1	Wednesday, 28 November 2018	1	and the experience relevant to the matters you're
2	(10.00 am)	2	dealing with in this inquiry.
3	SIR MARTIN MOORE-BICK: Good morning, everyone. Welcome to	3	I'm not going to go through this, but would like to
4	today's hearing.	4	pick out the following details with you.
5	Today we are going to hear from the inquiry's expert	5	First of all, you are currently the director of the
6	on cause and origin of the fire.	6	Leverhulme Research Centre for Forensic Science; is that
7	Yes, Mr Kinnier.	7	right?
8	MR KINNIER: Thanks, sir. May I call Professor Niamh	8	A. That's correct.
9	Nic Daeid.	9	Q. You have held the chair in forensic science at the
10	SIR MARTIN MOORE-BICK: Thank you	10	University of Dundee since 2014.
11	PROFESSOR NIAMH NIC DAEID (affirmed)	11	A. Correct.
12	Questions by MR KINNIER.	12	Q. Between 2011 and 2014, you held the chair in forensic
13	SIR MARTIN MOORE-BICK: Thank you very much, professor. Sit	13	science at the University of Strathclyde?
14	down and make yourself comfortable there.	14	A. Yes, that's correct.
15	THE WITNESS: Thank you very much.	15	Q. In 2017, you become a Chartered Chemist.
16	SIR MARTIN MOORE-BICK: Yes, Mr Kinnier.	16	A. Yes.
17	MR KINNIER: Thank you, sir.	17	Q. As to fellowships, you're a fellow of a number of
18	First of all, would you please confirm your name for	18	learned societies, primarily the Royal Society of
19	the record.	19	Edinburgh
20	A. My name is Niamh Sinead Nic Daeid.	20	A. Yes, that's correct.
21	Q. Professor, thank you very much for coming today to give	21	Q the Royal Society of Chemistry
22	evidence. It's much appreciated.	22	A. Yes.
23	You've provided two reports: a preliminary report	23	Q the Chartered Society for Forensic Science
24	dated 29 March this year and a final report dated	24	A. Yes.
25	1 November of this year; is that right?	25	Q and the Institute of Chemistry of Ireland.
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1 (Pages 1 to 4)

1	which is the European Network of Forensic Science	1	side, and then the living room to the north of the
2	Institutes.	2	kitchen.
3	Q. Is it right you are the committee lead in the	3	A. Correct.
4	development of the UK national code of practice for fire	4	Q. If we can now look at the layout of the kitchen of
5	scene investigations?	5	flat 16. If we can turn to figure 13 on page 26.
6	A. Yes, that's true.	6	First of all, just to confirm, that's your
7	Q. Finally, you're a member of the steering committee for	7	approximation of the likely internal layout of the
8	the development and publication of judicial primers.	8	kitchen in flat 16; is that right?
9	A. Yes.	9	A. Yes, that's correct.
10	Q. That involves what, exactly?	10	Q. If you could enable us to understand, what evidence have
11	A. The judicial primers are a project led by the senior	11	you relied upon for placing the various appliances where
12	judiciary in England and Wales, so by the Lord Chief	12	they are identified in this plan?
13	Justice of England and Wales, in collaboration with the	13	A. The different appliances and their positions were
14	two national academies, the Royal Society and the Royal	14	presented in the diagram on the basis of witness
15	Society of Edinburgh, and the role of the primers is to	15	testimony from Mr Kebede and from the other occupants of
16	present the known position for a scientific discipline,	16	the flat, and also from the contemporaneous notes of the
17	DNA, for example, written by the leaders in the field,	17	the fire investigators, and also, finally, from the
18	•	18	information that was available within the thermal
19	and ratified by the councils of the national academies, in order to facilitate an understanding by the judiciary	19	imaging camera videos of the first firefighters that
20		20	went in.
21	of what the current accepted science in that particular area is.	21	The final aspect of it was looking at the
22	Q. Professor, thank you.	22	photographs that were taken by the first fire
23	Before I turn to examination on the topics contained	23	investigators who documented the scene.
24	in your final report, I should give a general warning to	24	Q. In your report, you advance three hypotheses. Just so
25	those in the room and watching elsewhere that a number	25	people are aware of what those are, hypothesis 1 is that
23	those in the room and watering elsewhere that a number	23	people are aware of what allose are, hypothesis I is allat
	Page 5		Page 7
1	of the photographs within your report that we will be	1	the fire in the tower started in the kitchen of flat 16
2	looking at during the course of this morning will show	2	as opposed to any other flat in the tower; is that
3	images of burnt-out scenes, and some people may find	3	right?
4	these distressing.	4	A. Yes, that's correct.
5	When I come up to particular photos, I shall	5	Q. Hypothesis 2 is that the fire started in the south-east
6	endeavour to give a warning. But at the outset, could	6	end of the kitchen of flat 16 as opposed to elsewhere
7	I make that general note for everyone watching.	7	within the kitchen.
8	Professor, the first topic I'd like to cover with	8	A. Correct.
9	you is really in order to orientate everyone as to what	9	Q. When we talked about the south-east end, what we're
10	the layout of the flat is.	10	talking about is the end where the kitchen window,
11	First of all, if I could ask Ralph to draw up	11	approximate position of the extractor fan, the tall
12	page 25 of your final report, the reference to which is	12	fridge freezer, the cooker end of the kitchen.
13	NNDS00000001, and that is figure 11.	13	A. Yes, that's correct.
14	First of all, the flat 16 mark there in red in the	14	Q. Finally, hypothesis 3 is that it's more likely than not
15	top right-hand corner, that identifies flat 16; is that	15	that the fire started on the south-east corner in the
16	right?	16	tall fridge freezer as opposed to any other appliance or
17	A. Yes, that's right.	17	item in the south-east corner of the kitchen of flat 16.
18	Q. On the same page Ralph, if we can go to figure 12	18	A. Correct.
19	this is a plan that you've drawn, I think, of flat 16	19	Q. Thank you.
20	itself.	20	If we can first turn to hypothesis 1.
21	A. It's a plan that I've taken from the previous figure and	21	Ralph, if I could ask you to show Professor
22	annotated so that I've labelled up the different rooms	22	Nic Daeid paragraph 8.8.11, which is at page 66 of the
23	in the flat.	23	final report.
24	Q. As we see, we have the kitchen in the bottom right-hand	24	Here you state your conclusion that, and I quote:
25	corner, the kitchen window identified on the far right	25	"8.8.11. All of the witness statements from the
	Page 6		Page 8
I	U		υ

1	fire fighters, fire service personnel and occupants of	1	kitchen of flat 16 at approximately 01.14 and described
2	flat 16 provide strong evidence that the fire in	2	the temperature change to be significant. Thereon you
3	Grenfell Tower on the 14th June 2017 started in the	3	see the evidence quoted.
4	kitchen of flat 16."	4	If you could de-amplify that, Ralph, and identify
5	My first question is: does that remain your view?	5	the paragraph 8.5.13, you have the evidence of
6	A. Yes, it does.	6	Firefighter Daniel Brown, who describes flame within
7	Q. Can we look briefly at the evidence upon which you've	7	flat 16.
8	relied in reaching this conclusion.	8	A. That's correct, yes.
9	The first category of evidence is the evidence of	9	Q. If that could be de-amplified, Ralph, and if you could
10	Mr Kebede and the other two occupants of flat 16; is	10	amplify paragraph 8.5.19 on page 35.
11	that a fair summary?	11	You summarise the evidence of Firefighters O'Hanlon
12	A. Yes, that is.	12	and Barton, but primarily O'Hanlon, in which they
13	Q. Could I ask Ralph to put up on the screen	13	identify the scene that they witnessed when they
14	paragraph 8.2.2 at page 23 of the final report.	14	attended flat 16; is that right?
15	Here you set out the relevant extracts from a 999	15	A. Yes. I think the sequence here is important. So when
16	call made by Mr Kebede at 00.54; is that right?	16	the first firefighters, Batterbee and Brown, entered the
17	A. Yes.	17	flat, they searched the flat initially, and the only
18	Q. Where he says there, "fire in flat 16, Grenfell Tower"	18	place where they found evidence of burning was in the
19	and "the fridge, flat 16 Grenfell Tower". That's the	19	kitchen, having searched the rest of the property.
20	evidence upon which you've relied from that phone call.	20	Q. If I could stop you there, it may help you, professor
21	A. Yes. It was the first phone call that was, to my	21	Ralph, could you de-amplify page 35 and go back to
22	knowledge, recorded by the London Fire Brigade.	22	page 31.
23	Q. Thank you.	23	On this page, essentially you set out the key
24	Ralph, if you could put that amplification down and	24	relevant evidence that you've relied upon for the
25	take us to page 65, first of all, of the final report.	25	initial stages of the very first, first responders'
	Page 9		Page 11
1	Here, at paragraphs 8.8.5 onwards, and turning over	1	search?
2	the page to page 66, is it right you've set out what you	2	A. That's correct.
3	considered to be the relevant extracts from the witness	3	Q. The third category of evidence you cite in the report is
4	statements of the former occupants of flat 16 which are	4	the footage from the thermal image cameras held by the
5	pertinent to hypothesis 1?	5	first responders; is that right?
6	A. Yes.	6	A. Yes.
7	Q. Can you draw out for us what you consider to be the key	7	Q. Ralph, if I can ask you to turn to page 32 of the report
8	elements of the evidence upon which you've relied?	8	and, in particular, figure 19.
9	A. The key elements here are the witness's statement	9	Professor, I think we dealt with these stills when
10	relating to what he saw once the smoke alarm in the flat	10	you gave evidence back in June, but I think it would be
11	woke him up. So he reports, having gone into his	11	useful if you could talk us through (a), (b) and (c) in
12	kitchen or looked inside the kitchen, what he saw in	12	that order, what they show and what you derive from
13	regards to smoke within the kitchen area, and then his	13	them.
14	direct actions following that observation, which was to	14	A. So what you're looking at is on the left-hand side of
15	wake the other people in the flat and to exit the flat	15	the photographs is an unmarked-up image. That's the
16	to try to wake up his neighbours and also to call the	16	image that was directly taken from the thermal imaging
17	fire service.	17	camera. On the right-hand side, corresponding to each
18	Q. The second category of evidence you rely upon is the	18	of those photographs, so for (a), (b) and (c), I've
19	evidence of the first responders; is that a fair	19	placed what I believe to be the positioning of some of
20	summary?	20	the appliances that were within the kitchen.
21	A. Yes.	21	If we take photograph (a) first, or the two
22	Q. If I could ask Ralph to take us to page 31 of your final	22	photographs connected with (a) first, this was the
23	report, and paragraph 8.5.11, here you summarise the	23	thermal image captured by the TIC when the firefighters
24	evidence of Crew Manager Charles Batterbee, in which he	24	opened the kitchen door for what we understand to be the
25	said he opened the door to the right leading into the	25	first time. So that was at 01.14, according to the
	Page 10	l	Page 12

1	times that we have agreed.	1	placed some of the appliances in terms of where I have
2	What you see is, looking down the photograph	2	interpreted them to be.
3	perhaps if I can stand up.	3	Q. Your interpretation of the location of the appliances is
4	SIR MARTIN MOORE-BICK: Please do.	4	shown in the middle right-hand box?
5	A. It might be easier.	5	A. That's correct.
6	So what you see on the first photograph, this	6	Q. Professor, if I could ask you to turn to the bottom two
7	is looking from the kitchen door, this I believe to be	7	images, so figure 19(c), what does the bottom left-hand
8	the edge of the door (Indicates)	8	image show us?
9	MR KINNIER: Professor, if I could just stop you there, for	9	A. Again, this is the third opening of the door. So in
10	the transcript, what you're pointing to is figure 19A at	10	between each, the firefighters close the door, waited
11	the top left-hand photo.	11	a small amount of time and then re-opened them. This
12	A. Yes.	12	was about a minute after the images of figure (b).
13	MR KINNIER: Thank you.	13	Here the firefighters are looking at the fire at the
14	A. So the bit I believe to be part of the door is the black	14	end of the room from a different angle. So we're no
15	line on the right-hand side of the photograph. As you	15	longer looking directly along, we're now looking upwards
16	look down into the room, you see a yellow glow down	16	into the corner. So what you're seeing is the top of
17	towards the end. Thermal imaging cameras show different	17	the appliances as opposed to the entire length of the
18	temperatures by changing the colour. So while it looks	18	appliance or as much of the length as we can see. So
19	like a yellow glow, that doesn't necessarily mean it's	19	we're looking up into the top corner, if you like, or
20	a flame, it simply means it is a higher temperature.	20	top portion of the room.
21	So as you look down the room, this is what the	21	The black line on the right-hand side is, again, the
22	firefighters would have seen.	22	door of the kitchen, and my interpretation of where the
23	My interpretation of some of the somewhat grainy	23	tall fridge freezer is is indicated on figure (c) to the
24	images within the photograph is that here (Indicates),	24	right.
25	which is about the middle of the photograph, there's	25	Q. I'm grateful for that.
	Page 13		Page 15
1	an almost shaded, rounded area with an outline around	1	Professor, if you wouldn't mind staying standing.
2	it, which I interpret to be the washing machine, and	2	Ralph, if you wouldn't mind turning to page 34 and
3	then beside it a tall object that's blocking the	3	figure 21.
4	increased colour, if you like, on the TIC, which	4	Professor, again, if we could go through each of
5	I believe to be the fridge freezer.	5	these images.
6	Q. If we look at the top right-hand image, you have there	6	First of all, though, a general question: what do
7	drawn in a dotted red line what you consider to be the	7	these images show?
8	tall fridge freezer and, next to it, the washing	8	A. These images are now the firefighters have now moved
9	machine; is that right?	9	into the kitchen, so these are no longer from the
10	A. Yes. Now, we know that the washing machine and the tall	10	doorway, they've moved into the kitchen, and while one
11	fridge freezer weren't beside each other, but as you	11	of the firefighters I believe it to be
12	look down the room, the positioning of the various	12	Firefighter Batterbee was tackling the fire in the
13	appliances are distorted slightly just in terms of how	13	fridge freezer, Firefighter Brown was looking at the
14	you viewed the room.	14	rest of the window end of the kitchen using the thermal
15	Q. If we can now move down to figure 19(b), what does the	15	imaging camera, and that's what these images depict.
1.0	middle left-hand photo show us?	16	Q. Thank you.
10			C 3
16 17	•	17	I interrupted you. If we could start in the top
	A. So in figure 19, we've now moved on by about 15 seconds only, so this was the second opening of the door by the	17 18	I interrupted you. If we could start in the top left hand corner, we have figure 21(a), what does this
17	A. So in figure 19, we've now moved on by about 15 seconds		* *
17 18	A. So in figure 19, we've now moved on by about 15 seconds only, so this was the second opening of the door by the firefighters. Again, you're looking from the doorway,	18	left hand corner, we have figure 21(a), what does this image show us, in your interpretation?
17 18 19	A. So in figure 19, we've now moved on by about 15 seconds only, so this was the second opening of the door by the firefighters. Again, you're looking from the doorway, they haven't entered the room yet, and you're looking	18 19	left hand corner, we have figure 21(a), what does this image show us, in your interpretation?  A. Figure 21(a) is looking at the top west-hand corner of
17 18 19 20	A. So in figure 19, we've now moved on by about 15 seconds only, so this was the second opening of the door by the firefighters. Again, you're looking from the doorway, they haven't entered the room yet, and you're looking down towards the window end of the property, or the	18 19 20	left hand corner, we have figure 21(a), what does this image show us, in your interpretation?  A. Figure 21(a) is looking at the top west-hand corner of the kitchen window. So the large kitchen window is on
17 18 19 20 21	A. So in figure 19, we've now moved on by about 15 seconds only, so this was the second opening of the door by the firefighters. Again, you're looking from the doorway, they haven't entered the room yet, and you're looking	18 19 20 21	left hand corner, we have figure 21(a), what does this image show us, in your interpretation?  A. Figure 21(a) is looking at the top west-hand corner of
17 18 19 20 21 22	A. So in figure 19, we've now moved on by about 15 seconds only, so this was the second opening of the door by the firefighters. Again, you're looking from the doorway, they haven't entered the room yet, and you're looking down towards the window end of the property, or the kitchen.	18 19 20 21 22	left hand corner, we have figure 21(a), what does this image show us, in your interpretation?  A. Figure 21(a) is looking at the top west-hand corner of the kitchen window. So the large kitchen window is on this side, on the left-hand side; the smaller kitchen
17 18 19 20 21 22 23	A. So in figure 19, we've now moved on by about 15 seconds only, so this was the second opening of the door by the firefighters. Again, you're looking from the doorway, they haven't entered the room yet, and you're looking down towards the window end of the property, or the kitchen.  What you can observe is that the temperature has	18 19 20 21 22 23	left hand corner, we have figure 21(a), what does this image show us, in your interpretation?  A. Figure 21(a) is looking at the top west-hand corner of the kitchen window. So the large kitchen window is on this side, on the left-hand side; the smaller kitchen window with the infill panel above it with the extractor
17 18 19 20 21 22 23 24	A. So in figure 19, we've now moved on by about 15 seconds only, so this was the second opening of the door by the firefighters. Again, you're looking from the doorway, they haven't entered the room yet, and you're looking down towards the window end of the property, or the kitchen.  What you can observe is that the temperature has increased, or at least the spread of the temperature has increased from the previous photograph, and, again, I've	18 19 20 21 22 23 24	left hand corner, we have figure 21(a), what does this image show us, in your interpretation?  A. Figure 21(a) is looking at the top west-hand corner of the kitchen window. So the large kitchen window is on this side, on the left-hand side; the smaller kitchen window with the infill panel above it with the extractor fan is on the right-hand side. What this photograph is showing is the thermal imaging camera's image of just
17 18 19 20 21 22 23 24	A. So in figure 19, we've now moved on by about 15 seconds only, so this was the second opening of the door by the firefighters. Again, you're looking from the doorway, they haven't entered the room yet, and you're looking down towards the window end of the property, or the kitchen.  What you can observe is that the temperature has increased, or at least the spread of the temperature has	18 19 20 21 22 23 24	left hand corner, we have figure 21(a), what does this image show us, in your interpretation?  A. Figure 21(a) is looking at the top west-hand corner of the kitchen window. So the large kitchen window is on this side, on the left-hand side; the smaller kitchen window with the infill panel above it with the extractor fan is on the right-hand side. What this photograph is

what was bappening around that are; jist after the firefighters had entered the room, so about a minute after the firefighters had entered the room,  A C If we move over looking at (b), again, it's an image of the kitchen window, I mink.  What can be seen through that window, in your view?  A So for langes here are—some of them are replicants of each other. This one (Indicates) is showing you now where the edge of the window frame is and what appears to be in evidence is materials dropping down across the vindows, on the outside of the window.  12 Q, Again, is it much the same view that's identified in the 13 stills at (c), (d) and (e)?  14 A Ves.  15 Q) Professor, thank you can put that image down across the vindows, on the outside of the window.  16 Rahy, sou can put thou frame is and what appears to be in evidence is materials dropping down across the vindows, on the outside of the window.  16 Rahy, you can put thou frame is and what appears to be in evidence is materials dropping down across the vindows, on the outside of the window.  17 Professor, thank you to report that the fourth 18 Rahy, you can put that image down across the vindows, on the outside of the window.  19 Professor, the fifth and final category of evidence vow respect of hypothesis 1 appears to be the evidence of the occupant of fall 9, is that to respect of hypothesis 1, pure and pumparph 8,8.9, and could that be amplified.  That paragraph reads thus:  10 Professor, thank you can put the fourth 11 was a fall, if could ask you to go to page 66 of the final report, and pumparph 8,8.9, and could that be amplified.  12 That paragraph reads thus:  13 stills at (c), (d) and (e)?  14 A Ves.  15 Professor, thank pour very much. 16 Rahy, you can put those down. 17 Professor, thank pour very much. 18 category of evidence you've redied undown of the fire art of the vindow of the fire art of the window of the fire art of the				
after the firefighters had entered the room.  4 Q. If we move over looking at (b), again, it's an image of the kitchen window, Intim.  5 What can be seen through that window, in your view?  6 A. So the images here are—some of them are replicants of each other. This one (Indicates) is showing you now where the edge of the window frame is, and what appears to be in evidence is materials dropping down across the window, on the outside of the window.  10 O. Again, is it much the same with a still at (c), (d) and (c)?  11 What is it is a first of the window.  12 O. Again, is it much the same view that's identified in the stills at (c), (d) and (c)?  13 stills at (c), (d) and (c)?  14 A. Yes.  15 O. Professor, thank you very much.  16 Raphy, you can put those down.  17 Professor, thank you very much.  18 category of evidence you've relied upon is fordage actually taken by Mr Kebede himself; is that right?  20 A. Yes.  21 O. If could ask kalph to put up page 39 of your final report and fagure 25.  22 report and figure 25.  23 abost are?  24 A. Yes.  25 A. These are still images taken from video material that  26 they are taken from outside of Grenfell Tower. Looking up towards flat 16.  30 Use are taken from outside of Grenfell Tower. Looking up towards flat 16.  40 Q. Can you help us, what can you deduce from these sesseemshot?  41 was recovered from Mr Kebede's mobile telephone, and that as that burning is propressing, the fire is existing that:  42 they are taken from outside of Grenfell Tower. Looking up towards flat 16.  43 Q. Can you help us, what can you deduce from these sesseemshot?  44 A. Yes.  25 A. These are still images taken from video material that that a thurning is propressing, the fire is existing that it was trepported actinitied propressing the fire is existing to repair and really what the particular extract of evidence source relied upon?  45 A. So the videos follow a sequence, as you can see by the finding and really what the varies of the fire around about the window of the kitchen of flat 16.	1	what was happening around that area just after the	1	out what appears to be debris falling from the window.
