

**IN THE GRENFELL TOWER INQUIRY  
AND IN THE MATTER OF THE INQUIRIES ACT 2005  
AND THE INQUIRY RULES 2006 (SI 2006/1838)**

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**RYDON MAINTENANCE LIMITED'S  
WRITTEN CLOSING SUBMISSIONS  
FOR PHASE 2, MODULES 1 AND 2**

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**CONTENTS**

<b>1</b>	<b>INTRODUCTION .....</b>	<b>3</b>
	Phase 1 .....	3
	Phase 2 .....	5
	Causes of the escape and rapid spread of the fire .....	6
	Responsibility for the causes of the escape and rapid spread of the fire .....	6
	Rydon .....	7
	Rydon's previous submissions .....	9
<b>2</b>	<b>THE BUILDING REGULATIONS/ APPROVED DOCUMENTS.....</b>	<b>9</b>
	Conclusions .....	11
<b>3</b>	<b>ARCONIC AND REYNOBOND 55 PE .....</b>	<b>11</b>
	Introduction .....	11
	2005 to 2012 .....	12
	Late 2012 to 2017 .....	17
	Conclusions .....	28
<b>4</b>	<b>RYDON AND THE SPECIFICATION OF REYNOBOND 55 PE AT GRENFELL TOWER .....</b>	<b>28</b>
	Events leading to the inclusion of RB 55 PE in the NBS Specification.....	28
	Rydon's role regarding the use of RB 55 PE .....	29
	Rydon was led to believe that RB 55 PE was compliant and fit for purpose.....	30
	Installation of RB 55 PE and inspection of works .....	33
	Specific criticisms of Rydon relating to the cladding panels .....	33
	Architectural crown .....	35
	Conclusions .....	35
<b>5</b>	<b>CELOTEX .....</b>	<b>36</b>
	Introduction .....	36
	Celotex's Above 18 Metre team.....	37
	Above 18 Metre test rig subterfuge .....	38
	Misleading marketing materials .....	40
	LABC approval .....	41

Conclusions .....	41
<b>6 RYDON AND THE SPECIFICATION OF CELOTEX RS5000 AT GRENFELL TOWER .....</b>	<b>42</b>
The choice of FR5000 in the NBS Specification .....	42
The choice of RS5000 at the tower .....	42
The Celotex RS5000 datasheet.....	43
Rydon’s reliance on the Celotex datasheet.....	44
Building Control reliance on the LABC materials .....	44
Conclusions .....	45
<b>7 KINGSPAN K15.....</b>	<b>45</b>
Introduction .....	45
Substitution of K15 for RS5000 in May 2015.....	46
Substitution of K15 for RS5000 in September 2015 .....	47
Conclusions .....	48
<b>8 SIDERISE.....</b>	<b>48</b>
Siderise testing.....	48
Siderise infiltration of industry organisations .....	48
Siderise advice at Grenfell Tower .....	49
Conclusions .....	50
<b>9 THE BRITISH BOARD OF AGRÉMENT AND THE BUILDING RESEARCH ESTABLISHMENT .....</b>	<b>51</b>
BBA.....	51
BRE .....	51
Conclusions .....	53
<b>10 THE NATIONAL HOUSE BUILDING COUNCIL .....</b>	<b>53</b>
Conclusions .....	55
<b>11 STUDIO E.....</b>	<b>55</b>
Full plans application and the use of other tools .....	61
Conclusions .....	65
<b>12 HARLEY.....</b>	<b>66</b>
Conclusions .....	68
<b>13 CEP.....</b>	<b>69</b>
Rydon’s reliance.....	69
Introduction of ACM and Reynobond to the Grenfell Tower project.....	69
Assurances given by Arconic to CEP on the use of RB 55 PE .....	69
Fabrication of RB 55 PE into cassettes .....	70
Arconic’s misleading conduct .....	70
Conclusions .....	70
<b>14 EXOVA.....</b>	<b>71</b>
Exova’s role in the refurbishment .....	71
Deficiencies in Exova’s fire strategy reports.....	72

