now, the high product density which is referred to
 3 there, is that a reference to the cluster of products
 4 that we saw in figure 1 with the table?
 5 A. I would imagine it is.
 6 Q. Right.
 7 Now, when it says here, "Any reference to Class 0
 8 being equivalent to Euroclass A2 would severely restrict
 9 the market choice", was there a view that only very few
 10 products achieving class 0 would be capable of achieving
 11 Euroclass A2?
 12 A. I don't know exactly what the motivation for that
 13 comment was, but that is one possible reason for saying
 14 that, yes.
 15 Q. And causing a severe restriction of choice at the end of
 16 any period of co-existence of two classification
 17 methods, was that what was thought might happen if
 18 class 0 was required to achieve Euroclass A2?
 19 A. That's what that suggests, yes.
 20 Q. With a potential disruption of the market?
 21 A. Yes.
 22 Q. Does this mean that any reference to class 0 being
 23 equivalent to or required to be class A2 would have been
 24 likely to have met with resistance from industry?
 25 A. Yes, I believe that is what that would have done.

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1 Q. And if pushed through, caused loss to the UK
2 construction industry?
3 A. Potentially, yes.
4 Q. But would it also not mean that if class 0 was made to
5 be equivalent to class A2, that would mean that, at the
6 end of any period of transition, buildings over
7 18 metres would be clad in materials that performed
8 better in a fire?
9 A. Yes.
10 Q. Quite apart from the potential disruption to industry,
11 can you tell us, what were the views of others, in
12 particular the department, Anthony Burd in particular,
13 about safety?
14 A. I don't know. I mean, you would have to ask him.
15 Q. From your perspective, doing the best you can to recall,
16 was the balancing exercise being conducted by
17 government, so far as you could see it being conducted,
18 between, on the one hand, the need to avoid the risk of
19 market distortion and, on the other, the need to ensure
20 that fire safety standards were maintained?
21 A. I think that's fair, that there was a — yes, there was
22 a compromise.
23 Q. There was a compromise? Was that discussed during any
24 of the meetings of this working party that you attended?
25 A. I don't recall.

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1 Q. Do you know how government went about achieving that
2 compromise or balancing public safety as against
3 industry choice?
4 A. No, I don't.
5 Q. If we go back to the meeting note, please, of
6 10 May 2001 at {CLG00007308}. Let's go back to the
7 first page and look at paragraph 1.3. We looked at this
8 before. You told us that you were the expert there on
9 fire testing and European harmonisation.
10 What, at the time, was your expertise in respect of
11 European harmonisation?
12 A. So I think I had been at that point in attendance at
13 some of the European discussions of the official
14 laboratories group, as it was called, which was working
15 in the years up to 2000—and — around 2000, 2001, on the
16 development of the single burning item test and the
17 classification limits associated with those tests, and
18 that was all directed by the European standing committee
19 on construction, who then had their own sub-group, which
20 was the fire regulators group. So they, in effect,
21 controlled and directed the work of the official
22 laboratories group in developing the new — it was
23 mainly the single burning item test, because the other
24 like reaction to fire tests were already published as
25 ISO standards. So they were picked up and adopted and

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1 then re—published as European norms as well.
2 Q. If we go to page 2 of this document {CLG00007308/2},
3 please, next, and paragraph 3.3, we can see that
4 Anthony Burd outlined the main aim of the CPD, he says,
5 which was:
6 " ... to break down technical barriers to trade
7 between Member States of the EU. It is not the purpose
8 of the Directive to harmonise Building Regulations."
9 Then he goes on to say in the fourth line there:
10 "What the CPD will do is harmonise methods of fire
11 testing, i.e. reaction to fire and fire resistance. The
12 CPD will have a huge impact; it will affect how products
13 are tested, labelled and moved around Europe, and
14 manufacturers are beginning to realise this."
15 Would you agree that the extent of the impact on
16 manufacturers in practical terms would depend to a large
17 extent on decisions made by the department, in
18 particular about transposition and equivalence between
19 the two systems?
20 A. Yes, and, I mean, I think what he's referring to here is
21 that by following the new testing regime, reaction to
22 fire and fire resistance, those products that have been
23 tested and classified according to the ENs would then be
24 able to move freely throughout Europe. They would not
25 then have to test in each country that they were sold