4 Professor, the fifth and final category of evidence of the kitchen window, I think. 5 What can be seen through that window, in your view? 6 What can be seen through that window, in your view? 7 A. So the images here are — some of them are replicants of each other. This one (Indiaces) is showing you now where the edge of the window frame is, and what appears to to be inc vidence is materials dropping down across the window, on the outside of the window. 11 or vidence is materials dropping down across the window, on the outside of the window. 12 Q. Again, is it much the same view that's identified in the stills at (c), (d) and (e??) 13 stills at (c), (d) and (e??) 14 A. Yes. 15 Q. Professor, thank you very much. 16 Ralph, you can put those down. 16 Ralph, you can put those down. 17 Professor, it looks from your report that the fourth eatingt of the window you were protected in the category of evidence you've relied upon is footage actually taken by Mr Kebede himself, is that right? 19 a catally taken by Mr Kebede himself, is that right? 20 A. Yes. 21 Q. If I could ask Ralph to put up pags 39 of your final encapture of the category of evidence you've relied upon is footage actually taken by Mr Kebede himself, is that right? 22 A. Yes. 23 First of all, canyou confirm for us what these shoes are? 24 shoes are? 25 A. These are still images taken from video material that 26 they are taken from outside of Giverfell Tower. Looking up to ward that 1. 27 they are taken from outside of Giverfell Tower. Looking up to ward that 1. 28 the development of the fire around about the window of the kitchen of flat 16. 30 What appears to be happening is that the area around where the extractor fan is appears to be huming, and the development of the fire around about the window of the kitchen of flat 16. 40 Q. The kitchen of flat 16. 41 Q. The kitchen of flat 16. 42 Q. The kitchen of flat 16. 43 Q. The top arrow is a papear to rely upon the flat of the window of the kitchen of flat 16. 44 Q. The top arrow is a papear to be branched	2	firefighters had entered the room, so about a minute	2	Q. Thank you.
the kitchen window, I think.  What can be seen through that window, in your view?  A. So the images here are — some of them are replicants of each other. This one (Indicates) is showing you now where the edge of the window frame is, and what appears to be the evidence of the window.  What can be deed, if the window frame is, and what appears to be the evidence of the window.  Q. Again, is it much the same view that's identified in the stills at (c), (d) and (c?)?  A. Yes.  Q. Again, is it much the same view that's identified in the stills at (c), (d) and (c?)?  A. Yes.  Professor, it looks from your report that the fourth and the same view that's identified in the stills at (c), (d) and (c?)?  Professor, it looks from your eport that the fourth actions of evidence you've relied upon is flootage actually taken by Mr. Ketched himself; is that right?  A. Yes.  Professor, it looks from your report that the fourth proportion and figure 25.  First off all, can you confirm for us whot these shots are?  A. These are still images taken from video material that  Page 17  was recovered from Mr. Kebede's mobile telephone, and they are taken from outside of Greafell Tower. Looking up towards flat 16.  Q. Can you help us, what can you deduce from these sorterished?  A. Yes, and this was important because when the fire times and really what I was trying to capture was just the development of the fire around about the window of the the kitchen of flat 16.  What appears to be happening is that the area around where the extractor fan is appears to be the united and that stat burning is progressing, the fire is exiding or beginning to cit outside of the kitchen of flat 16.  Q. The kitchen extractor fan is appears to be burning, and that stat burning is progressing, the fire is exiding or beginning to cit outside of the kitchen of flat 16.  Q. The kitchen extractor fan is appears to be burning, and that a that that burning is progressing, the fire is exiding or beginning to cit outside of the kitchen of flat 16.  Q. That's correct	3	after the firefighters had entered the room.	3	
Must can be seen through that window, in your vises?  A. So the images here are — some of them are replicants of a cach other. This one (Indicates) is showing you now where the edge of the window frame is, and what appears to to be ine victione is materials dropping down across the window, on the outside of the window.  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  Q. Again, is it much the same vise that's identified in the stills at (c), (d) and (e)?  The forescor, thank, you very much.  A Yes.  10 Q. Falph, if I could ask you to go to page 60 of the final reportation of the intention of the fire around at the fourth of the intention of the fire around at the fourth of the intention of the intention of the fire around about the window of the kinden of that it.  Page 17  11 was recovered from Mr Kebede's mobile telephone, and they are taken from outside of Grenfell Tower. Looking up towards that 16.  Q. Can you help us, what can you deduce from these screenbose?  A. Yes, and this was important because when the fire investigators at a later point examined some of the theorem.  Page 19  11 was recovered from Mr Kebede's mobile telephone, and they are taken from outside of Grenfell Tower. L	4	Q. If we move over looking at (b), again, it's an image of	4	
the occupant of flat 9, is that correct?  cach other. This one (Indicates) is showing you now  where the edge of the window frame is, and what appears to be in evidence is materials dropping down across the window, on the outside of the window.  Q. Again, is if much the same view that's identified in the stills at (e), (d) and (e??  A. Yes.  Professor, it is is much the same view that's identified in the stills at (e), (d) and (e??  A. Yes.  Professor, thank you very much.  Rahly, wo can put those down.  Professor, thank you very much.  Rahly, wo can put those down.  Professor, thank you very much.  Rahly, wo can put those down.  Professor, it looks from your report that the fourth category of evidence you've relied upon is footage actually alsen by Mr. Kebche inmed!; is that right?  A. Yes.  Yes.  Where the edge of the window of the professor, it looks from your report that the fourth to because the occupant of flat 9 spokes to the fire service at 0136-23 which was after the initial contact by Where the edge of the window of the professor, it looks from your report that the fourth to be cause the occupant of flat 9 spokes to the fire service at 0136-23 which was after the initial contact by Where the edge of the window of the professor, it looks from your report and figure 25.  First of all, can you confirm for us what these  Page 17  The fire was not in her flat but there was a  to fire confirm outside of Grenfell Tower. Looking up towards flat 16.  Q. Can you help us, what can you deduce from these the development of the fire around about the window of the kitchen of flat 16.  A. So the videous follow a sequence, as you can see by the timing, and really what I was trying to capture was just the development of the fire around about the window of that as that burning is progressing, the fire is exifing or beginning to exit outside of the kitchen of flat 16.  Q. The work of	5	the kitchen window, I think.	5	you appear to rely upon for reaching your conclusions in
secution ther. This one (Indicates) is showing you now where the edge of the window frame is, and what appears to be in evidence is materials dropping down across the window, on the outside of the window.  11 Q. Again, is it much the same view that's identified in the stills at (c), (d) and (e)?  12 A. Yes.  13 Silks at (c), (d) and (e)?  14 A. Yes.  15 Q. Professor, thank you very much.  16 Raiph, you can put those down.  16 Raiph, you can put those down.  16 Raiph, you can put those down.  17 Professor, it loaks from your report that the fourth category of evidence you've relied upon is footage.  18 actually taken by Mr. Kehede himself; is that right?  20 A. Yes.  21 Q. If I could ask Raiph to put up page 39 of your final category of evidence you've relied upon?  22 report and paragraph 8.8.9, and could that be amplified.  23 Professor, thank you very much.  16 Raiph, you can put those down.  16 Because the occupant of fist 9 spoke to the fire service actually taken by Mr. Kehede himself; is that right?  20 A. Yes.  21 Q. If I could ask Raiph to put up page 39 of your final category of evidence you've relied upon?  22 report and paragraph 8.8.9, and could that be amplified.  23 Priest of all, can you content that the area around about these shots are?  24 A. Yes.  25 A. These are still images taken from video material that  26 Page 17  27 Was recovered from Mr. Kehede's mobile telephone, and they are taken from outside of Grenfell Tower. Looking up towards flat 16.  28 A. Yes.  29 Was recovered from Mr. Kehede's mobile telephone, and they are taken from outside of Grenfell Tower. Looking up towards flat 16.  29 A. Yes.  20 A. Yes.  21 Q. Canyon help us, what can you deduce from these screenshols?  22 A. Yes.  23 Use of the window of the fire within they are taken from outside of Grenfell Tower. Looking up towards flat 16.  24 Q. Can you help us, what can you deduce from these screenshols?  25 A. The videos follow a sequence, as you can see by the fimile, and really what I was trying to capture was just the de	6	What can be seen through that window, in your view?	6	respect of hypothesis 1 appears to be the evidence of
where the edge of the window frame is, and what appears to be in evitence is materials dropping down across the window, on the outside of the window.  Window, on the outside of the window.  A. Yes.  A. Yes.  Raph, you can put those down.  Professor, thank you very much.  Raph, you can put those down.  Professor, it holds from your report that the fourth professor, it holds from your report that the fourth actagory of evidence you've relied upon is footage actually taken by Mr. Keched himself; is that right?  A. Yes.  A. Yes.  A. Yes.  A. Yes.  A. Yes.  If I could ask Raph to put up age 39 of your final report and figure 25.  First of all, can you confirm for us what these shorts are?  A. These are still images taken from video material that  Page 17  Was recovered from Mr. Kebede's mobile telephone, and they are taken from outside of Genefiell Tower. Looking up towards flat 16.  Q. Can you help us, what can you deduce from these screenshots?  A. No.  O. Can you help us, what can you deduce from these screenshots?  A. No the videos follow a sequence, as you can see by the timing, and really what I was trying to capture was just the decolopment of the fire around about the window of the kitchen of flat 16.  What appears to be happening is that the area around where the extractor fan is appears to be burning, and really what I was trying to capture was just the decolopment of the fire around about the window of the kitchen of flat 16.  What appears to be happening is that the area around where the extractor fan is papears to be burning, and really what I was trying to capture was just the drew from the secondary of the screenshots?  A. The work of the window on the right-hand side of the window as a power of the power of the power of the power of the window on the right-hand side of the window as you look up.  A. The top arrow is — my interpretation of the photograph is the power on the right-hand side of the window as you look up.  A. The top arrow is — my interpretation of the photograph is the middle arrow?  A.	7	A. So the images here are some of them are replicants of	7	the occupant of flat 9; is that correct?
to be in evidence is materials dropping down across the window, on the outside of the window.  11	8	each other. This one (Indicates) is showing you now	8	A. Yes.
window, on the outside of the window.    2	9	where the edge of the window frame is, and what appears	9	Q. Ralph, if I could ask you to go to page 66 of the final
12 Q. Again, is it much the same view that's identified in the stills at (c), (d) and (e)?  13 A. Yes. 15 Q. Professor, thank you very much. 16 Ralph, you can put those down. 17 Professor, it looks from your report that the fourth 17 eategory of evidence you've relied upon is floatage 18 actually taken by Mr. Kehede himself; is that right? 18 category of evidence you've relied upon is floatage 18 ms reported as stating that; 19 actually taken by Mr. Kehede himself; is that right? 19 actually taken by Mr. Kehede himself; is that right? 20 A. Yes. 21 Q. If I could ask Ralph to put up page 39 of your final 21 tot of smoke 22 report and figure 25. 23 First of all, can you confirm for us what these 24 shots are? 24 shots are? 25 A. These are still images taken from video material that 25 investigators at a later point examined some of the 18 ms are exceptable? 26 A. So the videos follow a sequence, as you can see by the 4 time, and reliably what I was trying to capture was just the development of the fire around about the window of 4 the development of the fire around about the window of 4 the development of the fire around about the window of 4 the development of the fire around about the window of 5 the kitchen of flat 16. 24 Q. The kitchen or stratefor fan, if we look at (c), am I right in minds and the strength of your conclusion in respect of hypothesis I or gives rise to an altermative hypothesis? 25 A. The substanding it's identified by the large white in understanding it's identified by the large white in understanding it's identified by the large white in timed at 01.08.18, what does the top arrow indicate? 24 A. That or orect. 25 A. The top arrow is a my interpretation of the photograph is that the area around where the extractor fan, if we look at (c), which is in understanding it's identified by the large white in understanding it's identified by	10	to be in evidence is materials dropping down across the	10	report, and paragraph 8.8.9, and could that be
stills at (c), (d) and (c)?  14 A. Yes.  15 Q. Professor, thank you very much.  16 Ralph, you can put those down.  17 Professor, it blocks from your report that the fourth  18 category of evidence you've relied upon is floatage  19 actually taken by Mr Kebede himself; is that right?  19 actually taken by Mr Kebede himself; is that right?  20 A. Yes.  21 Q. If I could ask Ralph to put up page 39 of your final  22 report and figure 25.  23 First of all, can you confirm for us what these  24 shots are?  25 A. These are still images taken from video material that  26 Page 17  10 was recovered from Mr Kebede's mobile telephone, and they are taken from outside of Grenfell Tower. Looking  29 up towards flat 16.  20 A. Con you help us, what can you deduce from these screenshots?  21 A. Con you help us, what can you deduce from these screenshots?  22 A. Con you help us, what can you deduce from these the development of the fire around about the window of the thicknen of flat 16.  20 A. The state by the development of the fire around about the window of the thicknen of flat 16.  21 Q. The kitchen of flat 16.  22 Q. The kitchen of flat 16.  23 Q. The kitchen of flat 16.  24 Q. The kitchen of flat 16.  25 Q. The kitchen of flat 16.  26 Q. The kitchen of flat 16.  27 A. That's correct.  28 A. That's correct.  29 A. That's identified by the large white immed at 01.08.18, what does the top arrow indicate?  29 A. That's correct.  20 A. The operands of the fire around of the window on the right-hand side of the window as you fook up.  21 Yes the development of the fire around of the photograph is that the right in thinking that's the particular extract of ni right in definition of the fire within the tower.  21 A. The open of the fire around about the window of the kitchen of flat 16.  22 A. The open of the fire around about the window of the kitchen of flat 16.  23 C. The wore along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  24 A. The operands flat 16.  25 A. The operands flat 16.	11	window, on the outside of the window.	11	amplified.
14 A. Yes. 15 Q. Professor, thank you very much. 16 Ralph, you can put those down. 17 Professor, it looks from your report that the fourth 18 category of evidence you've relied upon is footage 19 actually taken by Mr Kebede himself; is that right? 20 A. Yes. 21 Q. I'll could ask Ralph to put up page 39 of your final 22 report and figure 25. 23 First of all, can you confirm for us what these 24 shots are? 25 A. These are still images taken from video material that 26 Page 17  1 was recovered from Mr Kebede's mobile telephone, and they are taken from outside of Grenfell Tower. Looking up towards flat 16. 25 Look and they are taken from outside of Grenfell Tower. Looking to the kitchen of flat 16. 26 A. So the videos follow a sequence, as you can see by the time, and really what I was trying to capture was just the development of the fire around about the window of the kitchen of flat 16. 26 This ruled that out, as far as I was concerned, where the extractor fan is appears to be burning, and where the extractor fan is appears to be burning, and where the extractor fan is appears to be burning, and where the extractor fan is wheel for the kitchen of flat 16. 27 La that as that burning is progressing, the fire is exiting in important to the asta burning is progressing, the fire is exiting in timed at 01.08.18, what does the top arrow indicate? 22 A. That's correct. 23 A. The top arrow is - my interpretation of the photograph is that tit's indicating flames now starting to come out from the window on the right-hand side of the window as you have been strained to the window on the right-hand side of the window as you have been she appears to be parrow indicate? 24 A. The top arrow is - my interpretation of the photograph is that tit's indicating flames now starting to come out from the window on the right-hand side of the window as you have along to the parrow indicate? 25 A. The middle arrow? 26 A. The middle arrow and the arrow beneath it are pointing to the middle arrow? 27 A. The top arrow is - my interpretation o	12	Q. Again, is it much the same view that's identified in the	12	That paragraph reads thus:
15 Q. Professor, thank you very much. 16 Ralph, you can put those down. 16 Ralph, you can put those down. 17 Professor, it looks from your report that the fourth 18 category of evidence you've relied upon is footage 19 actually taken by Mr Kebede himself; is that right? 19 actually taken by Mr Kebede himself; is that right? 19 Q. If I could ask Ralph to put up page 39 of your final 20 Professor, at looks Ralph to put up page 39 of your final 21 report and figure 25. 22 First of all, can you confirm for us what these 23 First of all, can you confirm for us what these 24 shots are? 25 A. These are still images taken from video material that 26 Page 17  1 was recovered from Mr Kebede's mobile telephone, and they are taken from outside of Grenfell Tower. Looking 29 up towards flat 16. 29 Q. Can you help us, what can you deduce from these 29 timing, and really what I was trying to capture was just the development of the fire around about the window of the kitchen of flat 16. 30 What appears to be happening is that the area around 41 where the extractor fan is appears to be burning, and 42 that as that burning is progressing, the fire is exiting 43 or beginning to exit outside of the kitchen of flat 16. 44 Q. The kitchen extractor fan, if we look at (c), ml right in understanding it's identified by the large white 10 in understanding it's identified by the large white 11 in understanding it's identified by the large white 12 time dat 01.08.18, what does the top arrow indicate? 13 A. That's correct. 14 Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate? 24 A. The oparrow is — my interpretation of the photograph is that this indicating flames now starting to come out from the window on the right-hand side of the window as you look up. 24 Q. And the middle arrow? 25 A. The middle arrow and the arrow beneath it are pointing 26 G. A. The middle arrow and the arrow beneath it are pointing 27 G. The kitchen extractor fan is appears to be done in the photograph is that	13	stills at (c), (d) and (e)?	13	"8.8.9. Flat 9 on the third floor of Grenfell Tower
16   Balph, you can put those down   16   because the occupant of flat 9 spoke to the fire service   17   at 01:36:23 which was after the initial contact by   mr   18   attacopy of evidence you've relied upon is footage   18   Mr Behaliu KEBIDE The occupier of flat 9 was   actually taken by Mr Kebede himself; is that right?   19   reported as stating that;   20   A. Yes.   20   If I could ask Ralph to put up page 39 of your final   21   tot of smoke   21   Am I right in thinking that's the particular extract of evidence you've relied upon?   22   Am I right in thinking that's the particular extract of evidence you've relied upon?   23   A. Yes, and this was important because when the fire investigators at a later point examined some of the   25   Page 19     26   Page 19   27   Page 19   28   Page 19   29   29   29   29   29   29   29	14	A. Yes.	14	= -
Professor, it looks from your report that the fourth actually taken by Mr Kebede himself; is that right?   19   18   20   A. Yes.   20   If I could ask Ralph to put up page 39 of your final   21   10 of smoke'"   19   10 of smoke'"   19   10 of smoke'"   19   10 of smoke'   10 of smo	15	Q. Professor, thank you very much.	15	
18 category of evidence you've relied upon is footage 19 actually taken by Mr Kebede himself; is that right? 20 A. Yes. 21 Q. If I could ask Ralph to put up page 39 of your final 22 report and figure 25. 23 First of all, can you confirm for us what these 24 shots are? 25 A. These are still images taken from video material that 26 Page 17  1 was recovered from Mr Kebede's mobile telephone, and 27 they are taken from outside of Grenfell Tower. Looking 28 up towards flat 16. 29 Q. Can you help us, what can you deduce from these 29 the development of the fire around about the window of 29 the dichen of flat 16. 30 What appears to be happening is that the area around 31 where the extractor fan is appears to be burning, and 32 that as that burning is progressing, the fire is exiting 33 or beginning to exit outside of the kitchen of flat 16. 34 Q. Can you seen any evidence since you completed your 35 relief in understanding it's identified by the large white 36 in data of the stream of the life was not in her flat but there was a 3 lot of smoke'" 36 Identify the fire was not in her flat but there was a 3 lot of smoke'" 36 A. Yes, and this was iniportant because when the fire 36 investigators at a later point examined some of the 37 investigators at a later point examined some of the 38 inportant to be able to rule out flat 9 was 40 quite extensively damaged. It was then, therefore, 41 important to be able to rule out flat 9, because it was 42 lower, as a potential point of origin of the fire within 43 the tower. 44 This ruled that out, as far as I was concerned, 45 quite conclusively, because the occupant was in flat 9 46 after the fire had begun in flat 16. 47 Q. Turning to your conclusion and the strength of your 48 confidence in relation to your conclusion on 49 hypothesis? 40 A. No. 41 A. No. 42 (I we now along to the screenshot at (e), which is 43 in understanding it's identified by the large white 44 in understanding it's identified by the large white 45 in understanding it's identified by the large white	16		16	because the occupant of flat 9 spoke to the fire service
actually taken by Mr Kebede himself, is that right?  A. Yes.  Q. If I could ask Ralph to put up page 39 of your final report and figure 25.  First of all, can you confirm for us what these shots are?  A. These are still images taken from video material that  Page 17  was recovered from Mr Kebede's mobile telephone, and they are taken from outside of Grenfell Tower. Looking up towards flat 16.  Q. Can you help us, what can you deduce from these screenshots?  A. A. O. Can you help us, what can you deduce from these timing, and really what I was trying to capture was just the development of the fire around about the window of the kitchen of flat 16.  What appears to be happening is that the area around where the extractor fan is appears to be burning, and that as that burning is progressing, the fire is exiting arrow?  A. That's correct.  Q. If we move along to the screenshot at (e), which is time and 0.10.81.8, what does the top arrow indicate?  A. The middle arrow?  A. The middle arrow and the arrow beneath it are pointing of continuing and that as the initial fire started.  Page 19  other flats on the floors beneath floor 4, flat 9 was quite extensively damaged. It was then, therefore, important to be able to rule out flat 9, because it was lower, as a potential point of origin of the fire within the lower.  This ruled that out, as far as I was concerned, quite conclusively, because the occupant was in flat 9 after the fire had begun in flat 16.  Q. Have you seen any evidence since you completed your conclusion in respect of hypothesis 1 or gives rise to an alternative hypothesis?  A. That's correct.  Q. If we move along to the screenshot at (e), which is time and 0.10.81.8, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out from the window on the right-hand side of the window as you look up.  The fire was taking that it is indicating flames now starting to come out from the window on the right-hand side of the win	17	Professor, it looks from your report that the fourth	17	at 01:36:23 which was after the initial contact by
20 A. Yes. 21 Q. If I could ask Ralph to put up page 39 of your final 22 report and figure 25. 23 First of all, can you confirm for us what these 24 shots are? 25 A. These are still images taken from video material that 26 Page 17  1 was recovered from Mr Kebede's mobile telephone, and 27 they are taken from outside of Grenfell Tower. Looking 28 up towards flat 16. 29 Q. Can you help us, what can you deduce from these 30 screenshots? 30 A. So the videos follow a sequence, as you can see by the 41 timing, and really what I was trying to capture was just 42 the development of the fire around about the window of 43 the kitchen of flat 16. 44 Q. The kitchen of flat 16. 45 Q. The kitchen extractor fan is appears to be burning, and 46 Q. The kitchen extractor fan, if we look at (e), am I right 47 in understanding it's identified by the large white 48 in understanding it's identified by the large white 49 it mind at 01.08.18, what does the to parrow indicate? 40 A. The top arrow is — my interpretation of the photograph 40 is that it's indicating flames now starting to come out 41 from the window on the right-hand side of the window as 42 you look up. 43 vou look up. 44 A. Yes, and this was important because when the fire investigators at a later point examined some of the investigators at a later point examined some of the investigators at a later point examined some of the investigators at a later point examined some of the investigators at a later point examined some of the investigators at a later point examined some of the investigators at a later point examined some of the fire investigators at a later point examined some of the investigators at a later point examined some of the investigators at a later point examined some of the fire investigators at a later point of origin of the fire within the tensor to the flat 9 was quite extensively damaged. It was then, therefore, important to be able to rule out flat 9, wear of the fire investigators at later point of origin of the fire within the tensor to the flat 9 w	18	category of evidence you've relied upon is footage	18	Mr Behailu KEBEDE The occupier of flat 9 was
21   Q. If I could ask Ralph to put up page 39 of your final report and figure 25. 22   First of all, can you confirm for us what these 24 shots are? 23   A. These are still images taken from video material that 25   A. These are still images taken from video material that 26   Page 17   Page 19    1   was recovered from Mr Kebede's mobile telephone, and 22 they are taken from outside of Grenfell Tower. Looking 24 they are taken from outside of Grenfell Tower. Looking 25 up towards flat 16. 30   Q. Can you help us, what can you deduce from these 36 screenshots? 4   I lower, as a potential point of origin of the fire within the tower. 4   I lower, as a potential point of origin of the fire within the kitchen of flat 16. 4   Q. The kitchen of flat 16. 5   Q. Have you seen any evidence since you completed your 10   Have the extractor fan is appears to be burning, and 11   that as that burning is progressing, the fire is exiting 30   or beginning to exit outside of the kitchen of flat 16. 3   Q. The kitchen extractor fan, if we look at (c), and I right in understanding it's identified by the large white 3   Q. If we move along to the screenshot at (e), which is 3   timed at 01.08.18, what does the top arrow indicate? 4   Q. And the middle arrow? 4   Q. And the middle arrow? 4   Q. And the middle arrow and the arrow beneath it are pointing 40   Q. And the middle arrow and the arrow beneath it are pointing 41   Q. The middle arrow and the arrow beneath it are pointing 42   Q. And the middle arrow and the arrow beneath it are pointing 42   Q. And the middle arrow and the arrow beneath it are pointing 42   A. The middle arrow and the arrow beneath it are pointing 42   A. The middle arrow and the arrow beneath it are pointing 42   A. The middle arrow and the arrow beneath it are pointing 42   A. The middle arrow and the arrow beneath it are pointing 42   A. The middle arrow and the arrow beneath it are pointing 42   A. The middle arrow and the arrow beneath it are pointing 42   A. The middle arrow and the arrow beneath	19	actually taken by Mr Kebede himself; is that right?	19	reported as stating that;
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Page 17    was recovered from Mr Kebede's mobile telephone, and they are taken from outside of Grenfell Tower. Looking up towards flat 16.   Q. Can you help us, what can you deduce from these screenshots?   A. So the videos follow a sequence, as you can see by the timing, and really what I was trying to capture was just the development of the fire around about the window of the kitchen of flat 16.   What appears to be happening is that the area around where the extractor fan is appears to be burning, and that as that burning is progressing, the fire is exiting or beginning to exit outside of the kitchen of flat 16.   Q. The kitchen extractor fan, if we look at (c), am I right in understanding it's identified by the large white arrow?   A. That's correct.   Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?   A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out you look up.   Q. And the middle arrow?   A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. A. The middle arrow and the arrow beneath it are pointing   D. D. A. The middle arrow and the arrow beneath it are pointing   D.	24	shots are?	24	A. Yes, and this was important because when the fire
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timing, and really what I was trying to capture was just the development of the fire around about the window of the kitchen of flat 16.  What appears to be happening is that the area around where the extractor fan is appears to be burning, and that as that burning is progressing, the fire is exiting or beginning to exit outside of the kitchen of flat 16.  Q. The kitchen extractor fan, if we look at (c), am I right in understanding it's identified by the large white arrow?  A. That's correct.  Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out 21 professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	5	screenshots?	5	the tower.