Change in Exova’s position from the start of the Inquiry .....	73
Exova remained employed after Rydon’s appointment .....	73
Ad hoc advice and Rydon’s perception of Exova .....	74
Billing for ad hoc advice .....	75
Exova’s awareness of Reynobond 55 PE and Celotex RS5000, and their use in combination .....	77
Conclusions .....	77
<b>15 BUILDING CONTROL.....</b>	<b>77</b>
Introduction .....	77
Mr Hoban’s appointment.....	78
Checking compliance of materials .....	78
Checking compliance of designs .....	79
Checking compliance of installation .....	80
Conclusions .....	80
<b>16 RYDON AND WINDOW SURROUNDS AND INFILL PANELS.....</b>	<b>81</b>
Window surrounds.....	81
Window infill panels .....	86
<b>17 RYDON’S PROCUREMENT .....</b>	<b>88</b>
Conclusions .....	91
<b>18 PRICES PAID BY RYDON FOR CLADDING MATERIALS.....</b>	<b>92</b>
Conclusions .....	94
<b>19 REGULATION 38.....</b>	<b>95</b>
Regulation 38 in the context of the Inquiry .....	95
Interpretation of Regulation 38 .....	96
Operational firefighting .....	97
Information contained in the O&M Manual and/or H&S File .....	98
Conclusions .....	99
<b>20 CONCLUSION .....</b>	<b>100</b>

## **1 INTRODUCTION**

### **PHASE 1**

- 1.1 When assessing the Phase 2 evidence contained in Modules 1 and 2, the Inquiry will have in mind the many factors that caused or contributed, in varying degrees, to the tragic loss of life, injury and damage at Grenfell Tower.
- 1.2 Those factors include those that resulted in the escape and rapid spread of the fire from Flat 16; those that prevented or hindered efficient evacuation from the tower; and the effectiveness or otherwise of firefighting.

- 1.3 As to the first of those, the Inquiry has, to date, identified in the Phase 1 Report aspects of the refurbishment that were or might have been instrumental in facilitating the escape and rapid spread of fire. These include the following:
- (1) Escape of fire from Flat 16: *“The fire is most likely to have entered the cladding as a result of hot smoke impinging on the uPVC window jamb, causing it to deform and collapse and thereby provide an opening into the cavity between the insulation and the ACM cladding panels through which flames and hot gases could pass. It is, however, possible (but less likely) that flames from the fire in the fridge-freezer passed through the open kitchen window and impinged on the ACM cladding panels above”* (para 2.12.a).
  - (2) Rapid Spread:
    - (a) *“The presence of polyisocyanurate (PIR) and phenolic foam insulation boards behind the ACM panels, and perhaps components of the window surrounds, contributed to the rate and extent of vertical flame spread”* (para 2.13.a);
    - (b) *“The principal reason why the flames spread so rapidly up, down and around the building was the presence of the aluminium composite material (ACM) rainscreen panels with polyethylene cores, which acted as a source of fuel”* (para 2.13.b); and
    - (c) *“The crown was primarily responsible for the spread of the fire horizontally, and the columns were a principal route of downwards fire spread”* (para 2.13.c).
- 1.4 As to the escape of fire, the Inquiry decided that the “*more probable*” mechanism involved the failure of several components. The uPVC window jamb nearer the fridge-freezer deformed at an early stage due to the impingement of hot smoke and, as it deformed, it fell away from the old timber jamb. As it fell away it carried with it the insulation board to which it had been attached by adhesive. This then resulted in a means for the fire to gain access to the cavity between the insulation boards and the ACM panels. Before the fire reached the cavity, it was able to overcome the insignificant resistance posed by the EPDM membrane (para 22.38).
- 1.5 However, the Inquiry also considered that it was possible (indeed also playing “*a significant role*”) that the fire also escaped via the impingement on the ACM panels immediately above the kitchen window of flaming and hot gases, either through an open window or the extractor fan or extractor fan panel (para 22.39). This alternative hypothesis was set out by Professor Bisby, albeit he concluded that the most likely route of flame spread, but only “*by a nose*”, was via the uPVC window jamb (para 22.29). The Report noted in the postscript at para 22.42 that escape findings were provisional pending further expert evidence.
- 1.6 As to the rapid spread of fire, the Inquiry has concluded with a high degree of certainty that it was caused by the ACM cladding and Crown and that the insulation also contributed, with their respective contributions to be determined (paras 23.52 and 23.54).