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1 into. So I think that's really what he's saying there
2 in that last sentence.
3 Q. That's a positive thing, but was there also not
4 a negative thing, that manufacturers are beginning to
5 realise that their products needed to be tested under
6 the — or at least tested as an equivalent under the
7 CPD, otherwise they couldn't move their products —
8 A. That's absolutely right, yes. They would have to have
9 the new European norms and the classification to benefit
10 from that, yes.
11 Q. And this would depend on decisions made by the
12 department about transposition, equivalence and the
13 transition period, presumably?
14 A. Well, the department had to do it.
15 Q. Did you advise on the transition period?
16 A. No, no, because that was all set out in the European
17 legislation, as I understood it.
18 Q. Let's scroll down in the minutes, then, to page 7
19 {CLG00007308/7} and look at paragraph 5.8. You are
20 recorded there as saying this:
21 "Debbie Smith went on to point out that a direct
22 equivalence between UK classes and Euroclasses was not
23 possible. Problems arise as RADAR 2 is based on a small
24 data set and certain products, such as aluminium foil
25 faced insulation products, are problematic. Concern was

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1 also expressed that that in the RADAR 2 proposal the UK
 2 Class 2 had been equated with Euroclass C, together with
 3 UK Class 1. This could be seen as lowering standards.
 4 Dr Smith reassured the Members that in the draft
 5 European Supplement they had not done this (UK Class 2
 6 is equated more readily to Euroclass D). Members agreed
 7 that we must not be seen to be lowering standards.”
 8 Do you remember, what was the basis for your view
 9 that direct equivalence between the two systems of
 10 classification was not possible?
 11 A. It was based on the fact that the test methodologies are
 12 completely different.
 13 Q. Yes, as we've discussed.
 14 A. Yes.
 15 Q. And what was meant by "direct equivalence"? As opposed
 16 to what?
 17 A. That they're not measuring the same properties.
 18 Q. What sort of equivalence would, in your view at the
 19 time, have been possible?
 20 A. If you'd got two test methodologies that were both based
 21 on heat release rate, for example, then you might have
 22 been able to have demonstrated an equivalence, but they
 23 weren't.
 24 Q. By whom was it agreed at the meeting, as is said, that
 25 we must not be seen to be lowering standards?

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1 A. I don't recall.
 2 Q. Was any consideration actually given to, whatever the
 3 importance of perception might have been, standards were
 4 actually being lowered by the method of transposition
 5 you were considering?
 6 A. I don't know. I don't recall that.
 7 Q. Did anybody —
 8 A. I mean, if anybody had objected, I think it would have
 9 been recorded, probably, so this suggests that nobody
 10 raised any concerns.
 11 Q. Now, do you remember that your own recommendation was
 12 that national class 0 should be scrapped and replaced
 13 with Euroclass C? Do you remember that?
 14 A. B. With Euroclass B.
 15 Q. Well, let's see how we go on this.
 16 Can we go to page 9, please, of this document
 17 {CLG00007308/9} and look at paragraph 6.8.
 18 At 6.8, it says:
 19 "Requirement B4 — External Fire Spread, is to remain
 20 unchanged. Dr Smith explained that the current
 21 Diagram 40 in ADB(2000), on the restricted use of
 22 materials based on BS 476 Part 6 performance, can no
 23 longer be used and we must agree what to put in its
 24 place. Dr Smith suggested replacing the performance
 25 requirement 'index (I) not more than 20' with 'Class C'.