the development of the fire around about the window of the kitchen of flat 16.  What appears to be happening is that the area around where the extractor fan is appears to be burning, and that as that burning is progressing, the fire is exiting or beginning to exit outside of the kitchen of flat 16.  Q. The kitchen extractor fan, if we look at (e), am I right in understanding it's identified by the large white arrow?  A. That's correct.  Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out you look up.  A. The middle arrow and the arrow beneath it are pointing  after the fire had begun in flat 16.  9. Q. Have you seen any evidence since you completed your report on 1 November 2018 which causes you materially to alter your conclusion in respect of hypothesis 1 or gives rise to an alternative hypothesis 1 or gives rise to an alternative hypothesis?  A. No.  Q. Turning to your conclusion and the strength of your confidence in relation to your conclusion on hypothesis 1, put simply, would you say it was certain, probable or likely that the initial fire started in the kitchen of flat 16?  A. In my view, it was certain.  Q. Thank you.  Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	6	A. So the videos follow a sequence, as you can see by the	6	This ruled that out, as far as I was concerned,
the kitchen of flat 16.  What appears to be happening is that the area around that as that burning is progressing, the fire is exiting or beginning to exit outside of the kitchen of flat 16.  Characteristic in understanding it's identified by the large white in understanding it's identified by the large white in understanding it's identified by the screenshot at (e), which is Characteristic is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out you look up.  A. The middle arrow and the arrow beneath it are pointing  The kitchen of flat 16.  9 Q. Have you seen any evidence since you completed your report on 1 November 2018 which causes you materially to alter your conclusion in respect of hypothesis 1 or gives rise to an alternative hypothesis?  A. No.  12 gives rise to an alternative hypothesis?  A. No.  13 A. No.  14 Q. Turning to your conclusion and the strength of your confidence in relation to your conclusion on hypothesis 1, put simply, would you say it was certain, probable or likely that the initial fire started in the kitchen of flat 16?  A. In my view, it was certain.  Q. Thank you.  Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	7	timing, and really what I was trying to capture was just	7	quite conclusively, because the occupant was in flat 9
What appears to be happening is that the area around where the extractor fan is appears to be burning, and that as that burning is progressing, the fire is exiting or beginning to exit outside of the kitchen of flat 16.  Q. The kitchen extractor fan, if we look at (c), am I right in understanding it's identified by the large white in understanding it's identified by the large white arrow?  A. That's correct.  Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out arrow?  A. The top arrow is — my interpretation of the window as you look up.  A. The middle arrow and the arrow beneath it are pointing  The protect on 1 November 2018 which causes you materially to alter your conclusion in respect of hypothesis 1 or alter your conclusion in respect of hypothesis?  A. No.  Q. Turning to your conclusion and the strength of your confidence in relation to your conclusion on hypothesis 1, put simply, would you say it was certain, probable or likely that the initial fire started in the kitchen of flat 16?  A. In my view, it was certain.  Q. Thank you.  Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	8	the development of the fire around about the window of	8	after the fire had begun in flat 16.
that as that burning is progressing, the fire is exiting or beginning to exit outside of the kitchen of flat 16.  Q. The kitchen extractor fan, if we look at (c), am I right in understanding it's identified by the large white arrow?  A. That's correct.  Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out you look up.  Q. And the middle arrow and the arrow beneath it are pointing  alter your conclusion in respect of hypothesis 1 or gives rise to an alternative hypothesis?  A. No.  12 gives rise to an alternative hypothesis?  A. No.  13 A. No.  14 Q. Turning to your conclusion and the strength of your confidence in relation to your conclusion on hypothesis 1, put simply, would you say it was certain, probable or likely that the initial fire started in the kitchen of flat 16?  A. In my view, it was certain.  Q. Thank you.  Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	9	the kitchen of flat 16.	9	Q. Have you seen any evidence since you completed your
that as that burning is progressing, the fire is exiting or beginning to exit outside of the kitchen of flat 16.  Q. The kitchen extractor fan, if we look at (c), am I right in understanding it's identified by the large white arrow?  A. That's correct.  Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out from the window on the right-hand side of the window as you look up.  Q. And the middle arrow and the arrow beneath it are pointing  12 gives rise to an alternative hypothesis?  A. No.  13 A. No.  14 Q. Turning to your conclusion and the strength of your confidence in relation to your conclusion on hypothesis 1, put simply, would you say it was certain, probable or likely that the initial fire started in the kitchen of flat 16?  A. In my view, it was certain.  Q. Thank you.  Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	10	What appears to be happening is that the area around	10	report on 1 November 2018 which causes you materially to
or beginning to exit outside of the kitchen of flat 16.  Q. The kitchen extractor fan, if we look at (c), am I right in understanding it's identified by the large white confidence in relation to your conclusion on hypothesis 1, put simply, would you say it was certain, probable or likely that the initial fire started in the kitchen of flat 16?  A. That's correct.  Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out from the window on the right-hand side of the window as you look up.  Q. And the middle arrow?  A. The middle arrow and the arrow beneath it are pointing  A. No.  A. No.  A. No.  14  Q. Turning to your conclusion and the strength of your confidence in relation to your conclusion and the strength of your confidence in relation to your conclusion and the strength of your confidence in relation to your conclusion and the strength of your confidence in relation to your conclusion and the strength of your confidence in relation to your conclusion and the strength of your conclus	11	where the extractor fan is appears to be burning, and	11	alter your conclusion in respect of hypothesis 1 or
Q. The kitchen extractor fan, if we look at (c), am I right in understanding it's identified by the large white arrow?  A. That's correct.  Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out you look up.  Q. And the middle arrow and the arrow beneath it are pointing  14 Q. Turning to your conclusion and the strength of your confidence in relation to your conclusion on hypothesis 1, put simply, would you say it was certain, probable or likely that the initial fire started in the kitchen of flat 16?  A. In my view, it was certain.  Q. Thank you.  Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	12	that as that burning is progressing, the fire is exiting	12	gives rise to an alternative hypothesis?
in understanding it's identified by the large white arrow?  16 arrow? 17 A. That's correct. 18 Q. If we move along to the screenshot at (e), which is 19 timed at 01.08.18, what does the top arrow indicate? 20 A. The top arrow is — my interpretation of the photograph 21 is that it's indicating flames now starting to come out 22 from the window on the right-hand side of the window as 23 you look up. 24 Q. And the middle arrow? 25 A. The middle arrow and the arrow beneath it are pointing 26 confidence in relation to your conclusion on 17 hypothesis 1, put simply, would you say it was certain, 18 kitchen of flat 16? 19 A. In my view, it was certain. 20 Q. Thank you. 21 Professor, we're now going to turn to hypothesis 2, 22 and that's the location within the kitchen where you 23 consider the initial fire started. 24 Ralph, could I ask you to turn to page 68 of the 25 final report and paragraph 8.8.16.	13	or beginning to exit outside of the kitchen of flat 16.	13	A. No.
16 arrow?  17 A. That's correct.  18 Q. If we move along to the screenshot at (e), which is 19 timed at 01.08.18, what does the top arrow indicate?  20 A. The top arrow is — my interpretation of the photograph 21 is that it's indicating flames now starting to come out 22 from the window on the right-hand side of the window as 23 you look up.  24 Q. And the middle arrow?  25 A. The middle arrow and the arrow beneath it are pointing  16 hypothesis 1, put simply, would you say it was certain, 27 probable or likely that the initial fire started in the 28 kitchen of flat 16?  A. In my view, it was certain. 29 Q. Thank you. 20 Professor, we're now going to turn to hypothesis 2, 21 and that's the location within the kitchen where you 23 consider the initial fire started. 24 Ralph, could I ask you to turn to page 68 of the 25 final report and paragraph 8.8.16.	14	Q. The kitchen extractor fan, if we look at (c), am I right	14	Q. Turning to your conclusion and the strength of your
A. That's correct.  Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out you look up.  Q. And the middle arrow?  A. The middle arrow and the arrow beneath it are pointing  17 probable or likely that the initial fire started in the kitchen of flat 16?  A. In my view, it was certain.  Q. Thank you.  Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	15	in understanding it's identified by the large white	15	confidence in relation to your conclusion on
A. That's correct.  Q. If we move along to the screenshot at (e), which is timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out you look up.  Q. And the middle arrow?  A. The middle arrow and the arrow beneath it are pointing  17 probable or likely that the initial fire started in the kitchen of flat 16?  A. In my view, it was certain.  Q. Thank you.  Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	16	arrow?	16	hypothesis 1, put simply, would you say it was certain,
timed at 01.08.18, what does the top arrow indicate?  A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out from the window on the right-hand side of the window as you look up.  Q. And the middle arrow?  A. In my view, it was certain.  Q. Thank you.  Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started.  Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	17	A. That's correct.	17	
A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out from the window on the right-hand side of the window as you look up.  Q. And the middle arrow?  A. The middle arrow and the arrow beneath it are pointing  20 Q. Thank you. Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started. Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	18	Q. If we move along to the screenshot at (e), which is	18	kitchen of flat 16?
A. The top arrow is — my interpretation of the photograph is that it's indicating flames now starting to come out from the window on the right-hand side of the window as you look up.  Q. And the middle arrow?  A. The middle arrow and the arrow beneath it are pointing  20 Q. Thank you. Professor, we're now going to turn to hypothesis 2, and that's the location within the kitchen where you consider the initial fire started. Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	19	timed at 01.08.18, what does the top arrow indicate?	19	A. In my view, it was certain.
from the window on the right-hand side of the window as you look up.  23 you look up.  24 Q. And the middle arrow?  25 A. The middle arrow and the arrow beneath it are pointing  26 and that's the location within the kitchen where you consider the initial fire started.  27 Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	20	A. The top arrow is my interpretation of the photograph	20	
from the window on the right-hand side of the window as you look up.  23 you look up.  24 Q. And the middle arrow?  25 A. The middle arrow and the arrow beneath it are pointing  26 and that's the location within the kitchen where you consider the initial fire started.  27 Ralph, could I ask you to turn to page 68 of the final report and paragraph 8.8.16.	21	is that it's indicating flames now starting to come out	21	Professor, we're now going to turn to hypothesis 2,
24 Q. And the middle arrow? 24 Ralph, could I ask you to turn to page 68 of the 25 A. The middle arrow and the arrow beneath it are pointing 25 final report and paragraph 8.8.16.	22	from the window on the right-hand side of the window as	22	
25 <b>A.</b> The middle arrow and the arrow beneath it are pointing 25 final report and paragraph 8.8.16.	23	you look up.	23	consider the initial fire started.
25 <b>A.</b> The middle arrow and the arrow beneath it are pointing 25 final report and paragraph 8.8.16.	24	Q. And the middle arrow?	24	Ralph, could I ask you to turn to page 68 of the
Page 18 Page 20	25	A. The middle arrow and the arrow beneath it are pointing	25	
Page 18 Page 20		D 40		D 00
		Page 18		Page 20

Professor, you set out there and I quote:			Т	
timeges from the thermal camera indicate that it is more tikely than not that the area of origin of the fire was to in the southeast area of the kitchen in flat 16. This to it illustrated in figure 56 and photographically in figure 57." First of all, does that remain your view? A. Yes.  O, If I could ask Ralph to turn to page 69 and figure 56, first of all, does that remain your view? A. Yes.  O, If I could ask Ralph to turn to page 69 and figure 56, first of all, does that remain your view? A. Yes.  O, If I could ask Ralph to turn to page 69 and figure 56, A. Yes.  I could ask Ralph to turn to page 69 and figure 56, A. Yes.  I could ask Ralph to turn to page 69 and figure 56, A. Yes.  I could ask that is the layout of the kitchen, and at the south-east end	1	Professor, you set out there and I quote:	1	Q the sink
to it, we have the possible kettle.  in the southeast area of the kitchen in flat 16. This is illustrated in figure 56 and photographically in figure 57.  First of all, does that ternain your view?  A. Yes.  O, If I could ask Ralph to turn to page 69 and figure 56, first of all.  We've looked at this earlier, but do you confirm that that is the layout of the kitchen, and at the south-cast end —  14 south-cast end —  15 A. Yes.  16 Q shaded red, is the area of origin?  A. Ves.  17 A. Ves.  18 Q. Thank you.  19 A. Could I just clarify that?  O, Sarry.  20 Q. Sorry.  21 A. I think that the shaded red area I would say contains the area of origin.  22 Before I go to the next photo, I should give a warning that people may find it distressing. It shows  Dage 21  1 the seene of the kitchen after the fire.  Ralph, could l ask you to turn to figure 57 at page 69.  A. That's correct.  1 area of origin.  This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right?  A. That's correct exposed the process of the final process of the first of all, does that ternain or of the same and the location of matters, starting at the far left-hand side we have the kitchen without.  A Yes.  O, So people can understand the location of matters, starting at the far left-hand side we have the kitchen without.  A Yes.  O, A we move rightwards, we have the old freezer.  A. Yes.  O, - a bin -  A. Yes.  O, - a babin -  A. Yes.  O, - a washing machine -  A. Yes.  O, - a washing machine -  A. Yes.  Co, - a washing machine -  Co, - a washing machine -  A. Yes.  Co, - a washing machine -  A. Yes.  Co, - a washing machine -  Co, - a wash	2	"8.8.16. The evidence of the fire fighters and the	2	A. Yes.
5 in the southeast area of the kitchen in fat 16. This 6 is illustrated in figure 56 and photographically in 6 7 figure 57." 8 First of all, does that remain your view? 9 A. Yes. 10 Q. If I could ask Ralph to turn to page 69 and figure 56, 11 first of all. 12 We've looked at this earlier, but do you confirm 13 that that is the liquout of the kitchen, and at the 14 south-east end— 15 A. Yes. 16 Q shaded red, is the area of origin? 17 A. Yes. 18 Q. Thank you. If we could turn— 19 A. Could I just clarify that? 20 Q. Sorry. 21 A. I think that the shaded red area I would say contains the area of origin. 22 the area of origin. 23 Q. Thank you. 24 Before I go to the next photo, I should give a warning that people may find it distressing. It shows 25 that right? 25 a warning that people may find it distressing. It shows 26 that contains the area of origin is again shaded red; is that right? 26 A. That's correct, yes. 27 Q. Then in the foreground we have the old freezer. 28 Q. So people can understand the location of matters, starting at the fair left-hand side we have the kitchen window. 29 When the fair left left left left left left left left	3	images from the thermal camera indicate that it is more	3	Q and in the corner, next to the sink, immediately next
6 is illustrated in figure 56 and photographically in figure 57? 7 ifigure 57? 8 First of all, does that remain your view? 9 A. Yes. 9 A. Yes. 10 Q. If I could ask Ralph to turn to page 69 and figure 56, first of all. 11 We've looked at this earlier, but do you confirm 12 We've looked at this earlier, but do you confirm 13 that that is the layout of the kitchen, and at the south-east end - 14 south-east end - 15 A. Yes. 16 Q shaded red, is the area of origin? 17 A. Yes. 18 Q. Thank you. If we could turn - 19 A. Could I just clarify that? 20 Q. Sorry. 21 A. I think that the shaded red area I would say contains the area of origin. 22 Q. Thank you. 23 Before I go to the next photo, I should give a warning that people may find it distressing. It shows 24 Before I go to the next photo, I should give a warning that people may find it distressing. It shows 25 a warning that people may find it distressing. It shows 26 Page 27  1 the scene of the kitchen after the fire. 2 Ralph, could l ask you to turn to figure 57 at page 69. 3 This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right? 3 A. Yes. 3 Q. Then in the foreground we have the kitchen window. 4 A. Yes. 4 Q. And below it, the small fridge. 5 A. Yes. 6 Q. Habin id i, we have the all fridge freezer. 7 A. Yes. 7 A. Yes. 8 Q. And below it, the small fridge. 9 A. Yes. 9 A. Yes. 11 First of all. 12 A. Yes. 12 Q a washing machine - 13 A. Yes. 14 A. Yes. 15 A. Yes. 16 Q a washing machine - 17 A. Yes. 18 Q a washing machine - 28 A. Yes. 29 Q a washing machine - 29 A. Yes. 20 Q a washing machine - 20 A. Yes. 21 Sharing a the far left-hand side we have the cooker - 22 Left of the fidge freezer and window and the fridge side. and underneatif 29 G a washing machine - 20 G a washing machine - 21 Sharing at the far left of the fidge freezer. 20 G a washing machine - 21 Sharing at the far left of the fidge freezer. 21 Sharing at the far left of the fidge freezer. 22 G a washing machi	4	likely than not that the area of origin of the fire was	4	to it, we have the possible kettle.
First of all, does that remain your view?  9	5	in the southeast area of the kitchen in flat 16. This	5	A. Yes.
First of all, does that remain your view?  A. Yes.  O. If I could ask Ralph to turn to page 69 and figure 56, first of all.  We've looked at this earlier, but do you confirm that that is the layout of the kitchen, and at the south-east end —  A. Yes.  O. — shaded red, is the area of origin?  A. Yes.  O. Sorry.  A. I think that the shaded red area I would say contains the area of origin is again shaded red; is that contains the area of origin is again shaded red; is that contains the area of origin is again shaded red; is that contains the area of origin is again shaded red; is that contains the area of origin is again shaded red; is that a fair saw moke. It seemed to be coming from behind my dow.  Thank you.  Thank you.  Page 21  Thank you.  A. Think is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that a fair summary?  A. Thank you to turn to figure 57 at page 69.  Thank you.  Page 21  Thank you.  Page 23  Page 23  Thank you.  A. Thank you there are of origin is again shaded red; is that a fair summary?  A. Thank you.  Page 21  Thank you. If we evidence of Mr Kebede; is that a fair summary?  A. I think that the shaded red area I would say contains the area of origin.  Thank you.  Thank you. If we evidence of Mr Kebede; is that a fair summary?  A. I think that the shaded red area I would say contains the area of origin.  Thank you. If we evidence of Mr Kebede; is that a fair summary?  Thank you.  Thank you. The we do define.  Thank you there are of origin again shaded red area I would say contains the area of origin is again shaded red; is that a fair summary?  The smoke was rising up from floor level and coming towards me  The smoke was rising up from floor level and coming towards me  The smoke was rising up from floor level and coming towards me  The smoke was rising up from floor level and coming towards me  The smoke was approximately too the fire flever and had reached about where the cooker was  The also described the smoke as both	6	is illustrated in figure 56 and photographically in	6	Q. And against the far right-hand wall, the microwave?
A. Yes.  9 As with hypothesis 1, can I now turn to the evidence you've relied upon for reaching your conclusion in respect of hypothesis 2.  11 Each of all.  12 We've looked at this earlier, but do you confirm 13 that that is the layout of the kitchen, and at the south-east end 14 south-east end 15 A. Yes.  15 A. Yes.  16 Q shaded red, is the area of origin?  17 A. Ves.  18 Q. Thank you. If we could turn 19 A. Could I just clarify that?  20 Q. Sorry.  21 A. I think that the shaded red area I would say contains the area of origin.  22 Thank you. If we could use 19 Page 21  23 Q. Thank you.  24 Before I go to the next photo, I should give a warning that people may find it distressing. It shows  25 Page 21  1 the scene of the kitchen after the fire.  2 Ralph, could I ask you to turn to figure 57 at page 69.  3 Page 69.  4 This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right?  5 A. Yes.  9 O. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  10 A. Yes.  11 A. Yes.  12 Q. Then in the foreground we have the old freezer.  13 A. Yes.  14 Q. And below it, the small fridge.  15 A. Yes.  16 Q. Behind it, we have the tall fridge freezer.  17 A. Yes.  28 Q. Behind it, we have the tall fridge freezer.  19 A. Yes.  20 Q a bin  21 A. Yes.  21 Q a possible toaster  22 A. Yes.  23 A. Yes.  24 Q a washing machine  25 A. Yes.  26 Q a washing machine  27 A. Yes.  28 The smoke was can proximately the incorporate washing machine  28 A. Yes.  29 Q a washing machine  29 Q a washing machine  20 Q a washing machine  21 A. Yes.  22 Q a washing machine  23 A. Yes.  24 G a washing machine  25 A. Yes.  26 Q a washing machine  27 A. Yes.  28 The smoke at the first end understand the location of matters, starting at the far left-hand side we have the cooker  19 A. Yes.  20 Q a washing machine  21 A. Yes.  22 Q a washing machine	7	figure 57."	7	A. That's correct.