- 1.7 The Inquiry also considered it likely that some aspects of the design of the cladding system and the geometry of the Tower also contributed to the speed at which the fire travelled vertically, but further evidence was required to reach a firmer conclusion on relative contribution (para 23.52).
- 1.8 There were other factors:
- (1) Vertical cavity barriers which were unlikely to have been effective once fire progressed across the ACM panels and horizontal cavity barriers which allowed dripping polyethylene to form localised pool fires (para 23.59).
  - (2) Ineffective fire doors which allowed smoke and toxic gases to spread through the building more quickly than should have been possible, and missing self-closers which played an important role in allowing this to happen (para 2.14.c).
- 1.9 The Phase 1 Report also found further failures in policies and procedures which, had they not occurred, could have prevented loss of life and injury. These included the “stay put” policy, the inadequacies of evacuation procedures and poor signage. The Inquiry also commented adversely on the training, procedures and response of the Fire and Emergency Services.

## PHASE 2

- 1.10 The Phase 2 evidence to date has been concerned primarily with how Grenfell Tower came to be designed, built and approved with the features that Phase 1 found had caused or contributed to the escape and rapid spread of the fire.
- 1.11 Phase 2 Module 1 considered the history of the project and, in particular, the following Key Issues:
- “1. *Initial decision to undergo refurbishment – reasons for decision, budget.*
  2. *Appointment of professionals by TMO – criteria, roles, interface between professionals.*
  3. *Procurement of Design & Build Contractor – process adopted and compliance.*
  4. *Planning.*
  5. *The cladding – design/selection decisions, compliance (ADB/industry guidance), consideration given to fire safety/risk. With particular focus on:*
    - a. *ACM panels;*
    - b. *Rainscreen Insulation;*
    - c. *Window infill panels;*
    - d. *Windows and window surrounds;*
    - e. *Cavity barriers;*
    - f. *Crown.*
  6. *Fire strategy – pre and post refurbishment – development and adequacy, including consideration of cladding.*
  7. *Building control – with principal focus on façade.”*
- 1.12 Phase 2, Module 2 concerned Cladding Products – Testing/ Certification, Product Marketing/ Promotion. Specifically:

*“In depth analysis of the cladding products used at Grenfell and their history in terms of testing/certification, product development, marketing and promotion, including any advice or recommendations given by manufacturers specific to Grenfell Tower. With particular emphasis on:*

- a. Reynobond ACM panels;*
- b. Rainscreen Insulation, Celotex, Kingspan;*
- c. Window infill panels – Aluglaze;*
- d. Windows and window surrounds – including extract fans/units, EDPM, uPVC;*
- e. Cavity barriers – Siderise.”*

1.13 Rydon seeks to deal with these issues insofar as it is able to assist.

### **CAUSES OF THE ESCAPE AND RAPID SPREAD OF THE FIRE**

1.14 It is of course important to understand the relative causative contribution of the particular features of the building that resulted in the escape and rapid spread of the fire.

1.15 Domestic fires as a result of old or defective appliances or simply as a consequence of accident are commonplace. A building has to be designed and built so that, in the almost inevitable event of such a fire, the building has lines of defence to prevent its spread.

1.16 Fires do escape into cladding systems whether by open windows or otherwise. This is well known. There are many documented cases of fires spread by cladding over the last 15 years or so.

1.17 What is essential is that the cladding system, especially in the case of tower blocks, does not facilitate the spread of fire. If it does not, then the fire is confined and injury and damage is less extensive.

1.18 There can be little doubt as to the dominating causal significance of the ACM rainscreen panels – Arconic Reynobond 55 PE (“**RB 55 PE**”) – to the rapid spread of the fire and the loss of life. As the Inquiry has already found (Phase 1 Report, para 2.13.a):

*“The principal reason why the flames spread so rapidly up, down and around the building was the presence of the aluminium composite material (ACM) rainscreen panels with polyethylene cores, which acted as a source of fuel.”*

1.19 The significance of the insulation, Celotex RS5000 and Kingspan K15, is also discussed in the Phase 1 findings, and has been found (para 23.52) to be a clear contributing factor:

*“[...] the presence of PIR and phenolic foam insulation boards behind the ACM panels [...] contributed to the rate and extent of vertical flame spread”*

1.20 Although the Inquiry has found that the ACM panels and the insulation were the significant causes of the spread of the fire, it has left open the precise contribution of other elements of the Tower. For example, the Inquiry has not determined whether the components of the window surrounds contributed at all to the rate and extent of vertical flame spread; also, the findings as to the vertical and horizontal cavity barriers summarised above.