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1 On roofs no guidance is yet possible ...”
 2 Then in the last line:
 3 "Therefore, for the time being, the current national
 4 test methods and classification systems are to prevail.”
 5 Were you proposing that class 0 be replaced by
 6 class C in diagram 40?
 7 A. I don't understand the context of this, reading this
 8 now. I don't know why it would be said it can no longer
 9 be used in 2000.
 10 I'm sorry, I don't recall the context of this. This
 11 doesn't make much sense, reading this now.
 12 Q. Well, I was wondering. I was wondering whether you
 13 could help with it.
 14 Now, let me ask you this: was this possibly
 15 a reference to the part of the building in diagram 40
 16 that dealt with the exterior below 18 metres?
 17 A. I mean, it may have been, but, as I say, I don't know
 18 why we would be talking about BS 476 can no longer be
 19 used.
 20 Q. It certainly looks from this that you were recommending
 21 that class 0 be scrapped, because class 0 depends on
 22 passing part 6 as well as part 7.
 23 A. Yes. I mean, I wouldn't like to read too much into this
 24 because, as I say, I can't understand the context of
 25 this as I read it now.

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1 Q. Let me see if I can help, because I don't want there to
 2 be confusion about this. I think you may need to see
 3 the then extant diagram 40. This is, of course,
 4 May 2001.
 5 If we go, please, to {CLG10000012}. That's Approved
 6 Document B, 2000 edition. If we go to page 90
 7 {CLG10000012/90}, you can see that there is diagram 40.
 8 I'm going to assume, Dr Smith, that this was
 9 diagram 40 under discussion in May 2001 at this meeting.
 10 A. Yes, I guess it would have been, yes.
 11 Q. Now, we can see class 0 there for the dark shaded part
 12 of the building.
 13 A. Yes.
 14 Q. But then we see under the medium—shaded building in the
 15 box on the right—hand side, "Index (I) not more than
 16 20". That relates to the part of the building under
 17 18 metres, doesn't it?
 18 A. Yes, it does.
 19 Q. Can you help us, therefore, going back to the minutes
 20 that we were looking at {CLG00007308/9}, what you're
 21 referring to?
 22 A. No, I still don't understand why it's saying that that
 23 can't be used and we have to decide what we have to
 24 replace it with.
 25 Q. Right. So you can't help?

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1 A. No.
 2 Q. Was it your view that class 0 should be scrapped and
 3 replaced immediately, or at the end, at least, of
 4 a period of transition?
 5 A. Well, it was my understanding that that is indeed what
 6 would happen.
 7 Q. Right. And at the time of this meeting, it was
 8 envisaged, was it, that there would be a period of
 9 transition? Do you know whether it had been decided?
 10 A. I don't know at that meeting -- at the time of that
 11 meeting whether it had been, but, yes, there would have
 12 been a transition period, yes.
 13 Q. Can you remember how long that transition period was to
 14 be at that time?
 15 A. I don't remember exactly. I mean, I do recollect
 16 various time periods being spoken about, two years, but
 17 then, as I say, in the context of the harmonised
 18 standards, that then became 36 months. So, you know,
 19 things were quite complicated and often interfered with
 20 by decisions that were taken, you know, by the European
 21 Commission as well.
 22 Q. Now, going back to this question of replacement with
 23 class C, it is right, I think, isn't it, that replacing
 24 class 0 with A2 would have been the most restrictive and
 25 caused the most disruption to industry, but