Q. If I could ask Ralph to turn to page 69 and figure 56, first of all We've looked at this earlier, but do you confirm that that is the layout of the kitchen, and at the south-east end —	8	First of all, does that remain your view?	8	Q. Thank you.
11	9	A. Yes.	9	As with hypothesis 1, can I now turn to the evidence
that that is the layout of the kitchen, and at the south-east end - 14 south-east end - 14 south-east end - 14 south-east end - 15 A. Yes. 15 A. Yes. 16 Q shaded red, is the area of origin? 17 A. Yes. 17 A. Yes. 17 A. Yes. 18 Q. Thank you. If we could turn - 18 A. Cull I just clarify that? 19 Yes.	10	Q. If I could ask Ralph to turn to page 69 and figure 56,	10	you've relied upon for reaching your conclusion in
that that is the layout of the kitchen, and at the south-east end —  14 south-east end —  15 A. Yes.  16 Q. — shaded red, is the area of origin?  17 A. Yes.  18 Q. Thank you. If we could turn —  18 Q. Thank you. If we could turn —  19 A. Could I just clarify that?  20 Q. Sory.  21 A. I think that the shaded red area I would say contains the area of origin.  22 Thank you.  23 Q. Thank you.  24 Before I go to the next photo, I should give a warming that people may find it distressing. It shows  25 Page 21  26 The seene of the kitchen after the fire.  27 Ralph, could I ask you to turn to figure 57 at page 69.  28 This is a photograph of the kitchen, and the area of that contains the area of origin is again shaded red, is that the different page 69.  40 This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red, is that right?  51 A. Yes.  52 Q. Then in the foreground we have the kitchen owindow.  53 A. Yes.  54 Q. And below it, the small fridge.  54 A. Correct.  55 A. Correct.  56 Q. — a bin —  57 A. Yes.  58 Q. — a washing machine —  59 A. Yes.  50 Q. — a washing machine —  50 A. Yes.  51 A. Yes.  52 Q. — a washing machine —  53 A. Yes.  54 Q. — a washing machine —  55 A. Yes.  55 A. Yes.  56 That would be fair.  56 Q. Ralph, if I could ask you to turn to page 65 of the final report, and paragraph 8.8.5.  56 The flow if so, You to turn to page 65 of the final report, and paragraph 8.8.5.  56 The flow is the was wakened by the smoke last of Grenfell Tower reports that he was wakened by the smoke last of Grenfell Tower reports that he was wakened by the smoke last of Grenfell Tower reports that he was wakened by the smoke last of Grenfell Tower reports that he was wakened by the smoke last of Grenfell Tower reports that he was wakened by the smoke last of Grenfell Tower reports that he was wakened by the smoke last of Grenfell Tower reports that he was wakened by the smoke last of Grenfell Tower reports that he was wakened by the smoke last of Grenfell Tower reports that	11	first of all.	11	respect of hypothesis 2.
14   south-east end	12	We've looked at this earlier, but do you confirm	12	Again, the first source of evidence relied upon
15	13	that that is the layout of the kitchen, and at the	13	appears to be the evidence of Mr Kebede; is that a fair
16   Q. — shaded red, is the area of origin?   16   Q. Ralph, if I could ask you to turn to page 65 of the final report, and paragraph 8.8.5. I'll read this out. You say there, and I quote: "8.8.5. Mr Behailu KEBEDE who occupied flat 16 at Grenfell Tower reports that he was wakened by the smoke alarm in his kitchen were there into the kitchen with the area of origin.   22   23   4. I think that the shaded red area I would say contains the area of origin.   24   25   26   27   28   27   29   29   29   29   29   29   29	14	south-east end	14	summary?
17	15	A. Yes.	15	A. Yes, that would be fair.
18   Q. Thank you. If we could turn -	16	Q shaded red, is the area of origin?	16	Q. Ralph, if I could ask you to turn to page 65 of the
19   A. Could I just clarify that?   20   Corry.	17	A. Yes.	17	final report, and paragraph 8.8.5.
20 Q. Sorry. 21 think that the shaded red area I would say contains 22 the area of origin. 22 Thank you. 23 Q. Thank you. 24 Before I go to the next photo, I should give 25 a warning that people may find it distressing. It shows  Page 21  26 Think is a photograph of the kitchen, and the area 27 that contains the area of origin is again shaded red, is 28 that right? 29 A. That's correct, yes. 30 Q. So people can understand the location of matters, 31 starting at the far left-hand side we have the kitchen 32 wind where the cooker window. 33 In the foreground we have the old freezer. 34 A. Yes. 35 Q. And below it, the small fridge. 36 A. Ves. 37 A. Yes. 38 Q. As we move rightwards, we have the cooker — 38 Q. As we move rightwards, we have the cooker — 40 A. Yes. 41 Q. — a bin — 42 A. Yes. 43 Q. — a washing machine — 44 Is that the shaded red area I would say contains smoke alarm in his kitchen. He went into the kitchen wind with the string has the door from the hallway) and stated that; 42 "It could see light coloured smoke in the area next to the fridge/freezer and window. It was in the general page 23  25 a. Yes.  26 This is a photograph of the kitchen, and the area there' 'the smoke was rising up from floor level and coming towards me' '21 area there' 'the smoke was rising up from floor level and coming towards me' '22 work in the general page 69.  26 area there' 'the smoke was rising up from floor level and coming towards me' '23 wand.  27 ''I saw smoke. It seemed to be coming from behind my Hotopint fridge freezer. The smoke was approximately two thirds of the height of the fridge freezer and had reached about where the cooker was' '24 work interview and the cooker was' '25 mand.  28 ''He also described the smoke as 'Phank was in the record of interview dated 14'06/2017 '27 and.  29 ''He smoke that I saw in my kitchen was light and white in colour. I am aware that in my first and second policie interviews and I clearly needed one. When I said "dark". It is important to reme	18	Q. Thank you. If we could turn	18	I'll read this out. You say there, and I quote:
21 A. I think that the shaded red area I would say contains the area of origin. 22 Q. Thank you. 23 Before I go to the next photo, I should give a warning that people may find it distressing. It shows  Page 21  24 The scene of the kitchen after the fire. 25 Ralph, could I ask you to turn to figure 57 at page 69. 4 This is a photograph of the kitchen, and the area of that contains the area of origin is again shaded red; is that right?  A. That's correct, yes.  Q. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  A. Yes.  Q. Then in the foreground we have the old freezer.  A. Yes.  Q. And below it, the small fridge.  A. Yes.  Q. As we move rightwards, we have the cooker— A. Yes.  Q. C. a possible toaster—  A. Yes.  Q a possible toaster—  A. Yes.  Q a washing machine—  A. Yes.  21 Is the main door (this was the door from the hallway) and stated that: via the main door (this was the door from the hallway) and stated that: via the main door (this was the door from the hallway) and stated that: via the main door (this was the door from the hallway) and stated that: "I could see light coloured smoke in the area next to the fridge/freezer and window. It was in the general  Page 23  1 area there' 'the smoke was rising up from floor level and coming towards me'  2 area there' 'the smoke was rising up from floor level and coming towards me'  3 area there' 'the smoke was rising up from floor level and coming towards me'  4 area there' 'the smoke was rising up from floor level and coming towards me'  4 area there' 'the smoke was rising up from floor level and coming towards me'  4 area there' 'the smoke was rising up from floor level and coming towards me'  4 area there' 'the smoke was rising up from floor level and coming towards me'  4 area there' 'the smoke was rising up from floor level	19	A. Could I just clarify that?	19	"8.8.5. Mr Behailu KEBEDE who occupied flat 16
the area of origin.  Q. Thank you.  Page 21  the scene of the kitchen after the fire.  Ralph, could I ask you to turn to figure 57 at page 69.  This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right?  A. That's correct, yes.  Q. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  A. Yes.  Q. Then in the foreground we have the old freezer.  A. Yes.  Q. Sa we move rightwards, we have the cooker—  A. Yes.  Q. Sa we move rightwards, we have the cooker—  A. Yes.  Q. — a possible toaster—  2. Via the main door (this was the door from the hallway) and stated that;  "I could see light coloured smoke in the area next to the fridge freezer and window. It was in the general  Page 23  1 area there', 'the smoke was rising up from floor level and coming towards me'  "and,  "I saw smoke. It seemed to be coming from behind my Hotpoint fridge freezer. The smoke was approximately two thirds of the height of th	20	Q. Sorry.	20	at Grenfell Tower reports that he was wakened by the
23 and stated that; 24 Before I go to the next photo, I should give a warning that people may find it distressing. It shows  Page 21  25 Page 23  26 Page 25  27 Page 25  28 Ralph, could I ask you to turn to figure 57 at page 69. 29 This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right? 20 A. That's correct, yes. 30 Q. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window. 11 A. Yes. 12 Q. Then in the foreground we have the old freezer. 13 A. Yes. 14 Q. And below it, the small fridge. 15 A. Yes. 16 Q. So we only e table with the small fridge freezer. 17 A. Yes. 18 Q. So we move rightwards, we have the cooker 19 A. Yes. 20 Q a possible toaster 21 A. Yes. 21 Q a washing machine 22 A. Yes. 23 and stated that; 24 "Toould see light coloured smoke in the area next to the fridge flept of the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window. It was in the general to the fridge freezer and window and the grad area there' 'the smoke was rising up from floor level and coming towards me'  21 area there' 'the smoke was rising up from floor level and coming towards me'  22 area there' 'the smoke was rising up from floor level and coming towards me'  23 and,  24 area there' 'the smoke was rising up from floor level and coming towards me'  24 area there' 'the smoke was rising up	21	A. I think that the shaded red area I would say contains	21	smoke alarm in his kitchen. He went into the kitchen
Before I go to the next photo, I should give a warning that people may find it distressing. It shows  Page 21  1 the scene of the kitchen after the fire. 2 Ralph, could I ask you to turn to figure 57 at page 69. 4 This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right?  A. That's correct, yes. 8 Q. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window. 11 A. Yes. 12 Q. Then in the foreground we have the old freezer. 13 A. Yes. 14 Q. And below it, the small fridge. 15 A. Correct. 16 Q. Behind it, we have the tall fridge freezer. 17 A. Yes. 18 Q. As we move rightwards, we have the cooker— 19 A. Yes. 20 Q. — a bin — 21 A. Yes. 21 Q. — a possible toaster— 22 Q. — a possible toaster— 23 A. Yes. 24 Q. — a washing machine— 25 A. Yes. 26 Q. — a washing machine— 27 A. Yes. 28 Q. — a washing machine— 29 A. Yes. 20 Q. — a washing machine— 20 A. Yes. 21 Is that the pertinent extracts of evidence that you relied upon in relation to your conclusions—	22	the area of origin.	22	via the main door (this was the door from the hallway)
Page 21  The scene of the kitchen after the fire. Ralph, could I ask you to turn to figure 57 at page 69. This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right?  A. That's correct, yes. Q. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  A. Yes.  A. Yes.  Q. And below it, the small fridge. A. Yes.  Q. As we move rightwards, we have the cooker A. Yes.  Q. As we move rightwards, we have the cooker A. Yes.  Q. A swe move rightwards, we have the cooker A. Yes.  Q. A a washing machine  A. Yes.  Q a possible toaster  23 A. Yes.  Q a washing machine  A. Yes.  25 to the fridge/freezer and window. It was in the general  Page 23  Raea there'' the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  area there' 'the smoke was rising up from floor level and coming towards me'  "Tasw smoke. It seemed to be coming from behind my Hotopint fridge freezer. The smoke was approximately two thirds of the height of the	23	Q. Thank you.	23	and stated that;
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the scene of the kitchen after the fire. Ralph, could I ask you to turn to figure 57 at page 69. This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right?  A. That's correct, yes.  So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  The in the foreground we have the old freezer.  A. Yes.  O. And below it, the small fridge.  A. Correct.  O. Behind it, we have the tall fridge freezer.  A. Yes.  O. As we move rightwards, we have the cooker A. Yes.  O. As we move rightwards, we have the cooker A. Yes.  O. A Yes.  O. A Yes.  O. The in the foreground we have the cooker A. Yes.  O. Behind it, we have the tall fridge freezer.  A. Yes.  O. A swe move rightwards, we have the cooker A. Yes.  O. A yes.  O. A rea bin  O. A a washing machine  A. Yes.  In the smoke was rising up from floor level and coming towards me'  I same there' 'the smoke be to coming from behind my Hotpoint fridge freezer. The smoke was approximately two thirds of the height of the height of the fridge freezer and had reached about where the cooker was  I'le adsocribed the smoke as approximately two thirds of the height of the fridge freezer.  I'le and,  I'le and coming towards me'  I'le and coming toward	25	a warning that people may find it distressing. It shows	25	to the fridge/freezer and window. It was in the general
the scene of the kitchen after the fire. Ralph, could I ask you to turn to figure 57 at page 69. This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right?  A. That's correct, yes.  So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  The in the foreground we have the old freezer.  A. Yes.  O. And below it, the small fridge.  A. Correct.  O. Behind it, we have the tall fridge freezer.  A. Yes.  O. As we move rightwards, we have the cooker A. Yes.  O. As we move rightwards, we have the cooker A. Yes.  O. A Yes.  O. A Yes.  O. The in the foreground we have the cooker A. Yes.  O. Behind it, we have the tall fridge freezer.  A. Yes.  O. A swe move rightwards, we have the cooker A. Yes.  O. A yes.  O. A rea bin  O. A a washing machine  A. Yes.  In the smoke was rising up from floor level and coming towards me'  I same there' 'the smoke be to coming from behind my Hotpoint fridge freezer. The smoke was approximately two thirds of the height of the height of the fridge freezer and had reached about where the cooker was  I'le adsocribed the smoke as approximately two thirds of the height of the fridge freezer.  I'le and,  I'le and coming towards me'  I'le and coming toward				
2 Ralph, could I ask you to turn to figure 57 at 3 page 69. 4 This is a photograph of the kitchen, and the area 5 that contains the area of origin is again shaded red; is 6 that right? 6 A. That's correct, yes. 7 Q. So people can understand the location of matters, 8 starting at the far left-hand side we have the kitchen 9 window. 10 window. 11 A. Yes. 12 Q. Then in the foreground we have the old freezer. 13 A. Yes. 14 Q. Behind it, we have the tall fridge freezer. 15 A. Yes. 16 Q. Sa we move rightwards, we have the cooker 17 A. Yes. 18 Q a possible toaster 28 A. Yes. 29 Q a washing machine 20 A. Yes. 20 Q a washing machine 21 A. Yes. 20 Q a washing machine 21 A. Yes. 21 Level and coming towards me' 3 "and, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that who there the height of the fridge freezer. The smoke but the firidge freezer and had reached about where the cooker was approximately to two thirds of the height of the fridge freezer. The smoke but the smoke as bortwing that had had reached about where the cooker was approximately to two thirds of the height of the fridge freezer. The smoke but the smoke as sort in the reached about where the cooker was approximately to two thirds of the height of the bridge freezer.  10 I saw sack as a series of two had a mand and and and and and and and and and		Page 21		Page 23
2 Ralph, could I ask you to turn to figure 57 at 3 page 69. 4 This is a photograph of the kitchen, and the area 5 that contains the area of origin is again shaded red; is 6 that right? 6 A. That's correct, yes. 7 Q. So people can understand the location of matters, 8 starting at the far left-hand side we have the kitchen 9 window. 10 window. 11 A. Yes. 12 Q. Then in the foreground we have the old freezer. 13 A. Yes. 14 Q. Behind it, we have the tall fridge freezer. 15 A. Yes. 16 Q. Sa we move rightwards, we have the cooker 17 A. Yes. 18 Q a possible toaster 28 A. Yes. 29 Q a washing machine 20 A. Yes. 20 Q a washing machine 21 A. Yes. 20 Q a washing machine 21 A. Yes. 21 Level and coming towards me' 3 "and, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that mand, "I saw smoke. It seemed to be coming from behind that who there the height of the fridge freezer. The smoke but the firidge freezer and had reached about where the cooker was approximately to two thirds of the height of the fridge freezer. The smoke but the smoke as bortwing that had had reached about where the cooker was approximately to two thirds of the height of the fridge freezer. The smoke but the smoke as sort in the reached about where the cooker was approximately to two thirds of the height of the bridge freezer.  10 I saw sack as a series of two had a mand and and and and and and and and and	1	the scene of the kitchen after the fire	1	area there! 'the smoke was rising un from floor
page 69. This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right?  A. That's correct, yes. Q. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  A. Yes. Q. Then in the foreground we have the old freezer. A. Yes. Q. And below it, the small fridge. A. Correct. Q. Behind it, we have the tall fridge freezer. A. Yes. Q. As we move rightwards, we have the cooker A. Yes. Q. As we move rightwards, we have the cooker A. Yes. Q a possible toaster A. Yes. Q a washing machine  A. Yes. Q a washing machine  25 A. Yes.  3				
This is a photograph of the kitchen, and the area that contains the area of origin is again shaded red; is that right?  A. That's correct, yes.  Q. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  A. Yes.  Q. Then in the foreground we have the old freezer.  A. Correct.  Q. And below it, the small fridge.  A. Correct.  Q. Behind it, we have the tall fridge freezer.  A. Yes.  Q. As we move rightwards, we have the cooker—  A. Yes.  Q. As we move rightwards, we have the cooker—  A. Yes.  Q. — a bin —  Q. — a washing machine —  A. Yes.  Q. — a washing machine —  A. Yes.  A. Yes.  Q. — a washing machine —  A. Yes.  A. Yes.  Q. — a washing machine —  A. Yes.  A. Yes.  Q. — a washing machine —  A. Yes.  A. Yes.  Q. — a washing machine —  A. Yes.				
that contains the area of origin is again shaded red; is that right?  A. That's correct, yes.  Q. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  A. Yes.  Q. Then in the foreground we have the old freezer.  A. Yes.  Q. Behind it, we have the tall fridge freezer.  A. Yes.  Q. As we move rightwards, we have the cooker  A. Yes.  Q a possible toaster  A. Yes.  D. A. Yes.  A. Yes.  C a washing machine  A. Yes.  D. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  The also described the smoke as "dark', 'light dark' or 'light' in the record of interview dated 14/06/2017  "and,  "The smoke that I saw in my kitchen was light and white in colour. I am aware that in my first and second police interviews I described the smoke as both "light"  and "dark". It is important to remember that I had just had the most frightening experience of my life and was in shock. I also did not have an interpreter during these two interviews and I clearly needed one. When I said "dark", I did not mean dark in colour. I meant thick'  20 Q a bin  21 A. Yes.  22 Q a possible toaster  23 A. Yes.  24 Q a washing machine  25 A. Yes.  26 Yes.  27 Is that the pertinent extracts of evidence that you relied upon in relation to your conclusions		* <del>*</del>		,
that right?  A. That's correct, yes.  Q. So people can understand the location of matters, starting at the far left-hand side we have the kitchen window.  A. Yes.  Q. Then in the foreground we have the old freezer.  A. Yes.  Q. Behind it, we have the tall fridge freezer.  A. Yes.  Q. As we move rightwards, we have the cooker  A. Yes.  Q a bin  Q a washing machine  A. Yes.  Correct.  A. Yes.  Correct.  Corr				
7 reached about where the cooker was' 8 Q. So people can understand the location of matters, 9 starting at the far left-hand side we have the kitchen 10 window. 11 A. Yes. 12 Q. Then in the foreground we have the old freezer. 13 A. Yes. 14 Q. And below it, the small fridge. 15 A. Correct. 16 Q. Behind it, we have the tall fridge freezer. 17 A. Yes. 18 "He also described the smoke as "dark', 'light dark' or 'light' in the record of interview dated 14/06/2017 19 A. Yes. 10 "and, ""The smoke that I saw in my kitchen was light and white in colour. I am aware that in my first and second police interviews I described the smoke as both "light" and "dark". It is important to remember that I had just had the most frightening experience of my life and was in shock. I also did not have an interpreter during these two interviews and I clearly needed one. When I said "dark", I did not mean dark in colour. I meant thick' 19 A. Yes. 20 Q a bin 21 A. Yes. 21 "and, "a		— — — — — — — — — — — — — — — — — — —		
8 Q. So people can understand the location of matters, 9 starting at the far left-hand side we have the kitchen 10 window. 11 A. Yes. 12 Q. Then in the foreground we have the old freezer. 13 A. Yes. 14 Q. And below it, the small fridge. 15 A. Correct. 16 Q. Behind it, we have the tall fridge freezer. 17 A. Yes. 18 Q. As we move rightwards, we have the cooker 19 A. Yes. 19 Q a bin 20 Q a possible toaster 21 A. Yes. 21 Q a washing machine 22 A. Yes. 23 A. Yes. 24 Q a washing machine 25 A. Yes. 26 Windows 27 Windows 28 Widark', 'light dark' or 'light' in the record of interview dated 14/06/2017 19 (and, '"The smoke that I saw in my kitchen was light and white in colour. I am aware that in my first and second police interviews I described the smoke as both "light" 18 and "dark". It is important to remember that I had just had the most frightening experience of my life and was in shock. I also did not have an interpreter during these two interviews and I clearly needed one. When I said "dark", I did not mean dark in colour. I meant thick' 29 Q a possible toaster 20 (mand), 21 (mand), 22 (mand), 23 (mand), 24 (mand), 25 (mand), 26 (mand), 27 (mand), 28 (mand), 29 (mand), 20 (mand), 20 (mand), 21 (mand), 22 (mand), 23 (mand), 24 (mand), 25 (mand), 26 (mand), 27 (mand), 28 (mand), 29 (mand), 20 (mand), 21 (mand), 22 (mand), 23 (mand), 24 (mand), 25 (mand), 26 (mand), 27 (mand), 28 (mand), 29 (mand), 20 (mand), 20 (mand), 21 (mand), 22 (mand), 23 (mand), 24 (mand), 25 (mand), 26 (mand), 27 (mand), 28 (mand), 29 (mand), 20 (mand), 20 (mand), 21 (mand), 22 (mand), 23 (mand), 24 (mand), 25 (mand), 26 (mand), 27 (mand), 28 (mand), 29 (mand), 20 (mand), 20 (mand), 21 (mand), 22 (mand), 23 (mand), 24 (mand), 25 (mand), 26 (mand), 27 (mand), 28 (mand), 29 (mand), 20 (mand), 20 (mand), 20 (mand), 21 (mand), 22 (mand), 23 (mand), 24 (mand), 25 (mand), 26 (mand), 27 (mand), 28 (mand), 29 (mand), 20 (mand), 20 (mand), 21 (mand), 22 (mand), 23 (mand), 24 (mand), 25 (mand), 26 (mand), 27				
starting at the far left-hand side we have the kitchen window.  10 window.  11 A. Yes.  12 Q. Then in the foreground we have the old freezer.  13 A. Yes.  14 Q. And below it, the small fridge.  15 A. Correct.  16 Q. Behind it, we have the tall fridge freezer.  17 A. Yes.  18 Q. As we move rightwards, we have the cooker  19 A. Yes.  10 '"dark', 'light dark' or 'light' in the record of interview dated 14/06/2017  11 "and,  12 "The smoke that I saw in my kitchen was light and white in colour. I am aware that in my first and second police interviews I described the smoke as both "light"  15 and "dark". It is important to remember that I had just had the most frightening experience of my life and was in shock. I also did not have an interpreter during these two interviews and I clearly needed one. When I said "dark", I did not mean dark in colour. I meant thick'  19 said "dark", I did not mean dark in colour. I meant thick'  20 Q a bin  21 A. Yes.  21 "and,  22 Q a possible toaster  23 A. Yes.  24 Q a washing machine  25 A. Yes.  26 Then in the fereground we have the old freezer.  27 "The smoke by the window and the fridge side and underneath'"  28 Underneath'"  29 Underneath'"  20 Underneath'"  21 Is that the pertinent extracts of evidence that you relied upon in relation to your conclusions				
window.  10 interview dated 14/06/2017  11 A. Yes.  12 Q. Then in the foreground we have the old freezer.  13 white in colour. I am aware that in my first and second  14 Q. And below it, the small fridge.  15 A. Correct.  16 Q. Behind it, we have the tall fridge freezer.  17 A. Yes.  18 Q. As we move rightwards, we have the cooker  19 A. Yes.  20 Q a bin  21 A. Yes.  21 Q a possible toaster  22 Q a possible toaster  23 A. Yes.  24 Q a washing machine  25 A. Yes.  26 Then in the foreground we have the old freezer.  17 Interview dated 14/06/2017  18 "and,  ""The smoke that I saw in my kitchen was light and  white in colour. I am aware that in my first and second  18 police interviews I described the smoke as both "light"  19 and "dark". It is important to remember that I had just  10 had the most frightening experience of my life and was  11 in shock. I also did not have an interpreter during  12 these two interviews and I clearly needed one. When I  13 white in colour. I am aware that in my first and second  14 police interviews I described the smoke as both "light"  15 and "dark". It is important to remember that I had just  16 had the most frightening experience of my life and was  17 in shock. I also did not have an interpreter during  18 these two interviews and I clearly needed one. When I  29 said "dark", I did not mean dark in colour. I meant  20 thick'  21 "and,  22 ""The smoke by the window and the fridge side and  23 a. Yes.  24 Underneath'"  25 Is that the pertinent extracts of evidence that you  25 relied upon in relation to your conclusions	9		I _	
11		<del>-</del>		
Q. Then in the foreground we have the old freezer.  A. Yes.  Q. And below it, the small fridge.  A. Correct.  Q. Behind it, we have the tall fridge freezer.  A. Yes.  Q. As we move rightwards, we have the cooker  19 A. Yes.  Q a bin  20 Q a possible toaster  21 A. Yes.  Q a washing machine  25 A. Yes.  12 ""The smoke that I saw in my kitchen was light and white in colour. I am aware that in my first and second police interviews I described the smoke as both "light"  10 and "dark". It is important to remember that I had just had the most frightening experience of my life and was in shock. I also did not have an interpreter during these two interviews and I clearly needed one. When I said "dark", I did not mean dark in colour. I meant thick'  21 a. Yes.  22 g a possible toaster  23 A. Yes.  24 Q a washing machine  25 A. Yes.  26 The smoke that I saw in my kitchen was light and white in colour. I am aware that in my first and second police interviews I described the smoke as both "light"  16 had the most frightening experience of my life and was in shock. I also did not have an interpreter during these two interviews and I clearly needed one. When I said "dark", I did not mean dark in colour. I meant thick'  26 underneath'  27 "The smoke by the window and the fridge side and underneath'"  28 Underneath'"  29 Is that the pertinent extracts of evidence that you relied upon in relation to your conclusions		A. Yes.		
A. Yes.  13 white in colour. I am aware that in my first and second 14 police interviews I described the smoke as both "light" 15 A. Correct. 16 Q. Behind it, we have the tall fridge freezer. 17 A. Yes. 18 Q. As we move rightwards, we have the cooker 19 A. Yes. 19 Said "dark", I did not mean dark in colour. I meant 20 Q a bin 21 A. Yes. 21 A. Yes. 22 Q a possible toaster 23 A. Yes. 24 Q a washing machine 25 A. Yes. 26 Yes. 27 White in colour. I am aware that in my first and second 18 police interviews I described the smoke as both "light" 19 had the most frightening experience of my life and was 17 in shock. I also did not have an interpreter during 18 these two interviews and I clearly needed one. When I 29 said "dark", I did not mean dark in colour. I meant 20 thick' 21 "and, 22 "The smoke by the window and the fridge side and 23 underneath'" 24 Q a washing machine 25 A. Yes. 26 Is that the pertinent extracts of evidence that you 27 relied upon in relation to your conclusions				
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A. Correct.  15 and "dark". It is important to remember that I had just 16 Q. Behind it, we have the tall fridge freezer. 17 A. Yes. 18 Q. As we move rightwards, we have the cooker 19 A. Yes. 19 Said "dark", I did not mean dark in colour. I meant 20 Q a bin 21 A. Yes. 21 Yes. 22 Q a possible toaster 23 A. Yes. 24 Q a washing machine 25 A. Yes. 26 Yes. 27 Is that the pertinent extracts of evidence that you 28 relied upon in relation to your conclusions				-
16 Q. Behind it, we have the tall fridge freezer.  17 A. Yes.  18 Q. As we move rightwards, we have the cooker  19 A. Yes.  20 Q a bin  21 A. Yes.  22 Q a possible toaster  23 A. Yes.  24 Q a washing machine  25 A. Yes.  26 P a washing machine  27 A. Yes.  28 P a washing machine  29 Behind it, we have the tall fridge freezer.  19 had the most frightening experience of my life and was in shock. I also did not have an interpreter during these two interviews and I clearly needed one. When I said "dark", I did not mean dark in colour. I meant thick'  20 thick'  21 "and,  22 "The smoke by the window and the fridge side and underneath'"  24 Q a washing machine  25 A. Yes.  26 Is that the pertinent extracts of evidence that you relied upon in relation to your conclusions				
17 A. Yes. 18 Q. As we move rightwards, we have the cooker 19 A. Yes. 19 Q a bin 20 Q a possible toaster 21 A. Yes. 22 Q a possible toaster 23 A. Yes. 24 Q a washing machine 25 A. Yes. 26 Q a washing machine 27 A. Yes. 28 In shock. I also did not have an interpreter during these two interviews and I clearly needed one. When I said "dark", I did not mean dark in colour. I meant thick' 26 thick' 27 "and, 28 ""The smoke by the window and the fridge side and underneath'" 29 Q a washing machine 20 thick' 21 "and, 22 "The smoke by the window and the fridge side and underneath'" 29 Q a washing machine 20 thick' 21 "and, 22 "Is that the pertinent extracts of evidence that you relied upon in relation to your conclusions	16	Q. Behind it, we have the tall fridge freezer.		
18 these two interviews and I clearly needed one. When I 19 A. Yes. 19 said "dark", I did not mean dark in colour. I meant 20 Q a bin 21 A. Yes. 21 'and, 22 Q a possible toaster 23 A. Yes. 24 Q a washing machine 25 A. Yes. 26 Yes. 27 '"The smoke by the window and the fridge side and 28 underneath'" 29 Use thick' 20 underneath'" 20 Is that the pertinent extracts of evidence that you 21 relied upon in relation to your conclusions	17			
19	18	Q. As we move rightwards, we have the cooker		
20 thick' 21 A. Yes. 21 "and, 22 Q a possible toaster 23 A. Yes. 24 Q a washing machine 25 A. Yes. 26 thick' 27 "and, 28 "The smoke by the window and the fridge side and 29 underneath'" 29 underneath' 20 thick' 21 shat the pertinent extracts of evidence that you 25 relied upon in relation to your conclusions	19	A. Yes.		
21 "and, 22 Q a possible toaster 23 A. Yes. 24 Q a washing machine 25 A. Yes. 26 Yes. 27 "and, 28 ""The smoke by the window and the fridge side and 29 underneath'" 20 Is that the pertinent extracts of evidence that you 20 relied upon in relation to your conclusions	20	Q a bin		
22	21	A. Yes.		
23 underneath'" 24 Q a washing machine 25 A. Yes. 23 underneath'" 24 Is that the pertinent extracts of evidence that you 25 relied upon in relation to your conclusions	22	Q a possible toaster	1	
24 Q a washing machine 25 A. Yes.  24 Is that the pertinent extracts of evidence that you relied upon in relation to your conclusions	23	A. Yes.	1	
25 <b>A. Yes.</b> 25 relied upon in relation to your conclusions	24	Q a washing machine		Is that the pertinent extracts of evidence that you
	25	A. Yes.		
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- I ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		Page 22		Page 24

1	A. Yes, that's correct.	1	in the corner opposite by the window'
2	Q from Mr Kebede. Thank you.	2	"and
3	Again, the second source of evidence relied upon was	3	"The broken freezer was just a few inches from the
4	the evidence of the first responders. Again, is that	4	kitchen window'
5	a fair summary, professor?	5	"and Crew Manager Charles BATTERBEE and Fire
6	A. Yes, it is.	6	Fighter Daniel BROWN also both said in their
7	Q. Could I ask Ralph to de-amplify that and turn to page 66	7	evidence to the Grenfell Tower Public Inquiry that;
8	and paragraph 8.8.12.	8	" just in front of the window, there was
9	Here you set out the relevant extracts. First of	9	something like a kitchen counter or board across there
10	all you summarise the evidence of Crew Manager Batterbee	10	which he climbed up onto, which obviously you cannot see
11	and Firefighter Brown, then you go on to quote	11	now, but it was there.' 'It seemed to be a worktop,
12	Firefighter Brown.	12	a standard kitchen worktop, which was essentially in
13	Before I deal with the quote, I think his Christian	13	front of the window'
14	name is David as opposed to Daniel.	14	"and
15	A. Oh, I beg your pardon, yes.	15	"Fire Fighter Daniel BROWN - ' It would be that
16	Q. You set out there and I quote:	16	smaller fridge in the foreground in the middle'
17	"I explained to CM Batterbee that we need to get	17	'That was against the wall, right below the window'"
18	right in and put it out.'	18	If I could finally ask Ralph to turn to page 35 and
19	"I opened the door, CM Batterbee pulsed the ceiling	19	paragraph 8.5.19.
20	once more and then we moved in turning left and	20	Again, I won't go through this, but that is the
21	extinguished the fire.'	21	evidence from Firefighter O'Hanlon that you rely upon
22	"The room began to clear to a point where I could	22	for identifying the location of the area of origin
23	make out it was a kitchen. None of the worktops or	23	within the kitchen of flat 16?
24	indeed any of the remainder of the room was involved in	24	A. Yes, that's correct, yes.
25	the fire at that time. It was contained to one end,	25	Q. Thank you.
	Page 25		Page 27
	0		C
1	hains to the left as you out on the mann and from about		
1	being to the left as you enter the room and from about	1	The third source of evidence, again, I think, is the
2	2-3ft up.'	1 2	The third source of evidence, again, I think, is the thermal imaging camera footage; is that right?
	2-3ft up.' "'CM Batterbee pointed out that it was a fridge that		
2	2-3ft up.' "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the	2	thermal imaging camera footage; is that right?
2 3	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again,	2 3	thermal imaging camera footage; is that right? <b>A. Yes.</b>
2 3 4	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one	2 3 4	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to
2 3 4 5	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again,	2 3 4 5	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.
2 3 4 5 6	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one	2 3 4 5 6	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are
2 3 4 5 6 7	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air,	2 3 4 5 6 7	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area
2 3 4 5 6 7 8	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of	2 3 4 5 6 7 8	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area
2 3 4 5 6 7 8 9	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'	2 3 4 5 6 7 8 9	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?
2 3 4 5 6 7 8 9	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it	2 3 4 5 6 7 8 9	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video
2 3 4 5 6 7 8 9 10	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily	2 3 4 5 6 7 8 9 10	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put
2 3 4 5 6 7 8 9 10 11 12	2-3ft up.'  "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot	2 3 4 5 6 7 8 9 10 11 12	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very
2 3 4 5 6 7 8 9 10 11 12 13	2-3ft up.'  "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot embers/debris falling outside what I could now see was a	2 3 4 5 6 7 8 9 10 11 12 13	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very valuable information relating to the damage to the
2 3 4 5 6 7 8 9 10 11 12 13 14	2-3ft up.'  "CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot embers/debris falling outside what I could now see was a window that had completely given way leaving a hole in	2 3 4 5 6 7 8 9 10 11 12 13 14	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very valuable information relating to the damage to the appliances to the right of where I believe the area of
2 3 4 5 6 7 8 9 10 11 12 13 14 15	2-3ft up.'  "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot embers/debris falling outside what I could now see was a window that had completely given way leaving a hole in the wall.'	2 3 4 5 6 7 8 9 10 11 12 13 14 15	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very valuable information relating to the damage to the appliances to the right of where I believe the area of origin to be.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	2-3ft up.'  "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "'I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot embers/debris falling outside what I could now see was a window that had completely given way leaving a hole in the wall.'  "'Below this window was a box sturdy enough to hold	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very valuable information relating to the damage to the appliances to the right of where I believe the area of origin to be.  Q. Tying in with that answer, it appears that the fourth
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2-3ft up.'  "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot embers/debris falling outside what I could now see was a window that had completely given way leaving a hole in the wall.'  "Below this window was a box sturdy enough to hold my weight and not involved in the fire'"	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very valuable information relating to the damage to the appliances to the right of where I believe the area of origin to be.  Q. Tying in with that answer, it appears that the fourth piece of evidence you've relied upon is the fire
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2-3ft up.'  "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot embers/debris falling outside what I could now see was a window that had completely given way leaving a hole in the wall.'  "Below this window was a box sturdy enough to hold my weight and not involved in the fire'"  Just for the sake of completeness, Ralph, if you	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very valuable information relating to the damage to the appliances to the right of where I believe the area of origin to be.  Q. Tying in with that answer, it appears that the fourth piece of evidence you've relied upon is the fire patterns on the wall in the kitchen; is that right?
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	2-3ft up.'  "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot embers/debris falling outside what I could now see was a window that had completely given way leaving a hole in the wall.'  ""Below this window was a box sturdy enough to hold my weight and not involved in the fire'"  Just for the sake of completeness, Ralph, if you de-amplify that and amplify paragraph 8.8.13 so as to	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very valuable information relating to the damage to the appliances to the right of where I believe the area of origin to be.  Q. Tying in with that answer, it appears that the fourth piece of evidence you've relied upon is the fire patterns on the wall in the kitchen; is that right?  A. Yes.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	2-3ft up.'  "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot embers/debris falling outside what I could now see was a window that had completely given way leaving a hole in the wall.'  "Below this window was a box sturdy enough to hold my weight and not involved in the fire'"  Just for the sake of completeness, Ralph, if you de-amplify that and amplify paragraph 8.8.13 so as to provide context.	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very valuable information relating to the damage to the appliances to the right of where I believe the area of origin to be.  Q. Tying in with that answer, it appears that the fourth piece of evidence you've relied upon is the fire patterns on the wall in the kitchen; is that right?  A. Yes.  Q. If I could ask Ralph to take that image down, and turn
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	2-3ft up.'  "'CM Batterbee pointed out that it was a fridge that he put out. This was towards the right-hand side of the back wall, sitting on something about 2-3ft up. Again, this I found a bit strange. Whilst it explained on one hand I could only see flame from 2-3 ft up in the air, it was in the wrong location to the forceful curtain of flame I saw which was more to the left of that wall.'  "I walked towards the fridge to inspect it, it appeared around the top 25% of the fridge was heavily damaged, immediately I noticed little pieces of hot embers/debris falling outside what I could now see was a window that had completely given way leaving a hole in the wall.'  "Below this window was a box sturdy enough to hold my weight and not involved in the fire'"  Just for the sake of completeness, Ralph, if you de-amplify that and amplify paragraph 8.8.13 so as to provide context.  Just for the sake of completeness, I'll read this	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	thermal imaging camera footage; is that right?  A. Yes.  Q. If I could ask Ralph to de-amplify that and turn to page 32, and figure 19.  Again, just for the avoidance of doubt, those are the images you relied upon for identifying the area within the kitchen that you consider contains the area of origin?  A. These were, but I also used the thermal imaging video that was taken after the firefighters had begun to put the fridge out, and that was because it provided very valuable information relating to the damage to the appliances to the right of where I believe the area of origin to be.  Q. Tying in with that answer, it appears that the fourth piece of evidence you've relied upon is the fire patterns on the wall in the kitchen; is that right?  A. Yes.  Q. If I could ask Ralph to take that image down, and turn to page 69 and figure 57, which we've looked at earlier.
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1	A. Lucandan actually if it would be more helpful to	١,	where the microwave is.
1 2	A. I wonder, actually, if it would be more helpful to take this photograph was shown earlier in my report	1 2	Q. So you're able to exclude apologies if I put this too
3	without the red line in it. It might be easier to look	3	crudely, correct me if I have done that on the basis
4	at that one.	4	of that, the washing machine, the possible kettle and
5	Q. I don't have the reference immediately to hand for that	5	the microwave?
6	photograph. I think it's earlier on in the report.	6	A. Yes, absolutely, because the thermal imaging camera
7	(Pause)	7	shows no damage particularly to those appliances.
8	A. I can do it from this one, it's okay.	8	Perhaps a bit of smoke damage, but nothing more than
9	Q. If you go to page 24. Sorry	9	that. And that allows us very early on, because we
10	A. I can do it from this one, it's fine.	10	know, because of the firefighters' intervention very
11	Q. Sorry, page 26, figure 14.	11	early on, that where the fire was occurring was from the
12	A. Perfect, yes.	12	cooker forwards towards the window, and we could rule
13	Q. Thank you.	13	out all of the other appliances that were in the rest of
14	Ralph, page 26, figure 14.	14	the kitchen.
15	Professor, it's probably easier if I could ask you	15	Q. I interrupted you, professor, apologies. I think you
16	to identify what burn patterns you have relied upon for	16	were about to explain for us what you deduce from the
17	the purposes of your conclusion in respect of	17	burn patterns in the south end of this kitchen.
18	hypothesis 2.	18	A. In this particular photograph this was one of the
19	A. Okay, so I'll stand also.	19	early photographs taken by the first fire investigation
20	What you're looking at in terms of interpreting this	20	team that went in which were from London Fire Brigade,
21	photograph with regards to trying to narrow down an area	21	and their first task was to, quite rightly, take
22	or potential area of origin is not simply one of those	22	a series of photographs that would simply document the
23	factors individually, it's the combination of them all	23	scene, so without moving things around too much or
24	together, those factors being the witness statements,	24	damaging things too much, and that's exactly the right
25	particularly of the TIC video, and also then the	25	approach to take.
	Page 29		Page 31
1	patterns on the walls and on the appliances that we see	1	So this was one of those early photographs. It's
1 2	patterns on the walls and on the appliances that we see in the photograph.	1 2	So this was one of those early photographs. It's taken from the living room, where the sliding doors
			, , , , ,
2	in the photograph.	2	taken from the living room, where the sliding doors
2 3	in the photograph.  The thermal imaging camera video in particular was	2 3	taken from the living room, where the sliding doors were, looking into the kitchen. What we're seeing — so
2 3 4	in the photograph.  The thermal imaging camera video in particular was hugely helpful to be able to say that the fire in the	2 3 4	taken from the living room, where the sliding doors were, looking into the kitchen. What we're seeing — so I'm standing probably close to where some of the
2 3 4 5	in the photograph.  The thermal imaging camera video in particular was hugely helpful to be able to say that the fire in the early stages damaged or was centred in only the area	2 3 4 5	taken from the living room, where the sliding doors were, looking into the kitchen. What we're seeing — so I'm standing probably close to where some of the television appliances and things like that were in the living room, looking into the kitchen. What you're seeing from the left-hand side, which is
2 3 4 5 6	in the photograph.  The thermal imaging camera video in particular was hugely helpful to be able to say that the fire in the early stages damaged or was centred in only the area from down at the fridge freezer and not the appliances	2 3 4 5 6	taken from the living room, where the sliding doors were, looking into the kitchen. What we're seeing — so I'm standing probably close to where some of the television appliances and things like that were in the living room, looking into the kitchen.
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2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	in the photograph.  The thermal imaging camera video in particular was hugely helpful to be able to say that the fire in the early stages damaged or was centred in only the area from down at the fridge freezer and not the appliances on the other side of the fridge freezer.  Q. That's the video we showed back in June?  A. That's correct.  Q. Yes.  A. The reason that I say that is because after the initial fire was extinguished, the fire at some point re-entered this flat, and at some point the appliances down this end, from the cooker further down, were damaged to a greater extent as a consequence of that re-entry. So the burn patterns we're looking at and the damage to these appliances are as a result of the initial fire, plus a re-entry of that initial fire into the flat at a later point.  So being able to sequence when this damage occurred and what level of damage occurred to those appliances from the cooker towards the door, taken from the thermal imaging cameras, is incredibly important, because the TIC showed that in actual fact there was very little, if	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	taken from the living room, where the sliding doors were, looking into the kitchen. What we're seeing — so I'm standing probably close to where some of the television appliances and things like that were in the living room, looking into the kitchen.  What you're seeing from the left-hand side, which is the kitchen window side, over to the right-hand side, which is where the doorway to the kitchen would be, which is behind this pillar or further on from behind that pillar, is a gradation, in my view, of the damage. So it looks to be more damaged — by the damage, I mean it looks blacker, it looks more charred — to the window side than to the right-hand side of the kitchen.  So that's one aspect to view.  We can also see from this photograph that the appliances towards the kitchen end[sic] — so that's the old freezer, the small fridge and the tall fridge freezer — are damaged to a greater degree than the appliances starting with the cooker and moving back towards the door end of the kitchen.  The other thing of note is that this room has not gone through a process that we call flashover. Flashover is indicated in terms of fire patterns or burn
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	in the photograph.  The thermal imaging camera video in particular was hugely helpful to be able to say that the fire in the early stages damaged or was centred in only the area from down at the fridge freezer and not the appliances on the other side of the fridge freezer.  Q. That's the video we showed back in June?  A. That's correct.  Q. Yes.  A. The reason that I say that is because after the initial fire was extinguished, the fire at some point re-entered this flat, and at some point the appliances down this end, from the cooker further down, were damaged to a greater extent as a consequence of that re-entry. So the burn patterns we're looking at and the damage to these appliances are as a result of the initial fire, plus a re-entry of that initial fire into the flat at a later point.  So being able to sequence when this damage occurred and what level of damage occurred to those appliances from the cooker towards the door, taken from the thermal imaging cameras, is incredibly important, because the	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	taken from the living room, where the sliding doors were, looking into the kitchen. What we're seeing — so I'm standing probably close to where some of the television appliances and things like that were in the living room, looking into the kitchen.  What you're seeing from the left-hand side, which is the kitchen window side, over to the right-hand side, which is where the doorway to the kitchen would be, which is behind this pillar or further on from behind that pillar, is a gradation, in my view, of the damage. So it looks to be more damaged — by the damage, I mean it looks blacker, it looks more charred — to the window side than to the right-hand side of the kitchen.  So that's one aspect to view.  We can also see from this photograph that the appliances towards the kitchen end[sic] — so that's the old freezer, the small fridge and the tall fridge freezer — are damaged to a greater degree than the appliances starting with the cooker and moving back towards the door end of the kitchen.  The other thing of note is that this room has not gone through a process that we call flashover.