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1 a replacement with class C would have been significantly
 2 less restrictive and less burdensome to industry,
 3 wouldn't it?
 4 A. What, instead of class 0, you mean?
 5 Q. Yes.
 6 A. Yes.
 7 Q. Do you know whether there was a response to your
 8 suggestion as recorded here?
 9 A. No, I don't.
 10 Q. Did people agree or disagree, do you remember?
 11 A. If it's not recorded in the minutes, I don't know,
 12 I don't have any detailed recollection.
 13 Q. Can we then go back to the minute at page 11
 14 {CLG00007308/11}, paragraph 6.20. It says there:
 15 "On p. 15 an amended Diagram 40 needs to be produced
 16 and Anthony Ferguson questioned the last line of the
 17 final para which states that 'index (I) not more than
 18 20' should be replaced by 'Class C'. Debbie Smith could
 19 not recall exactly where the figure came from and
 20 remarked that there was a general lack of data."
 21 As I say, that appears to be a discussion about the
 22 content of the draft European supplement to the approved
 23 document; is that right?
 24 A. Yes, it probably is, because it says, "On [page] 15".
 25 Q. Exactly.

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1 Do you know why that section needed to be amended to
 2 read class C? Do you think your proposal had been
 3 accepted at this stage?
 4 A. No, I don't know.
 5 Q. And you can't help about any of this?
 6 A. No, I can't.
 7 Q. Did you undertake any investigations that you undertook
 8 to investigate, where it says "Action: BRE to
 9 investigate this information"?
 10 A. I'm sure we would have done at the time.
 11 Q. Do you know what those investigations involved or
 12 revealed?
 13 A. No, I don't.
 14 Q. Going back to the idea of equivalence and your own view
 15 that a direct equivalence between the two systems was
 16 not possible, as we've seen and as you've confirmed
 17 today, if you look at paragraph 5.8, if you go back to
 18 that, please, in this document, page 7 {CLG00007308/7},
 19 you can see that you say there, in the third and fourth
 20 lines:
 21 "... certain products, such as aluminium foil faced
 22 insulation products, are problematic."
 23 Yes?
 24 A. Mm--hm.
 25 Q. Let's just focus on that.

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1 Let's look back, please, at the RADAR 2 report at
 2 {CLG00000951/9}, paragraph 4.5, "Cellular Plastic
 3 Sector".
 4 Look together with me at (a). In (a) it says this:
 5 "In the short report in Part 1 (ref.3) which
 6 accompanied the presentation of the data on the
 7 comparisons between the Euroclass system and the UK fire
 8 assessment procedures, two conclusions were drawn
 9 concerning cellular plastics products. These were:
 10 "1. For the product group as a whole, no
 11 correlation was obtained between the Euroclass system
 12 and the UK system.
 13 "2. For steel and plasterboard faced products,
 14 there was a good correlation with the UK Class 0 values
 15 corresponding to a Euroclass B."
 16 Just focusing on the first paragraph of that, no
 17 correlation for the whole group, were you surprised or
 18 concerned by that?
 19 A. Well, I guess that's what gave rise to my comment that
 20 you've just shown in the notes, that it was problematic.
 21 Q. Yes.
 22 If we look at the second point, for steel and
 23 plasterboard--faced products, it looks from the
 24 discussion below it that that wasn't limited to
 25 homogeneous products, but did include composite panels

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1 with a cellular plastic core; yes?
 2 A. Yes, that appears to be the case, yes.
 3 Q. They could only achieve class B because of the
 4 combustible component; I think that's right, isn't it?
 5 A. Because of the surface that —
 6 Q. You say because of the surface; in fact, isn't it
 7 because of the combustible component?
 8 A. I think we're probably talking at cross—purposes. They
 9 achieved class 0 because of the steel face or the
 10 plasterboard face.
 11 Q. Indeed.
 12 A. Yes.
 13 Q. But they can only achieve class B because of the
 14 combustible component. They couldn't achieve A2 or A1.
 15 A. Oh, correct, yes. Sorry, we're talking — yes,
 16 I understand now.
 17 Q. Yes. But whether they achieved class B or not wouldn't
 18 depend on the fire performance of the facing product,
 19 would it?
 20 A. Well, obviously, the performance is dependent upon the
 21 whole product that's submitted to the test.
 22 Q. In the Euro tests?
 23 A. Yes.
 24 Q. Did you assume that all facing material would behave the
 25 same?