1	the way down to the floor. So everything that's	1	Again, could I just give a warning that some of
2	combustible in the particular compartment will burn.	2	these scenes show burnt-out debris.
3	We've got items that have survived for example,	3	The first appliance I would be grateful for your
4	the bin items on the floor. Some of the kitchen	4	help in relation to is the cooker.
5	cabinets and the doors of those cabinets are only burnt	5	Ralph, if I could ask you to turn to page 60, and
6	at the surface rather than burnt to a more penetrating	6	figure 54.
7	degree.	7	A. Yes.
8	So those patterns initially are helpful in providing	8	Q. That shows the cooker. I think I can lead on that.
9	us with physical evidence to suggest that this end, the	9	If we turn back to page 59, Ralph, apologies, and
10	window end of the kitchen, was the one that was more	10	paragraph 8.7.24 which is the bottom of page 59?
11	badly damaged.	11	A. Yes.
12	Q. Thank you.	12	Q. You say:
13	The fifth and final source of evidence you've relied	13	"8.7.24. The electric cooker to the right-hand side
14	•	14	
	upon are stills from Mr Kebede's phone, or photos taken		of the tall fridge freezer was examined and found to
15	with Mr Kebede's phone, to be strictly accurate.	15	have only superficial damage and melting to the plastic
16	Could I ask you to turn to page 38 of the report,	16	knobs of the appliance"
17	and figure 23.	17	Is it for that principal reason that you eliminated
18	First of all, could you explain for us what these	18	the cooker from consideration as having played any
19	images are, where they were taken from, what do you	19	causative role?
20	think they show?	20	A. It's for that reason, but also from the video footage of
21	A. Yes, so these were images recovered from video that was	21	the TIC.
22	taken on Mr Kebede's mobile telephone. The time stamp	22	Q. Thank you.
23	on the images was just after 01.05, and what the	23	If we can go back to figure 57, which is page 69,
24	photographs show is from outside of Grenfell Tower,	24	Ralph, and if we could amplify figure 57.
25	looking up towards the window of flat 16.	25	Looking in the far right-hand side, the microwave
	Page 33		Page 35
	1 age 33		1 age 33
1	So in photograph (a), the red glow up at the top is	1	the evidential basis for ruling out the microwave, would
2	1 0 1 (7)		
2	the window of the kitchen of flat 16, and I understand	2	
	the window of the kitchen of flat 16, and I understand the red glow to be the early stages of the developing		that be the video footage as well?
3	the red glow to be the early stages of the developing	2 3 4	that be the video footage as well?  A. Yes, pretty much for all of these appliances. So when
3 4	the red glow to be the early stages of the developing fire within that flat.	3	that be the video footage as well?  A. Yes, pretty much for all of these appliances. So when you look at the photograph, they look to be badly
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3 4 5 6 7	the red glow to be the early stages of the developing fire within that flat.  The white arrow is pointing at a line, which looks to be a sharp line, within that image, and that may be part of the window frame itself or it may be part of the	3 4 5 6 7	that be the video footage as well?  A. Yes, pretty much for all of these appliances. So when you look at the photograph, they look to be badly damaged in some cases because some of them are collapsed, some of them are melted some of them are scorched, particularly the washing machine.
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1	electrical activity. This was also the view expressed	1	area of origin was the tall freezer, you say this, and
2	in the Bureau Veritas fire and safety department report	2	I quote:
3	dated the 7th November 2017"	3	"8.8.54. The combination of witness statements, TIC
4	Is that a view with which you agree?	4	footage, the fire patterns on the tall fridge freezer
5	A. Yes.	5	and the laminate flooring underneath the tall fridge
6	Q. Could you give us a reason as to why?	6	freezer and the conclusions reached by Dr. Duncan GLOVER
7	A. Fuses within appliances in particular can operate	7	in relation to his electrical examination all indicate
8	that means that they open or they blow, as some experts	8	that it is more likely than not that the area of origin
9	have described it as a result of just simply heat or	9	of the fire was located at the southeast corner of the
10	experiencing heat from an external fire as opposed to	10	kitchen in the tall fridge/freezer located along the
11	operating in their normal electrical safety function.	11	South facing wall."
12	Q. Thank you.	12	First of all, does that remain your view?
13	Could I ask Ralph to put that down and return us to	13	A. Yes, it does.
14	page 69 and figure 57.	14	Q. Thank you.
15	We see there at the right-hand side and in the	15	Again, as with the previous two hypotheses, I'd like
16	middle, identification of kettle and toaster	16	to go through the evidence you've relied upon in
17	respectively.	17	reaching your conclusion.
18	Can you help us, on what basis did you eliminate	18	Again, if I could repeat the general warning that
19	these two appliances as having any causative role?	19	we'll be looking at photographs that show burnt debris
20	A. Again, similar basis. They were clearly in view in the	20	in the kitchen.
21	TIC footage. They were also eliminated by Bureau	21	The first piece of evidence I'd like to turn to
22	Veritas in their examination.	22	relates to the old freezer and the small fridge that
23	Q. Finally, you were in the hearing room yesterday to hear	23	was, I put it crudely, opposite the together fridge
24	Dr Glover's evidence. You've clearly read the report he	24	freezer.
25	provided.	25	A. Yes.
	F		
	Page 37		Page 39
1	A. Yes.	1	Q. Could I ask Ralph to take us, first of all, to page 71
2	Q. Are you content or do you agree with his conclusions in	2	and figure 58.
3	relation to the absence of causative evidence, if I can	3	We see there in figure 58, in the middle of that
4	put it that way, in relation to the appliances we've		
		4	page, in the bottom left-hand corner, what you described
5	just discussed?	5	as the "Assumed position of old freezer and small
5 6	just discussed? A. Yes, I am.	5 6	
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6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	just discussed?  A. Yes, I am.  Q. Your conclusion and if I could ask Ralph to take us to page 68 and paragraph 8.8.16 in respect of hypothesis 2 is this, and I quote:  "8.8.16. The evidence of the fire fighters and the images from the thermal camera indicate that it is more likely than not that the area of origin of the fire was in the southeast area of the kitchen in flat 16."  Accepting that you've sought to reach your conclusions on the balance of probabilities, first of all, have you seen any evidence that suggests an alternative to hypothesis 2?  A. No, I have not.  Q. Can we take it that you are reasonably confident in your conclusion set out at 8.8.16?  A. Yes, I am confident of it.  Q. Professor, could I now turn to hypothesis 3.  Ralph, if I could ask you to take us to page 88, and paragraph 8.8.54.  Professor, in relation to hypothesis 3, ie that the	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	as the "Assumed position of old freezer and small fridge"; is that right?  A. Yes.  Q. Could you help us, what is the evidential basis for you locating the old freezer and the small fridge there?  A. The positioning of them is based on the general plan that Mr Kebede and other witnesses that lived in the property presented of where the items in the kitchen were, and also in the witness statements that were presented by the initial firefighters, who said that they stood on or leant on appliances or materials that were there, which they later identified as the two appliances we're talking about. Also, finally, the photographs that were taken by the first fire investigators when they documented the scene when they did their scene examination on 14 June.  Q. Thank you, professor.  Ralph, if you could put that down and could we go to page 72 and figure 59.  Can you help us, what does this photograph show, first of all?
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	just discussed?  A. Yes, I am.  Q. Your conclusion and if I could ask Ralph to take us to page 68 and paragraph 8.8.16 in respect of hypothesis 2 is this, and I quote:  "8.8.16. The evidence of the fire fighters and the images from the thermal camera indicate that it is more likely than not that the area of origin of the fire was in the southeast area of the kitchen in flat 16."  Accepting that you've sought to reach your conclusions on the balance of probabilities, first of all, have you seen any evidence that suggests an alternative to hypothesis 2?  A. No, I have not.  Q. Can we take it that you are reasonably confident in your conclusion set out at 8.8.16?  A. Yes, I am confident of it.  Q. Professor, could I now turn to hypothesis 3.  Ralph, if I could ask you to take us to page 88, and paragraph 8.8.54.	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	as the "Assumed position of old freezer and small fridge"; is that right?  A. Yes.  Q. Could you help us, what is the evidential basis for you locating the old freezer and the small fridge there?  A. The positioning of them is based on the general plan that Mr Kebede and other witnesses that lived in the property presented of where the items in the kitchen were, and also in the witness statements that were presented by the initial firefighters, who said that they stood on or leant on appliances or materials that were there, which they later identified as the two appliances we're talking about. Also, finally, the photographs that were taken by the first fire investigators when they documented the scene when they did their scene examination on 14 June.  Q. Thank you, professor.  Ralph, if you could put that down and could we go to page 72 and figure 59.  Can you help us, what does this photograph show,

1	A. So this photograph I'll stand up and just talk you	1	Q page 72.
2	through it.	2	A. Yes, apologies.
3	Q. That would be useful, thank you.	3	Q. Page 72, please, Ralph.
4	A. This photograph is a photograph taken of the old	4	If we could amplify figure 59. Thanks, Ralph.
5	freezer. So if you imagine looking at this or slightly	5	A. So this is, as we said, the old freezer here (Indicates)
6	to the left of this aspect here, you would expect to see	6	if you look to the right-hand side of the photograph,
7	the window or the remains of the opening where the	7	you just see the outline here (Indicates) of the small
8	window was in the kitchen.	8	fridge, so it just puts the two appliances in context
9	This wooden beam here or piece of wood here is,	9	with each other.
10	I believe, part of the partition or the sliding door	10	Q. What you're identifying there, just for the transcript,
11	partition.	11	is in the far right-hand middle of the photograph, what
12	Q. Between the kitchen and living room?	12	looks like a heavily rusty sheet of metal at an angle?
13	A. Between the kitchen and the living room. I'm standing	13	A. That's correct.
14	in the living room in my position right now, and the	14	Q. Professor, thank you, that was useful.
15	appliance that you're looking at is the old freezer that	15	Ralph, if we could go now to page 73 and figure 60.
16	was positioned under the kitchen window to the left-hand	16	Professor, what does this show us?
17	side as you look down the kitchen.	17	A. So this is a photograph taken at a slightly different
18	Circled in red is, if you look at it carefully, the	18	angle. So the previous photograph and I'm pointing
19	remains of the appliance plug for this particular	19	to the top left-hand corner of the photograph was
20	appliance.	20	taken from that angle, where in the top left, this
21	Q. That red circle is in the lower half of this photograph.	21	object that looks slightly rusted is the old freezer.
22	A. That's correct, and what is presumably the appliance	22	This now is looking at it from the opposite side, if you
23	cord is trailing down to that plug.	23	like, and the appliance that we're looking at in the
24	Q. Thank you.	24	middle, this box-shaped thing, is the small fridge.
25	What do you deduce from the state of the plug?	25	It's up against what is a door on the right-hand side,
	Page 41		Page 43
	0		Ö
1	A. It's difficult to say just simply from the photograph,	1	and that's the bottom door of the fridge freezer, the
2	but the taking the evidence in the photograph, so	2	tall fridge freezer.
3	looking at it, and also the evidence presented by	3	To the very right of the photograph you see the
4	Bureau Veritas in their report, the plug is not plugged	4	bottom of the cooker. So this appliance here is the
5	in, obviously, but it also appears to be quite badly	5	cooker.
6	damaged by the effect of heat and possibly flame. It	6	Q. What is your assessment of whether the small fridge was
7	shows that that appliance was not plugged in at the time	7	plugged in or not on the night of the fire?
8	of the fire.	8	A. My understanding is that it was not, but there's no
9	Q. What can we derive from the burn marks on the side of	9	photographic evidence that I can see, as there was with
10	the old freezer that's immediately in front of the	10	the old freezer, of plugs or any other sort of parts of
11	photograph?	11	the appliance that are visible in these photographs.
12	A. It's difficult really to provide a strong interpretation	12	But the witness statements and those of the fire
13	of that, other than the fridge freezer has clearly been	13	investigators who did see the appliance in situ have
14	severely affected by fire.	14	said it was not plugged in.
15	Q. Do you agree with the conclusions that Dr Glover reached	15	Q. Just for the sake of completeness, if I could ask you
16	in relation to the old freezer unit?	16	first of all to confirm, are you content with
17	A. Yes.	17	Dr Glover's conclusions in relation to the small fridge?
18	Q. In relation to the small fridge, could I ask Ralph to	18	A. Yes, I am.
19	take us to figure 60, which is page 73.	19	Q. Could I ask you now to turn to page 74 and
20	Again, professor, starting with a basic question	20	paragraph 8.8.24. It just fleshes out the answer you've
21	first: what does this show us?	21	just given as to another aspect of evidence as to
22	A. Again, it might be useful just to go back to the	22	whether the small fridge was plugged in or not.
23	previous photographs just for a moment.	23	A. Yes, that's correct. This was taken from a discussion
24	Q. That would be	24	or interview between Watch Manager Leaver and Mr Kebede.
25	A. Just to orientate ourselves.	25	Q. Just for the record, 8.8.24 reads thus:
	Page 42		Page 44

1	"8.8.24. The witness statement of Mr Behailu KEBEDE	1	SIR MARTIN MOORE-BICK: Thank you very much.
2	and contemporaneous notes of Fire Fighter Daniel	2	Right, 11.10, then, please.
3	BROWN also suggested that the initial fire was not	3	(11.00 am)
4	in the old freezer and small fridge. Mr Behailu KEBEDE	4	(A short break)
5	when being interviewed by Watch Manager Matthew LEAVER	5	(11.10 am)
6	[A71] said	6	SIR MARTIN MOORE-BICK: All right, professor? Ready to
7	"LEAVER: And these two [referring to the old	7	carry on?
8	freezer and small fridge] definitely not plugged in?	8	THE WITNESS: Yes, thank you.
9	"KEBEDE: Definitely, these not working'.	9	SIR MARTIN MOORE-BICK: Yes, Mr Kinnier.
10	"Fire Fighter Daniel BROWN said that;	10	MR KINNIER: Thank you, sir.
11	"CM Batterbee pointed out that it was a fridge that	11	Professor, thank you very much for coming back.
12	he put out. This was towards the right-hand side of the	12	We were dealing with hypothesis 3 and we were
13	back wall'."	13	dealing with electrical appliances found within the
14	That's the evidence you relied upon in your	14	narrowed-down area of origin that you set out in your
15	conclusions.	15	report.
16	A. Yes.	16	A. Yes.
17	Q. Could I now ask you to turn to paragraph 8.8.25, same	17	Q. The second appliance I'd like to discuss with you is the
18	page.	18	hot plate electric cooking device that has been
19	Just to confirm, for the avoidance of doubt, you	19	variously described as an "m'tad" or "injera" pan.
20	conclude here in relation to the old freezer and small	20	A. Yes.
21	fridge:	21	Q. If I could ask Ralph to put up figure 63 on page 75. If
22	"8.8.25. On the basis of this evidence, it is	22	you could amplify figure 63.
23	unlikely that the old freezer and small fridge are in	23	First of all, is that the appliance that has been
24	the area of origin of the fire although these appliances	24	variously described as I've just set out?
25	were clearly involved in the fire at some later point.	25	A. Yes, that's my understanding.
	1		
	Page 45		Page 47
1	This allows the area of origin of the fire to be	1	Q. Are you content that, irrespective of where this pan may
2	narrowed to the southeast corner of the kitchen as	2	have been stored before the fire, there is no evidence
3	indicated by the red line in figure 62."	3	to suggest that it was plugged in on the night of the
4	If we could de-amplify that paragraph and amplify	4	fire?
5	figure 62, which is immediately below.	5	A. That's correct.
6	The red line to which you refer, is that marked in	6	Q. Are you content with Dr Glover's assessment that the
7	the far left-hand side?	7	items showed no signs of electrical activity?
8	A. Yes, that's correct.	8	A. Yes.
9	Q. Thank you.	9	Q. Or arcing, to be pertinent.
10	Final question in this respect: do you remain of the	10	A. Yes.
11	view set out in paragraph 8.8.25 in relation to the old	11	Q. Therefore, can this device be ruled out as having played
12	freezer and small fridge?	12	any causative role in the initial fire?
13	A. Yes, I do.	13	A. In my opinion, yes.
14	MR KINNIER: Thank you.	14	Q. Thank you.
15	Sir, that is a convenient point at which to invite	15	The third appliance or device I'd like to cover is
16	you to rise for a small break.	16	the kitchen contractor fan.
17	SIR MARTIN MOORE-BICK: Well, professor, we normally have	17	Ralph, may I ask you to turn to page 28 and
18	a short break about an hour into the session, so we'll	18	figure 15.
19	take one now and we'll resume at 11.10.	19	First of all, professor, what does this photo show?
20	I have to ask you, please, not to talk about your	20	A. This was a photograph that was taken of flat 13, which
21	evidence to anyone while you're out of the room.	21	was used, as I understand it, as an exemplar flat to
22	THE WITNESS: Of course.	22	look at the orientation of various parts of the kitchen,
23	SIR MARTIN MOORE-BICK: If you go with the usher, she'll	23	particularly the area around the window.
24	look after you.	24	It's my understanding that this photograph was used
25	THE WITNESS: Thank you very much.	25	and has been used as an exemplar to show what the
	The strategic finance you very much.	23	and has been used as an exemplar to show what the
	Page 46		Page 48
	<del>-</del>	-	-

Looking at secresshot (a) on the left-hand side, the window set-up, if you file, was like in that 16.  So you have the large window to the relief-thand side, of the photograph, the small windown you prompt to the right-hand side, and above that there was an infill panel which housed the extractor fan.  Q. If we could de-amplity that, please, Ralph, and just for the selective of the photograph shows a comparable flat.  A. Ver.  This sip sit a confirm the evidence you've given that effectively the photograph shows a comparable flat.  A. Ver.  Q. Ralph, if you could take that down and could you take us to page 80 and, in particular, paragraph 83.5.  Here you are discussing the various examinations of the three yours are discussing the various examinations. It is within the kitchen, which we've covered before in June.  You say at 8.8.5.  "8.8.35. These examinations appeared to involve removal of the various stems from the bags in which they were contained followed by a one-distructive visual examination. In some cases, a microscope (unspecified in terms of the well within the stream of the young the stream of the young and the stream of the various terms from the bags in which they were contained followed by a one-distructive visual examination of fuses was undertaken"  23. examination of fuses was undertaken"  24. A. Yes.  A. O'B. For the unimitiated in the room, what can you derive  Page 49  Page 51  1 from non-destructive visual examination generally, and the well look at the extractor fan.  2 to page 30, now destructive visual examination is exactly as it sounds. So it involves looking at the various compared to more detail, and they might involve looking at the various to compared to more detail, and they might involve looking at the various to compared to more detail, and they might involve looking at the various to compared to more detail, and they might involve looking at the various to compared to the visible provides of the productive played no examers of the casumination of the particular riem.				
the left-hand side of the photograph, the small windowspane to the right-hand side, and above that there was an infill panel which housed the extractor fan. Q. If we could de-amplify that, please, Rajbh, and just for the sake of completeness go to pargarph 8.4.5, which is a tapege 27. This is just to confirm the evidence you've given that effectively the photograph shows a comparable flat. If A. Yes. Q. Rajhh, if you could take that down and could you take us to page 80 and, in particular, paragraph 8.8.35. Here you are discussing the various examinations that were curried other in relation to the gridded areas which the kitchen, which we've covered before in June. You say at 8.8.35. These examinations appeared to involve removed of the various items from the bags in which they were contained followed by a non-destructive visual examination. In some cases, a microscope or trapely, and the surious of times was undertaken" 234 A. Ves. Q. For the uninitiated in the room, what can you derive  Page 49  Page 51  from non-destructive visual examination is exactly as it sounds. So it involves looking at the various components—so they might be small conductors, they might be the larger appliance—by yee, initially, they are he visualised or looked at it more detail, and they might involves mon-destructive items of the various from conductors, they might be the larger appliance—by yee, initially, they are he visualised or looked at the components under a microscope or with specialist equipment such as X-rays, micro-CT seanners, seanning electron microscopes and so an. All of that is not, boy us agree with be analysis that Dr. Glover set out in relation to the extractor fan, and that it effectively ployed no causative role in the initial fire?  A. Ves. 10  Q. Thank you.  This provides the extractor fan where the infill panel was the book at the extractor fan and that it effectively ployed no causative role in the initial fire?  Q. Pass, both on of the particular frem.  Q. Pass to flesh out the evidence in relation to th	1	kitchen window set-up, if you like, was like in flat 16.	1	Looking at screenshot (a) on the left-hand side,
windowpane to the right-hand side, and above that there was an infill panel which housed the extractor fan.  0. If we could de-amplify that, please, Ralph, and just for the sake of completeness go to paragraph 8.4.5, which is at page 27.  This is just to confirm the evidence you've given that effectively the photograph shows a comparable flat.  A. Yes.  Recyou are discussing the various examinations to the post of the post of the the effectively the photograph shows a comparable flat.  Here you are discussing the various examinations that were carried other in relation to the graded areas within the kitchen, which we've covered before in June.  You say at 8.8.35.  Here you are discussing the various examinations that were carried other in relation to the graded areas within the kitchen, which we've covered before in June.  You say at 8.8.35.  What is anything, can you deduce from the orange carried area within the kitchen, which we've covered before in June.  You say at 8.8.35.  What is anything, can you deduce from the orange carried other in relation to the kitchen extractor fan.  You say at 8.8.35.  A Noting really from this photograph, and go back to repair the wild be an anything or can we deduce anything, rather, about the carried or head of the various demands or head of the	2	So you have the large windowpane or large window to	2	first of all, what does the white arrow specifically
5 was an infill panel which housed the extractor fam. 6 Q. If we could de-amplify that, please, Ralph, and just for the sake of completeness go to paragraph 8.4.5, which is at page 27.  The size of completeness go to paragraph 8.4.5, which is at page 27.  The size just to confirm the evidence you've given that effectively the photograph shows a comparable flat. 10 A. Yes. 11 A. Yes. 12 Q. Ralph, if you could take that down and could you take us to page 80 and, in particular, paragraph 8.8.35. 13 to page 80 and, in particular, paragraph 8.8.35. 14 Here you are discussing the various examinations that were carried other in relation to the gridded areas within the kitchen, which we've covered before in June. 17 You say at 8.8.35. 18 "8.8.35. These examinations appeared to involve romoval of the various terms from the bage in which they were contained followed by a non-destructive visual examination. In some cases, a microscope (unspecified in terms of type) was also used and in some cases X-ray examination of fises was undertaken" 24 A. Yes. 25 Q. For the uninitiated in the room, what can you derive 26 might be the larger appliance, by eye, initially. 27 They might rowlve booking at the various and they might be small conductors, they might be small conductors, they might be small conductors, they might the small conductors, they might the wind to short off this pinch down in an acquarted to look at the they can be Visual examination to exactly as they can be visual examination of the particular items of the examination of the particular items of the examination of the particular items of the examination of the particular items.  1	3	the left-hand side of the photograph, the small	3	indicate?
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under a microscope or with specialist equipment such as  X-rays, micro-CT scanners, scanning electron microscopes  and so on. All of that is non-destructive in terms of  the examination of the particular item.  Q. Just to bottom off this point, do you agree with the  analysis that Dr Glover set out in relation to the  extractor fan and that it effectively played no  causative role in the initial fire?  A. Yes, I do.  Just to flesh out the evidence in relation to the  20 Just to flesh out the evidence in relation to the  21 gy Yes.  13 A. So if I —  14 Q. Sorry, you are on your feet quite a lot during the course of this.  16 A. So if I'm looking at the very first photograph of figure 24, so the one to the far left, you can begin to see — and looking at these in sequence, simply following one from the other, both in 24 and then in  20 Just to flesh out the evidence in relation to the  extractor fan, could I ask Ralph to take us to page 38  21 pattern, around where this infill was, and those  22 and figure 23.  We looked at this earlier, but I think it may be  helpful just to go back, looking at the particular  context of the kitchen contractor fan.  25 The next matter in relation to materials within what	8	they can be visualised or looked at in more detail, and	8	photographs in figure 24 as well
X-rays, micro-CT scanners, scanning electron microscopes and so on. All of that is non-destructive in terms of the examination of the particular item.  13	9	they might involve looking at some of the components	9	Q. Yes, please.
12 and so on. All of that is non-destructive in terms of 13 the examination of the particular item. 14 Q. Just to bottom off this point, do you agree with the 15 analysis that Dr Glover set out in relation to the 16 extractor fan and that it effectively played no 17 causative role in the initial fire? 18 A. Yes, I do. 19 Q. Thank you. 19 Q. Thank you. 20 Just to flesh out the evidence in relation to the 21 extractor fan, could I ask Ralph to take us to page 38 22 and figure 23. 23 We looked at this earlier, but I think it may be 24 helpful just to go back, looking at the particular 25 context of the kitchen contractor fan. 20 In the examination of the particular item. 20 Q. Yes. 21 Q. Yes. 22 Q. Yes. 23 A. So if I— 24 Q. Sorry, you are on your feet quite a lot during the course of this. 26 A. So if I'm looking at the very first photograph of figure 24, so the one to the far left, you can begin to see — and looking at these in sequence, simply following one from the other, both in 24 and then in 25 — the flames developing around in a circular pattern, around where this infill was, and those 22 I believe to be the flames burning around where the metal extractor fan would be. 24 helpful just to go back, looking at the particular 24 Q. Thank you. 25 context of the kitchen contractor fan. 26 The next matter in relation to materials within what	10	under a microscope or with specialist equipment such as	10	A just to put all of them together on the one screen,
the examination of the particular item.  Q. Just to bottom off this point, do you agree with the analysis that Dr Glover set out in relation to the extractor fan and that it effectively played no causative role in the initial fire?  A. Yes, I do.  Q. Thank you.  Just to flesh out the evidence in relation to the extractor fan, could I ask Ralph to take us to page 38 and figure 23.  We looked at this earlier, but I think it may be helpful just to go back, looking at the particular context of the kitchen contractor fan.  13 A. So if I — 14 Q. Sorry, you are on your feet quite a lot during the course of this.  A. So if I'm looking at the very first photograph of figure 24, so the one to the far left, you can begin to see — and looking at these in sequence, simply following one from the other, both in 24 and then in 25 — the flames developing around in a circular pattern, around where this infill was, and those 1 believe to be the flames burning around where the metal extractor fan would be. 2 Q. Thank you. The next matter in relation to materials within what	11	X-rays, micro-CT scanners, scanning electron microscopes	11	so 24 and 25.
Q. Just to bottom off this point, do you agree with the analysis that Dr Glover set out in relation to the extractor fan and that it effectively played no causative role in the initial fire?  A. Yes, I do.  Q. Thank you.  Just to flesh out the evidence in relation to the extractor fan, could I ask Ralph to take us to page 38 and figure 23.  We looked at this earlier, but I think it may be helpful just to go back, looking at the particular context of the kitchen contractor fan.  14 Q. Sorry, you are on your feet quite a lot during the course of this.  A. So if I'm looking at the very first photograph of figure 24, so the one to the far left, you can begin to see — and looking at these in sequence, simply following one from the other, both in 24 and then in 20 25 — the flames developing around in a circular pattern, around where this infill was, and those 21 pattern, around where this infill was, and those 22 I believe to be the flames burning around where the metal extractor fan would be. 23 Thank you. 25 Thank you. 26 Thank you. 27 The next matter in relation to materials within what	12	and so on. All of that is non-destructive in terms of	12	Q. Yes.
analysis that Dr Glover set out in relation to the extractor fan and that it effectively played no causative role in the initial fire?  A. Yes, I do.  O. Thank you.  Just to flesh out the evidence in relation to the extractor fan, could I ask Ralph to take us to page 38 and figure 23.  We looked at this earlier, but I think it may be helpful just to go back, looking at the particular context of the kitchen contractor fan.  25 course of this.  A. So if I'm looking at the very first photograph of figure 24, so the one to the far left, you can begin to see — and looking at these in sequence, simply following one from the other, both in 24 and then in 20 25 — the flames developing around in a circular pattern, around where this infill was, and those 21 believe to be the flames burning around where the 22 metal extractor fan would be. 23 Metal extractor fan would be. 24 helpful just to go back, looking at the particular 25 Context of the kitchen contractor fan.  26 The next matter in relation to materials within what	13	the examination of the particular item.	13	A. So if I
extractor fan and that it effectively played no causative role in the initial fire?  A. Yes, I do.  O. Thank you.  Just to flesh out the evidence in relation to the extractor fan, could I ask Ralph to take us to page 38 and figure 23.  We looked at this earlier, but I think it may be helpful just to go back, looking at the particular context of the kitchen contractor fan.  A. So if I'm looking at the very first photograph of figure 24, so the one to the far left, you can begin to see and looking at these in sequence, simply following one from the other, both in 24 and then in 25 the flames developing around in a circular pattern, around where this infill was, and those I believe to be the flames burning around where the metal extractor fan would be.  Q. Thank you.  The next matter in relation to materials within what	14	Q. Just to bottom off this point, do you agree with the	14	Q. Sorry, you are on your feet quite a lot during the
causative role in the initial fire?  17 figure 24, so the one to the far left, you can begin to 18 A. Yes, I do. 19 Q. Thank you. 19 Just to flesh out the evidence in relation to the 20 extractor fan, could I ask Ralph to take us to page 38 21 extractor fan, could I ask Ralph to take us to page 38 22 and figure 23. 23 We looked at this earlier, but I think it may be 24 helpful just to go back, looking at the particular 25 context of the kitchen contractor fan. 26 If gure 24, so the one to the far left, you can begin to 18 see and looking at these in sequence, simply 19 following one from the other, both in 24 and then in 20 25 the flames developing around in a circular 21 pattern, around where this infill was, and those 22 I believe to be the flames burning around where the 23 metal extractor fan would be. 24 Q. Thank you. 25 The next matter in relation to materials within what	15	analysis that Dr Glover set out in relation to the	15	course of this.
18 See — and looking at these in sequence, simply 19 Q. Thank you. 19 Just to flesh out the evidence in relation to the 20 extractor fan, could I ask Ralph to take us to page 38 21 extractor fan, could I ask Ralph to take us to page 38 22 and figure 23. 23 We looked at this earlier, but I think it may be 24 helpful just to go back, looking at the particular 25 context of the kitchen contractor fan. 28 see — and looking at these in sequence, simply 29 following one from the other, both in 24 and then in 20 25 — the flames developing around in a circular 21 pattern, around where this infill was, and those 22 I believe to be the flames burning around where the 23 metal extractor fan would be. 24 Q. Thank you. 25 The next matter in relation to materials within what	16	extractor fan and that it effectively played no	16	A. So if I'm looking at the very first photograph of
19 Q. Thank you. 20 Just to flesh out the evidence in relation to the 21 extractor fan, could I ask Ralph to take us to page 38 22 and figure 23. 23 We looked at this earlier, but I think it may be 24 helpful just to go back, looking at the particular 25 context of the kitchen contractor fan. 29 following one from the other, both in 24 and then in 20 25 the flames developing around in a circular 21 pattern, around where this infill was, and those 22 I believe to be the flames burning around where the 23 metal extractor fan would be. 24 Q. Thank you. 25 The next matter in relation to materials within what	17	causative role in the initial fire?	17	figure 24, so the one to the far left, you can begin to
Just to flesh out the evidence in relation to the extractor fan, could I ask Ralph to take us to page 38 and figure 23. We looked at this earlier, but I think it may be helpful just to go back, looking at the particular context of the kitchen contractor fan.  20 25 — the flames developing around in a circular pattern, around where this infill was, and those I believe to be the flames burning around where the metal extractor fan would be.  Q. Thank you. The next matter in relation to materials within what	18	A. Yes, I do.	18	see and looking at these in sequence, simply
21 extractor fan, could I ask Ralph to take us to page 38 22 and figure 23. 23 We looked at this earlier, but I think it may be 24 helpful just to go back, looking at the particular 25 context of the kitchen contractor fan. 20 pattern, around where this infill was, and those 22 I believe to be the flames burning around where the 23 metal extractor fan would be. 24 Q. Thank you. 25 The next matter in relation to materials within what	19	Q. Thank you.	19	following one from the other, both in 24 and then in
22 and figure 23.  23 We looked at this earlier, but I think it may be 24 helpful just to go back, looking at the particular 25 context of the kitchen contractor fan.  20 I believe to be the flames burning around where the 23 metal extractor fan would be. 24 Q. Thank you. 25 The next matter in relation to materials within what	20	Just to flesh out the evidence in relation to the	20	25 the flames developing around in a circular
22 and figure 23.  We looked at this earlier, but I think it may be 23 metal extractor fan would be. 24 helpful just to go back, looking at the particular 25 context of the kitchen contractor fan. 22 I believe to be the flames burning around where the 23 metal extractor fan would be. 24 Q. Thank you. 25 The next matter in relation to materials within what	21	extractor fan, could I ask Ralph to take us to page 38	21	
23 We looked at this earlier, but I think it may be 24 helpful just to go back, looking at the particular 25 context of the kitchen contractor fan.  20 metal extractor fan would be. 22 Q. Thank you. 23 The next matter in relation to materials within what	22	and figure 23.	22	
25 context of the kitchen contractor fan.  25 The next matter in relation to materials within what	23	We looked at this earlier, but I think it may be	23	
25 context of the kitchen contractor fan.  25 The next matter in relation to materials within what	24	helpful just to go back, looking at the particular	24	Q. Thank you.
Page 50 Page 52	25	context of the kitchen contractor fan.	25	
Page 50 Page 52		D 50		D 50
		Page 50		Page 52

1	you've identified as the hypothetical area of origin is	1	amplify 8.8.24 on the same page.
2	the presence of any other combustible materials in the	2	Just for the sake of completeness, we've looked at
3	south-east end of the kitchen.	3	this before in the context of the old freezer and the
4	We don't need to go to it, but in your preliminary	4	small fridge, but equally that evidence as well?
5	report you noted there may have been presence of	5	A. Yes.
6	combustible material in the south end of the kitchen.	6	Q. Ralph, if you could de-amplify that and amplify
7	On the basis of the available evidence, is there	7	paragraph 8.8.24 on page 74.
8	anything to suggest the presence of any other	8	Apologies, it's really to draw out, in particular,
9	combustible materials that may have ignited a fire in	9	Firefighter Brown's evidence at the bottom of that
10	the south-east end of the kitchen?	10	paragraph. You relied upon that as well?
11	A. Not that may have ignited a fire. There was evidence	11	A. Yes.
12	presented by the witnesses who lived in the flat to say	12	Q. There you've taken the fridge that he put out to be the
13	that there was a mop and a bucket that was usually	13	tall fridge freezer?
14	stored in that area, and they may have contributed	14	A. Correct, yes.
15	because they may have been combustible. So they may	15	Q. Is there any further evidence that you have seen which
16	have contributed to the fire.	16	would be relevant to this aspect of your consideration
17	Q. Is the position we've reached, therefore, that with the	17	of the evidence as to whether the tall fridge freezer
18	exception of the tall fridge freezer, all other	18	was plugged in and turned on?
19	alternative appliances have been excluded as having any	19	A. By this you mean with the witnesses
20	causative role in the area of origin you've identified	20	Q. Factual witness statement.
21	in the report?	21	A. No, this covers it.
22	A. Yes.	22	Q. The next source of evidence is the thermal images, and
23	Q. Can we turn to the tall fridge freezer now, and could	23	if we could turn to page 32 of your report and
24	I ask you to turn to page 88 in your report and	24	figure 19, again.
25	paragraph 8.8.54.	25	In the particular context of the tall fridge
	Page 53		Page 55
	1 age 33		1 age 33
1	There you say, and I quote:	1	freezer, to what extent have you relied upon this
2	"8.8.54. The combination of witness statements, TIC	2	imaging in identifying the tall fridge freezer as the
3	footage, the fire patterns on the tall fridge freezer	3	area of origin, if at all?
4	and the laminate flooring underneath the tall fridge	4	A. This was more difficult, really because the thermal
5	freezer and the conclusions reached by Dr. Duncan GLOVER	5	imaging camera is showing areas within the kitchen
6	in relation to his electrical examination all indicate	6	towards the window end where there was a greater
7	that it is more likely than not that the area of origin	7	intensity of heat.
8	of the fire was located at the southeast corner of the	8	So in my interpretation of these images, it points
9	kitchen in the tall fridge/freezer located along the	9	out that these areas of greater heat were around the
10	South facing wall."	10	tall fridge freezer as opposed to being within the tall
11	Does that remain your view?	11	fridge freezer.
12	A. Yes, it does.	12	Q. Can I ask Ralph to take us to page 37 of the report and
13	Q. Again, as with the previous hypotheses, if I may take us	13	figure 22.
14	through the various sources of evidence you've relied	14	First of all, what does this show?
15	upon in reaching your view.	15	A. This is a still from the thermal imaging camera just
16	The first source of evidence you've relied upon	16	after the firefighters have extinguished the majority of
17	would be the evidence of Mr Kebede; is that right?	17	the fire in the tall fridge freezer.
18	A. Yes.	18	What it depicts I'll stand up again if we look
19	Q. If I could ask Ralph to take us to page 72, and	19	from the right-hand side across to the left-hand side,
20	paragraph 8.8.23.	20	is the part of the cooker you can just see the cooker
21	Correct me if I'm wrong, but is that the evidence	21	knobs, just around here (Indicates).
22	you've relied upon for concluding that it was only the	22	Q. They're the faint ones in the bottom right-hand corner.
23 24	tall fridge freezer that was plugged in and turned on?	23 24	A. Yes, that's correct.  Then you can begin to see along here (Indicates)
25	A. Yes, that's correct. Q. If I could ask Ralph to de-amplify that paragraph and to	25	Then you can begin to see along here (Indicates), which is about midway in the photograph, a grey line
23	Q. If Feodia ask realph to de-ampiny that paragraph and to	23	minen is about midway in the photograph, a grey line
	Page 54		Page 56
_			14 (Pages 53 to 56)

1	that sames out from the healt of the whotogrowh towards	1	dissolvention on the well which indicates that there	
1 2	that comes out from the back of the photograph towards the front. That's the open door of the bottom	2	discolouration on the wall, which indicates that there was flame impinging or up against that wall.	
3	compartment of the tall fridge freezer.		Then as we move over to the item on the right-hand	
4	The area where the little green box is centred is	4	side, this is the tall fridge freezer, where you can see	
5	the bottom compartment of the tall fridge freezer.	5	significant fire damage within the top compartment of	
6	The area immediately above that, where the blue	6	the fridge freezer.	
7	cross is, is the top compartment of the tall fridge	7	Q. Ralph, if you could de-amplify that photograph, and	
8	freezer.	8	you'll see at the bottom of page 76, there's a second	
9	As you move over towards the left of the photograph,	9	figure 64. If we could amplify that.	
10	and along almost perpendicular to the open door of the	10	Professor, again, if we can look at the photograph	
11	bottom compartment is another grey defined area which	11	on the left-hand side, the burn corrosion patterns on	
12	I believe to be the door of the top of the tall fridge	12	the wall, what can you deduce from them?	
13	freezer.	13	A. The patterns that we're looking at, these patterns here,	
14	Then further on, where my arrow points at and says	14	which are in between the fridge freezer and the side of	
15	"Items between tall fridge freezer and window", which	15	the window, which is here on the left, you're looking at	
16	are now believed to be the mop and the bucket, are	16	a number of things. The patterns on the wall are all	
17	highlighting some items we can just about make out.	17	the way down to the ground, and these patterns are most	
18	Then over further, where the number "129C" is, you	18	likely caused by flame impinging, so flame up against	
19	can just see behind that a silhouette of the	19	the wall from the top to the bottom, or potentially from	
20	firefighter.	20	the top to the bottom.	
21	Q. When looking at area of origin, to what extent does this	21	What you also see is that the laminate flooring in	
22	thermal image assist you?	22	between where the fridge freezer is, and where the side	
23	A. It provides assistance in that it shows some of the	23	of the bottom underneath the window is, is clean, so	
24	early damage to the appliance, which is the tall fridge	24	it's not damaged by fire directly, and next to that you	
25	freezer. It shows that there wasn't damage to the	25	have the tall fridge freezer appliance.	
	D 57		D 70	
	Page 57		Page 59	
1	cooker, and it shows that the damage to the tall fridge	1	Q. Looking at the right-hand side of the photograph, you	
2	freezer was significant in that the door of the top	2	have letters A and B marked on the side of the tall	
3	compartment had come away and the bottom door had	3	fridge freezer.	
4	opened.	4	A. Yes.	
5	Q. In relation to establishing cause, which we'll come on	5	Q. But before we get to that, there appears to be a red	
6	to later on, to what extent, if at all, does this image	6	bag. Can you help us, first of all, with what that red	
7	help?	7	bag is?	
8	A. It doesn't help me at all.	8	A. My understanding of what the red bag is, is that it is	
9	Q. Thank you.	9	a red plastic bag that was put onto a set of cables or	
10	The next source of evidence I'd like to go through	10	conductors that were behind the tall fridge freezer, and	
11	is the corrosion and the burn patterns on the fridge	11	that that bag was attached to those conductors by the	
12	freezer itself.	12	fire investigators in order to try to protect the	
13	Might I ask Ralph to take us to page 76 to start off	13	conductors from damage, would be my understanding of	
14	with. Thank you very much.	14	what they were doing.	
15	Looking at figure 64 in particular and if that could be amplified for these purposes, thank you, Ralph.	15 16	Q. Thank you.  What does capital letter A denote?	
16 17		17		
	Again, professor, first of all, what does this photo show us?	18	A. Capital letter A perhaps we'll take both of them	
18 19		19	together, if you don't mind — capital letter A and capital letter B both depict two different fire	
20	A. What this photograph is showing is — so we're looking down into the corner where the tall fridge freezer was,	20	patterns.	
21	or is. Along the left-hand side, this is the edge of	21	Q. What do you deduce from the fire patterns?	