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1 A. Did I assume?
 2 Q. Yes.
 3 A. No.
 4 Q. The reason I ask is steel and plasterboard is not the
 5 same as aluminium, is it?
 6 A. No.
 7 Q. Because aluminium might deform and fall off. Yes.
 8 If you look at (b):
 9 "Products 4/05 and 4/12, which also give Class 0 on
 10 the UK system give respectively Euroclasses C and D in
 11 the European assessment. Both of these products have
 12 relatively thin aluminium foil faced flexible foam
 13 laminates respectively based on polyisocyanurate and
 14 phenolic foam. With these products it was observed that
 15 in the SBI test, the aluminium foil facing was
 16 penetrated such that the underlying foam was then
 17 available to contribute to the rate of heat release
 18 calculation whereas in the US BS 476:Part 6, the heat
 19 release found in that test was not sufficient to
 20 displace the classification away from the UK class 0.
 21 Clearly, the introduction of a simple replacement of the
 22 UK Class 0 by a Euroclass B requirement in any
 23 regulatory procedure would discriminate against products
 24 4/05 and 4/12 against the practical experience of their
 25 acceptability in the UK market for Class 0

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1 applications."
 2 I just want to understand that. Just simplifying
 3 it, is this right: Warrington had concluded that some
 4 cellular plastic products, composite products, achieved
 5 class 0 but not class B, is this right, because the heat
 6 release rate satisfied part 6, but didn't meet the FIGRA
 7 levels required in the SBI test to meet class B, but
 8 only classes C or D?
 9 A. In principle, yes, that's a reasonable summary.
 10 Q. But requiring those products now to meet class B would
 11 effectively limit their market and discriminate against
 12 them?
 13 A. Yes, that's what that's saying.
 14 Q. Had you previously been aware that although several of
 15 the products which achieved class 0 in the UK national
 16 classification system achieved class B in the Euro
 17 system, foil-faced polyisocyanurate and phenolic foam
 18 insulation products got class 0, but only D and C
 19 respectively in the Euro system?
 20 A. Not prior to this.
 21 Q. Right. Were you surprised by that result?
 22 A. Surprised? Well, it was a data point, so I don't think
 23 I was surprised or not surprised.
 24 Q. It was significant, though, wasn't it?
 25 A. Yes, but I suppose in a way not surprising.

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1 Q. Right.
 2 A. Because the fire exposure in the single burning item
 3 test is sufficiently — is harsher, in the sense that
 4 you have flames directly impinging upon the surface of
 5 the product that's being tested.
 6 Q. Not surprising to you. From what you could tell, did
 7 Anthony Burd understand that? Did the government
 8 understand?
 9 A. Yes, I believe so. I think Anthony was present during
 10 these discussions, yes.
 11 Q. Now, focusing on the final sentence that I've read out
 12 to you, I'll read it again — in fact, we want the last
 13 two sentences there, I think, focusing on the
 14 penultimate sentence:
 15 "... not sufficient to displace the classification
 16 away from the UK class 0."
 17 Then it goes on:
 18 "Clearly, the introduction of a simple replacement
 19 of the UK Class 0 by a Euroclass B requirement in any
 20 regulatory procedure would discriminate against products
 21 4/05 and 4/12 against the practical experience of their
 22 acceptability in the UK market for Class 0
 23 applications."
 24 What did you understand the report to mean by the
 25 words "discriminate against" there?