22	the window. You can see some debris that's sitting on	22	A. So for the fire pattern depicted by the letter A, you	
23	top of the windowsill. As we move closer and over	23	can follow it by looking at the two photographs in	
24	towards the right-hand side, you can see a pattern on	24	comparison with each other. This shows a discolouration	
25	the wall, which is this sort of multicolour or	25	on the side of the tall fridge freezer that runs from	
			· ·	
	Page 58		Page 60	

2 So it's spread out and it's depicted by the red line 3 that I've drawn. It's spread out and runs up the whole 4 length of the appliance. 5 Pattern B is another pattern that runs across the 6 side of the appliance and across, in part, the front 7 door of it, which we'll see, I presume, a little bit 8 on the floor, propper later. 9 What pattern A suggests to me is that the tall 10 fridge freezer on this side — there's a mirroring 11 pattern on the other side of the appliance — is that 12 the appliance was affected by fire from the bottom to 13 the top. 14 What you're seeing is a delamination or a burning 15 off of the paint from the metal, and that's caused 16 a discolouration, and that would've occurred because of 17 direct flame attack on the appliance. 18 Q. If you stay on your feet — I apologise again — if we 19 can look at that mirror image on the other side. Can we 20 turn to figure 65 on page 77. 21 First of all, can you confirm this is the mirror 2 fridge freezer back to be its original proviewed. 3 to be its original proviewed. 4 viewed. 5 If you recall, thi some point and wa viewed. 6 some point and wa on the floor, propp on the floor, propp on the floor, propp on the floor, propp on the red line, and, a we're seeing is a burn to figure 65 on page 77. 20 a ventilation openic appliance.	oor of the top compartment of the k into what they perceive or believe osition, or how it would've been is door fell off the appliance at as found by the fire investigators lying ped beside the bottom door, which was t you're looking at is depicted with again, what you have seen or what urning off of the paint on the door, allowing the door to be bears to move from the left-hand side at I mean it's further down on the in it is on the right-hand side. That consequence of the dynamic nature of I also be a consequence of the s because there was a window, therefore
that I've drawn. It's spread out and runs up the whole length of the appliance.  Pattern B is another pattern that runs across the side of the appliance and across, in part, the front door of it, which we'll see, I presume, a little bit later.  What pattern A suggests to me is that the tall fridge freezer on this side — there's a mirroring pattern on the other side of the appliance — is that the appliance was affected by fire from the bottom to the top.  What you're seeing is a delamination or a burning off of the paint from the metal, and that's caused direct flame attack on the appliance.  We hat mirror image on the other side. Can we left-hand side the fire, or it could movement of gases turn to figure 65 on page 77.  First of all, can you confirm this is the mirror  to be its original poviewed.  If you recall, this some point and was one poin	is door fell off the appliance at as found by the fire investigators lying ped beside the bottom door, which was at you're looking at is depicted with again, what you have seen or what urning off of the paint on the door, allowing the door to be bears to move from the left-hand side at I mean it's further down on the in it is on the right-hand side. That consequence of the dynamic nature of I also be a consequence of the s because there was a window, therefore
length of the appliance.  Pattern B is another pattern that runs across the side of the appliance and across, in part, the front door of it, which we'll see, I presume, a little bit pattern.  What pattern A suggests to me is that the tall fridge freezer on this side — there's a mirroring pattern on the other side of the appliance — is that the tappliance was affected by fire from the bottom to the top.  What you're seeing is a delamination or a burning off of the paint from the metal, and that's caused direct flame attack on the appliance.  We it wiewed.  If you recall, this some point and was on the floor, propping on the floor, propping open.  The pattern that the tall pattern that the red line, and, a we're seeing is a busing it we're seeing is a delamination or a burning the top of corroded.  What you're seeing is a delamination or a burning off of the paint from the metal, and that's caused to the right. By the direct flame attack on the appliance.  Q. If you stay on your feet — I apologise again — if we could be simply and can look at that mirror image on the other side. Can we proved the fire, or it could be simply as the fire, or it could for it were the figure 65 on page 77.  The pattern appliance is to the right. By the fire, or it could be simply as the fire, or it could for it were the figure 65 on page 77.  The pattern appliance is to the right in the fire or it could be simply as the fire, or it could for it were the figure 65 on page 77.  The pattern appliance is a burning on the other side. Can we prove the fire or it could be simply as the fire or it	is door fell off the appliance at as found by the fire investigators lying ped beside the bottom door, which was t you're looking at is depicted with again, what you have seen or what urning off of the paint on the door, allowing the door to be bears to move from the left-hand side at I mean it's further down on the in it is on the right-hand side. That consequence of the dynamic nature of I also be a consequence of the s because there was a window, therefore
Pattern B is another pattern that runs across the side of the appliance and across, in part, the front door of it, which we'll see, I presume, a little bit 7 on the floor, proppellater. 8 open.  What pattern A suggests to me is that the tall 9 The pattern that the red line, and, a pattern on the other side of the appliance — is that 11 we're seeing is a but the appliance was affected by fire from the bottom to 12 surface of the top of the top. 13 corroded.  What you're seeing is a delamination or a burning 14 The pattern appliance off of the paint from the metal, and that's caused 15 to the right. By the a discolouration, and that would've occurred because of 16 left-hand side than direct flame attack on the appliance. 17 could be simply a can look at that mirror image on the other side. Can we 19 movement of gases 10 turn to figure 65 on page 77. 20 a ventilation openic 11 appliance.	as found by the fire investigators lying ped beside the bottom door, which was t you're looking at is depicted with again, what you have seen or what urning off of the paint on the door, allowing the door to be sears to move from the left-hand side that I mean it's further down on the in it is on the right-hand side. That consequence of the dynamic nature of I also be a consequence of the secause there was a window, therefore
side of the appliance and across, in part, the front door of it, which we'll see, I presume, a little bit plater.  What pattern A suggests to me is that the tall fridge freezer on this side — there's a mirroring pattern on the other side of the appliance — is that the appliance was affected by fire from the bottom to the top.  What you're seeing is a delamination or a burning off of the paint from the metal, and that's caused a discolouration, and that would've occurred because of direct flame attack on the appliance.  Q. If you stay on your feet — I apologise again — if we can look at that mirror image on the other side. Can we turn to figure 65 on page 77.  First of all, can you confirm this is the mirror  he floor, propp on the floor, propp open.  The pattern that we're seeing is a burning on the tottom to the red line, and, a we're seeing is a burning of the top of the top.  The pattern app to the right. By the left-hand side than could be simply as the fire, or it could be simply as the fire, or it could be can look at that mirror image on the other side. Can we  First of all, can you confirm this is the mirror  The pattern that the red line, and wa the red line, and wa the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the red line, and, a we're seeing is a burning to the re	as found by the fire investigators lying ped beside the bottom door, which was t you're looking at is depicted with again, what you have seen or what urning off of the paint on the door, allowing the door to be sears to move from the left-hand side that I mean it's further down on the in it is on the right-hand side. That consequence of the dynamic nature of I also be a consequence of the s because there was a window, therefore
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21 First of all, can you confirm this is the mirror 21 <b>appliance.</b>	
	ing, to the left-hand side of that
image to which you were referring in your answer? 22 Q. Understood. That	
23 A. Yes. What you're looking at here is the fridge freezer 23 SIR MARTIN MOOR	RE-BICK: Can I just ask, is the pattern we
has been moved away from the wall that it was up  24 see in this photographic	ph, on what is the front of the
25 <b>against, so it's been moved about some distance away,</b> 25 door, a continuation	n of pattern B on the side?
Page 61	Page 63
1 and we're looking now at if I was standing looking at 1 A. In part. It's a co	ontinuation of the pattern, and it's
	ain that because, of course, we can't
	nensions, but it appears to be
	the patterns on both sides.
	at the photograph quite carefully,
	e where the door is breached on the
	you can just about see the right-hand
/·	freezer, and you can see that that
	almost in line across the door and the
like, of the other pattern, so they both would've 10 right-hand side.	umost in fine across the door and the
occurred more or less at the same time on each side of 11 SIR MARTIN MOC	ORF-RICK: Ves
	essor, thank you. Again, if I could ask
11	r feet sorry about this and ask
14 Q. Again, B is the mirror image of B in figure 64? 14 Ralph to turn to pa	·
	able to split screen figures 67 and
16 Q. Thank you. 16 68 so they are alon	
	can look at figure 67, first of
18 figure 66, just while we're looking at burn patterns on 18 all.	can rook at rigure or, first or
19 the fridge itself. 19 <b>A. Yes.</b>	
	does it show, and secondly, what is
21 Looking at the far left-hand corner, what can we 21 your interpretation	•
, , , , , , , , , , , , , , , , , , , ,	
	ing at the laminate floor that was in the
	n where the fridge freezer originally
	k at it from the right-hand side what the fire investigators have
,	Ü
Page 62	Page 64

1	done is they have cleared away all of the appliances and	1	Again, just for the sake of completeness, professor,
2	they have cleared away most of the debris from this	2	can you identify what this is for us?
3	area. So they've cleared away all of the surface fire	3	A. Yes, these are the portions of the laminate flooring
4	debris and bits of loose materials.	4	taken from immediately under the tall fridge freezer and
5	What they've observed as they've done that across	5	slightly to both sides that were recovered by the fire
6	this laminate floor is that there is an area,	6	investigators from flat 16.
7	highlighted by the red mark, that illustrates an area	7	Q. Tying together the evidence you've given in relation to
8	where the laminate floor has been burnt through. That's	8	the floor burn patterns, and the burn patterns that you
9	significant because the areas on either side of it have	9	identified on the large fridge freezer itself, are you
10	not been burnt through. This area corresponds with the	10	able to give us a conclusion as to where within the
11	positioning of the fridge freezer.	11	large fridge freezer the initial fire may have been, in
12	The white lines, the white arrows, illustrate	12	your view?
13	an area at the back almost matching exactly the	13	A. Looking at these burn patterns in particular, the burn
14	positioning of this burn mark in the laminate. That	14	pattern to the skirting board and also the damage to the
15	shows that the skirting board has also burnt down to	15	sides in particular of the outside of the tall fridge
16	a low point in comparison to the skirting board on both	16	freezer, where the damage runs from the bottom to the
17	sides. That's also significant because it provides	17	top, it would be my view that the fire was originally
18	physical evidence that a fire burnt there to a greater	18	orientated in the base of the fridge freezer.
19	extent than it did to the areas on either side of that	19	Q. Thank you.
20	burn mark.	20	Professor, could I ask you now to turn to page 83 of
21	SIR MARTIN MOORE-BICK: Can we see the remains of the	21	your report, and paragraph 8.845.
22	skirting board at all?	22	Professor, here you say and I quote we are now
23	A. You can just about. If you look very carefully, it	23	looking away from the large fridge freezer itself but
24	looks a little bit more burnt towards the right-hand	24	looking at the fuse box, or what was called the consumer
25	side of the mark, as you can see on the furthermost	25	unit yesterday.
	Page 65		Page 67
1	right arrow, and there are some remains, from what my	1	A. Yes.
2	interpretation of the photograph is, of parts of the	2	Q. You identify here the operation of the MCB.
3	skirting board.		Q. Tou identify here the operation of the MEB.
		1 3	First of all when you refer to the MCB it is in
	9	3 4	First of all, when you refer to the MCB, it is in fact what we were calling vesterday the circuit breaker.
4	MR KINNIER: Ralph, are you able to magnify figure 67	4	fact what we were calling yesterday the circuit breaker;
5	MR KINNIER: Ralph, are you able to magnify figure 67 sufficiently so that Professor Nic Daeid can identify	4 5	fact what we were calling yesterday the circuit breaker; is that right?
4 5 6	MR KINNIER: Ralph, are you able to magnify figure 67 sufficiently so that Professor Nic Daeid can identify the extent of the damage on the right? That's	4 5 6	fact what we were calling yesterday the circuit breaker; is that right?  A. It stands for miniature circuit breaker, yes.
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4 5 6 7 8	MR KINNIER: Ralph, are you able to magnify figure 67 sufficiently so that Professor Nic Daeid can identify the extent of the damage on the right? That's brilliant, thank you.  A. Yes, so you can see along here (Indicates) — and I'm	4 5 6 7 8	fact what we were calling yesterday the circuit breaker; is that right?  A. It stands for miniature circuit breaker, yes.  Q. Just so it can be read into the record, you say here, and I quote:
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1	Q. For the avoidance of doubt, is it your understanding	1	trip'."	
2	that the large fridge freezer was served by circuit 7?	2	Does that remain your view?	
3	A. That's my understanding, yes.	3	A. Yes, it does.	
4	Q. Ralph, if you could de-amplify that paragraph, and if	4	Q. You were in the hearing yesterday.	
5	you could amplify figure 70, and first of all (a).	5	A. Yes.	
6	When you were referring to Mr Kebede's evidence in	6	Q. Is there anything in relation to the examination of	
7	terms of switching off the main switch, there it is	7	circuit number 7 that you would wish to add to what	
8	identified in the down position, indicating off.	8	Dr Glover said yesterday?	
9	A. Yes.	9	A. In terms of the examination of circuit 7, I agree that	
10	Q. If that could be de-amplified, Ralph, and if you could	10	the miniature circuit breaker tripped out or operated as	
11	amplify (b).	11	a result of a short circuit that occurred in	
12	Really, as we were discussing yesterday, next but	12	an appliance that was attached to that circuit.	
13	one from the right-hand side circuit breaker is	13	I'm not in full agreement with some of the other	
14	circuit 7, which is in the off position.	14	electrical evidence that Dr Glover gave, but I'm not	
		15	an electrical expert.	
15	A. Yes, correct.	16	Q. Okay. If we can just deal with the bits figure 71,	
16	Q. Can I now ask you to turn to paragraph 8.8.49. That's	17		
17	at page 85. There you summarise the conclusions in		first of all, at page 86.	
18	Dr Glover's report.	18	Can you first of all explain for us what this is?	
19	My question is: do you agree with the conclusions he	19	A. This is a diagram of the corner of the kitchen of	
20	reached in that report in respect of arc damage?	20	flat 16. We've seen the diagram already. What I have	
21	A. In relation to his identification of arc damage on	21	done on this particular diagram is annotate where the	
22	MJS/1, and JDG/1, yes.	22	various items were that were examined by Dr Glover which	
23	Q. Thank you.	23	were shown to have evidence of electrical activity in	
24	Turning further down to 8.8.50, you say this, and	24	the report and the memo that I was provided with.	
25	I quote:	25	What I've attempted to do is show in this figure	
	Page 69		Dago 71	
	rage 09		Page 71	
1	"8 8 50 Dr. Duncan GLOVER reported that he	1	where these particular items were recovered from so that	
1 2	"8.8.50. Dr. Duncan GLOVER reported that he	1 2	where these particular items were recovered from so that we can put some context and some electrical evidential	
2	observed evidence of alloying damage, that is melting of	2	we can put some context and some electrical evidential	
2 3	observed evidence of alloying damage, that is melting of copper in the presence of another metal which acts to	2 3	we can put some context and some electrical evidential boundaries around where the potential area of origin as	
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1	A. Yes, it does.	1	what's your view as to whether the cause of the fire was
2	Q. Thank you.	2	electrical or non-electrical?
3	Could I turn to the second substantive topic that	3	A. I think, gathering all of the evidence together, and in
4	you dealt with in your report, and that was the cause of	4	particular the physical evidence, which provides, in my
5	the fire. That's dealt with at section 8.9.	5	view, very strong evidence to suggest that the area of
6	In your provisional report we don't need to go to	6	origin of the fire was in the base of the fridge
7	it you suggested that in-depth analysis of the	7	freezer, and that evidence includes the burn patterns on
8	electrical system of the electrical wiring was required.	8	the floor, the skirting board and some of the electrical
9	An examination has been provided by Dr Glover; was	9	evidence from Dr Glover, particularly relating to the
10	that the examination that you were looking for?	10	alloying of the conductors in that area, on the basis of
11	A. In part, yes. I think that the examination up to this	11	that, it would be my view that the cause of the fire was
12	point has been non-destructive. There is also the	12	electrical in origin, but the exact nature of that
13	option of undertaking destructive analysis. That may	13	cause, so what particular electrical components, remains
14	provide further information in regards to the areas of	14	undetermined, in my view.
15	electrical activity that might have occurred.	15	Q. I think you've emphasised in your report that your
16	Q. How productive do you think destructive testing would be	16	expertise doesn't lie in forensic electrical
17	in providing more definitive evidence?	17	examination.
18	A. That's very hard for me to say because I'm not	18	A. Correct.
19	an electrical expert. I'm aware of the fact that there	19	Q. Would it flow from your answer that determining precise
20	is other testing that could be carried out that might	20	cause would be best determined by a forensic
21	provide some greater evidence or more evidence that, for	21	electrical
22	example, electrical activity occurred or electrical	22	A. Yes, absolutely.
23	activity as a result of the fire might have occurred in	23	Q. Thank you.
24	some of the conductors, perhaps, that Dr Glover was	24	Apologies if I'm pressing you on the point, but
25	talking about yesterday.	25	looking as to your answer that it's more likely than not
	Page 73		Page 75
1	Q. In relation to cause itself, could I ask you to turn to	1	that it was an electrical cause
2	· ·	1	that it was an electrical cause
	naragraph X 9 5 at nage XX That was the conclusion you	)	A Flactrical in nature was
	paragraph 8.9.5 at page 88. That was the conclusion you set out in the report in terms of cause, ie it was	2 3	A. Electrical in nature, yes.  O. How confident are you in relation to that conclusion?
3	set out in the report in terms of cause, ie it was	3	Q. How confident are you in relation to that conclusion?
3 4	set out in the report in terms of cause, ie it was undetermined.	3 4	<ul><li>Q. How confident are you in relation to that conclusion?</li><li>A. I'm confident that that's — that's my conclusion.</li></ul>
3 4 5	set out in the report in terms of cause, ie it was undetermined.  Reminding myself that you've set yourself the	3 4 5	<ul> <li>Q. How confident are you in relation to that conclusion?</li> <li>A. I'm confident that that's that's my conclusion.</li> <li>Q. Thank you.</li> </ul>
3 4 5 6	set out in the report in terms of cause, ie it was undetermined.  Reminding myself that you've set yourself the balance of probabilities	3 4 5 6	<ul> <li>Q. How confident are you in relation to that conclusion?</li> <li>A. I'm confident that that's — that's my conclusion.</li> <li>Q. Thank you.</li> <li>The next topic I'd like to cover is the nature of</li> </ul>
3 4 5 6 7	set out in the report in terms of cause, ie it was undetermined.  Reminding myself that you've set yourself the balance of probabilities  A. Sorry, this is not that; this is about the area of	3 4 5 6 7	<ul> <li>Q. How confident are you in relation to that conclusion?</li> <li>A. I'm confident that that's — that's my conclusion.</li> <li>Q. Thank you.  The next topic I'd like to cover is the nature of the cause, and it's really whether it was an accident,</li> </ul>
3 4 5 6 7 8	set out in the report in terms of cause, ie it was undetermined.  Reminding myself that you've set yourself the balance of probabilities  A. Sorry, this is not that; this is about the area of origin, not about the cause.	3 4 5 6 7 8	<ul> <li>Q. How confident are you in relation to that conclusion?</li> <li>A. I'm confident that that's — that's my conclusion.</li> <li>Q. Thank you.  The next topic I'd like to cover is the nature of the cause, and it's really whether it was an accident, deliberate or whatever.</li> </ul>
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1	of the fire; is that	1	items became involved in the fire other than it was
2	A. It's looking for the presence of liquid accelerant	2	after the initial fire in the kitchen.
3	materials or ignitable liquid materials.	3	"There was less fire damage in the adjacent living
4	Q. What was the result of the examination that was carried	4	room than in the kitchen. The sliding doors between
5	out using the services of the hydrocarbon dog?	5	kitchen and living room had burned away and the fire
_	6 A. The dogs are used as a tool simply to try to help the		pattern generated by the combustion of the unplugged old
7	fire investigators in regard to the possible presence of	6 7	freezer and smaller fridge can be seen penetrating into
8	an ignitable liquid. That doesn't necessarily mean the	8	the living room near the opening left by the living room
9	ignitable liquid wasn't there for a legitimate cause.	9	sliding doors"
10	In this particular case, the dog was deployed in the	10	Stopping there, does that remain your view?
11	kitchen, is my understanding, and the result of that	11	A. Yes, it does.
12	particular deployment was a negative result. By that	12	Q. In terms of spread within flat 16, first of all, did you
13	I mean there was no ignitable liquid residue detected as	13	listen to Professor Bisby's evidence?
14	determined by the dog.	14	A. Yes, I did.
15	Q. To be more specific, is it right that the samples of the	15	Q. In light of that, and in light of your broader
16	laminate floor were also analysed for the presence of	16	consideration of the evidence, is there any further
17	ignitable fluid?	17	assistance you can provide the inquiry in relation to
18	A. Yes, they were examined by Key Forensic Services.	18	the spread within the kitchen of flat 16?
19	Q. Again, am I right in thinking that produced a negative	19	A. No, I don't believe so.
20	result?	20	Q. Thank you.
21	A. The conclusion was there was no ignitable liquid present	21	The final topic I'd like your assistance on, really.
22	in those samples.	22	The final question I asked Dr Glover yesterday
23	Q. Are you satisfied that the presence of an external	23	related to experience in the US of metal backings to
24	accelerant, such as petrol or some other similar	24	fridges.
25	substance, in the area of origin can be discounted?	25	First of all, in your experience, have you had any
	Page 77		Page 79
1	A Vos	1	experience or knowledge of the success of metal backs
1	A. Yes.	1 2	experience or knowledge of the success of metal backs
2	Q. Absolutely?	2	containing fires within domestic fridge freezers, or
2 3	Q. Absolutely? A. Yes.	2 3	containing fires within domestic fridge freezers, or domestic fridges, for that matter?
2 3 4	<ul><li>Q. Absolutely?</li><li>A. Yes.</li><li>Q. Is there any evidence you've seen which would indicate</li></ul>	2 3 4	containing fires within domestic fridge freezers, or domestic fridges, for that matter?  A. Only almost a layman's knowledge. So there's been some
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1	questions. We'll rise for 5 minutes to give him that	1	THE WITNESS: Thank you.	
2	opportunity. So if you would like to go with the usher,	2	SIR MARTIN MOORE-BICK: Thank you very much.	
3	we'll come back in 5-minutes' time.	3	(The witness withdrew)	
4	THE WITNESS: Thank you.	4	SIR MARTIN MOORE-BICK: Well, now, Mr Kinnier.	
5	SIR MARTIN MOORE-BICK: Right, Mr Kinnier, I'll say	5	MR KINNIER: Sir, save for one matter, that concludes the	
	6 12 o'clock, then.		6 evidence of today.	
7	MR KINNIER: Thank you, sir.	7	The outstanding matter is that I'm required to read	
8	SIR MARTIN MOORE-BICK: Thank you very much.	8	in certain position statements received by the inquiry.	
9	(11.55 am)	9	If I may ask Ralph to draw up INQ00000533 001.	
10	(A short break)	10	Sir, may I formally read in the position statements	
11	(12.00 pm)	11	of the MHCLG, the Home Office, the LFB, the Mayor of	
12	SIR MARTIN MOORE-BICK: All right, professor?	12	London and RBKC, and the supporting end notes and	
13	THE WITNESS: Yes, thank you.	13	exhibits.	
14	SIR MARTIN MOORE-BICK: I don't know whether there are more	14	SIR MARTIN MOORE-BICK: Thank you.	
15	questions. Perhaps there are today.	15	For the benefit of those who may be wondering what	
16	MR KINNIER: One.	16	on earth you are doing	
17	SIR MARTIN MOORE-BICK: One.	17	MR KINNIER: It has been asked.	
18	MR KINNIER: Thank you, professor.	18	SIR MARTIN MOORE-BICK: these are position statements	
19	First of all, mindful that you're not a forensic	19	which have been provided by those bodies in response to	
20	electrical engineer, was there anything in Dr Glover's	20	requests from the inquiry to tell us what steps they've	
21	report or addendum that caused you to change your view,	21	taken in response to the disaster.	
22	first of all, on area of origin?	22	MR KINNIER: That's right, sir.	
23	A. Could you say that again, please?	23	With that, that concludes today's evidence.	
24	Q. You're not a forensic electrical engineer.	24	SIR MARTIN MOORE-BICK: Good. Well, thank you very much.	
25	A. Yes.	25	So we'll break there. We'll sit again tomorrow at	
			· ·	
	Page 81		Page 83	
1	Q. Was there anything in Dr Glover's report or addendum	1	10 o'clock, when we'll hear from another expert witness	
2	that caused you to change your view on, first of all,	2	to the inquiry.	
3	area of origin?	3	MR KINNIER: Professor Purser.	
4	A. No.	4	SIR MARTIN MOORE-BICK: Good. Thank you very much.	
5	Q. Again, was there anything in Dr Glover's report or	5	10 o'clock tomorrow, please.	
6	addendum that caused you to change your view that, in	6	(12.10 pm)	
7	relation to cause, it was electrical in origin?	7	(The hearing adjourned until Thursday, 29 November 2018	
8	A. It was electrical in nature. That would be how I would	8	at 10.00 am)	
9	put it, yes.	9	INDEX	
10	Q. And there was nothing	10	PROFESSOR NIAMH NIC DAEID (affirmed)1	
11	A. No, sorry, I beg your pardon. No, there was nothing		Questions by MR KINNIER1	
12	that caused me to change my view.	11		
13	MR KINNIER: I'm grateful, professor. That leaves me to say	12		
14	thank you very much for coming to give your evidence	13		
15	today. It's very much appreciated.	14		
16	THE WITNESS: Thank you.	15		
17	SIR MARTIN MOORE-BICK: It certainly is. I would like to	16		
18	thank you very much on behalf of all of us for putting	17		
19	your undoubted expertise at our disposal, for writing	18 19		
20	these reports and coming along to explain them to us.	20		
21	It has been very interesting and useful.	20 21		
22	THE WITNESS: It was a privilege. Thank you.	22		
23	SIR MARTIN MOORE-BICK: That's it, as far as you are	23		
24	concerned. If you would like to go with usher, she'll	24		
25	look after you.	25		
	•	1		
		4	70	
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A	<b>alter</b> 20:11	62:12,13 63:5,21	57:14 66:1	2:25
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