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1 A. It would mean that those products, if we went with the
2 transposition of where the requirements are class 0, you
3 require Euroclass B, it would mean that products that
4 had previously been class 0 and had been used in a range
5 of applications could no longer be used.
6 Q. Did you consider that it was important to avoid
7 discriminating against foil-faced PIR and PF, phenolic
8 foam, polymer foam insulation products, regardless of
9 their comparatively poor reaction to fire performance
10 when assessed under the Euroclass system?
11 A. No, and within the context of, you know, the internal
12 linings, et cetera, then, as I say, the equivalence is
13 class 0 and class B.
14 Q. What was the problem with discriminating against
15 products that when tested under the Euroclass system
16 performed inadequately?
17 A. Sorry, could you please repeat that?
18 Q. What was the problem with discriminating against
19 products which when tested under the Euroclass regime
20 performed inadequately?
21 A. From my perspective, there wasn't one.
22 Q. No. Can you tell us about whether there was one from
23 the government's perspective?
24 A. That is where — well, obviously, they will need to
25 speak for themselves but, yes, I mean, the premise of

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1 the introduction of the construction products directive
2 and the framework that they set out and was required
3 within Europe was to remove barriers of trade, not to
4 necessarily remove products from the market.
5 Q. From your knowledge, was the rationale in that last
6 sentence there, namely the potential for discrimination
7 against those two products, a factor in the continued
8 retention of the national classes, in particular
9 national class 0?
10 A. I don't know.
11 Q. Was there any discussion about whether it might be
12 beneficial to fire safety to restrict the use of those
13 products on the basis that, although they achieved
14 class 0, they didn't achieve class B?
15 A. Not within that context, I don't believe, only insofar
16 as there was a progression towards the adoption of the
17 European classifications, and, you know, with the
18 expectation that the national classes would disappear.
19 MR MILLETT: Mr Chairman, it's 4.30. We are deep into this
20 topic but —
21 SIR MARTIN MOORE-BICK: But we're not going to finish it
22 this evening?
23 MR MILLETT: — somewhere about halfway across the pond on
24 it. We're not going to finish it this evening.
25 SIR MARTIN MOORE-BICK: All right. Well, at the risk — ah,

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1 the document has gone from the screen. Do you think we
2 could have the document back up, please? {CLG00000951}.
3 At the risk of trespassing on your questioning for
4 tomorrow, I wonder if you can help me with this: do you
5 see the sentence in subparagraph (b) which has been
6 underlined in manuscript?
7 A. Yes.
8 SIR MARTIN MOORE-BICK: Which refers to the practical
9 experience of their acceptability in the UK market for
10 class 0 applications. Do you recall any discussion
11 about what practical experience is being referred to?
12 A. No, I'm sorry, I don't. I mean, that may well have
13 come — oh, this is a Warrington report. No, I mean, it
14 would have been based on Warrington's understanding and
15 knowledge.
16 SIR MARTIN MOORE-BICK: I ask the question because I'm
17 a little uncertain what practical experience one would
18 get unless there was a fire.
19 A. Yes, I'm sorry, I don't know.
20 SIR MARTIN MOORE-BICK: All right. Thank you.
21 Well, if you do have any further thoughts, you can
22 follow it up tomorrow, Mr Millett.
23 MR MILLETT: Thank you, Mr Chairman. No, thank you, I think
24 that's —
25 SIR MARTIN MOORE-BICK: I think it's time we stopped for the

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1 day, Dr Smith, so we'll break there. We'll resume,
2 please, at 10 o'clock tomorrow, and, as I said before
3 many times, please don't talk to anyone about your
4 evidence or anything relating to it over the break. All
5 right?
6 THE WITNESS: Yes.
7 SIR MARTIN MOORE-BICK: Thank you very much. See you
8 tomorrow morning.
9 THE WITNESS: Thank you.
10 (Pause)
11 SIR MARTIN MOORE-BICK: Before we rise, can I just say thank
12 you to our stand—in stenographer and document manager,
13 who have performed in an exemplary manner today. Thank
14 you both very much.
15 MR MILLETT: Yes, thank you very much.
16 SIR MARTIN MOORE-BICK: Thank you, Mr Millett.
17 Well, 10 o'clock tomorrow then, please.
18 MR MILLETT: Thank you very much, Mr Chairman.
19 (4.32 pm)
20 (The hearing adjourned until 10.00 am
21 on Tuesday, 22 February 2022)
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