## RESPONSIBILITY FOR THE CAUSES OF THE ESCAPE AND RAPID SPREAD OF THE FIRE

- 1.21 A central question is: who bears what degree of responsibility for the building having these features?
- 1.22 When discussing responsibility and degrees of responsibility it is important to have in mind the potential different meanings of the word “responsibility”. It can connote moral accountability. The word is sometimes used as a synonym for legal liability (strict or otherwise) under a contract or breach of a common law or statutory legal duty or for criminal conduct. Responsibility can also mean “deserving of blame” regardless of civil or criminal liability.
- 1.23 Rydon is conscious that the Inquiry is not investigating legal liability. When Rydon uses the word “responsibility”, unless otherwise specified, it is in the sense of conduct which may be considered deserving of blame. The responsibility of any particular party can give rise to legal liability, but that is for another forum.
- 1.24 Rydon states from the outset that it considers that the overwhelming and ultimate responsibility for the rapid spread of the fire and the tragic loss of life at Grenfell Tower lies with Arconic, Celotex and Kingspan. Those corporations provided components for use at Grenfell when they knew their use in tower blocks posed a serious risk to the lives of the occupants. The evidence has exposed not just carelessness or incompetence on the part of those corporations but historical and systematic deceit and dishonesty. They set out to mislead those whom they knew made decisions as to the specification and design of cladding systems and their approval for use. They succeeded. As a result, dangerous materials which Arconic, Celotex, and Kingspan knew had not been tested properly and, in some cases, not at all, were installed at Grenfell. Siderise too, was involved in knowingly misleading the market about the effectiveness of its cavity barrier products when used with ACM panels.
- 1.25 The responsibility of any others for those products being installed at Grenfell Tower can only be judged, it is suggested, by an assessment of whether those others could, in all the circumstances, be expected to have discovered the truth and acted differently in any material way. That assessment has to be made in circumstances where Arconic, Celotex and Kingspan were trusted, their products widely used in the UK and the rest of the world and, as has now been revealed to the industry, in dangerous and life-risking situations.

## RYDON

- 1.26 Rydon’s involvement at Grenfell was as a Design and Build (“**D&B**”) Contractor. As the Inquiry is aware, the D&B model is an orthodox method of contracting used for many years in the UK and around the world. Although dependent upon the terms of the particular contract, a D&B contractor commonly takes on some level of contractual liability for all or some part of the design. This is so notwithstanding that important parts of that design will have been started or even completed by or on behalf of the employer before the involvement of the D&B contractor. (Grenfell Tower Inquiry Specialist Report: Architect of Paul Hyett, dated October 2019, (“**Hyett**”) at {**PHYR0000002**}, paras 2.10.1–2.10.5 and 2.10.22)

- 1.27 Features of the D&B model often include the engagement by the D&B contractor of consultants and subcontractors to carry out and fulfil some or all of the design and build functions and obligations taken on by the D&B contractor under the specific terms of its D&B Contract. The terms of those engagements and subcontracts are framed to delegate tasks, and for the consultants and subcontractors to take on the same or similar obligations the D&B contractor may owe to its employer. Those specialists and subcontractors frequently have resources and skills not possessed by the D&B contractor. Delegation in such circumstances is a legitimate and reasonable commercial aim of the terms of these engagements and subcontracts.
- 1.28 A D&B contractor such as Rydon typically seeks to ensure that the architect, other professionals and any other specialist subcontractors it engages are in turn responsible for carrying out their design and build work to the appropriate standards (Hyett at {PHYR0000029}, para 4.1.26).
- 1.29 With regard to the Grenfell Tower project, Rydon entered into an amended form of JCT Design and Build Contract with KCTMO dated 30 October 2014 {TMO00829066} (the “**D&B Contract**”).
- 1.30 The contractual obligations owed by Rydon to KCTMO are set out in the terms of the D&B Contract. Rydon draws particular attention to clauses 2.17.1 and 2.17.2 of the terms and conditions:
- “2.17.1 The Contractor shall (to the extent set out in clause 2.17.2.1 below) be fully responsible in all respects for the design of the Works including: [...]*
- [...]*
- 2.17.2 Without prejudice to any expressed or implied warranties or conditions or to the generality of clause 2.17.1, the Contractor warrants to the employer that:*
- 2.17.2.1 the design of the Works (including any design carried out by any design consultant or any sub contractor with design responsibility or by any other person whether or not employed or engaged by the Contractor) has been and will be carried out **using all the reasonable skill and care to be expected of a professionally qualified and competent design and build contractor experienced in the carrying out of such work for projects of a similar size scope value character and complexity to the Works; [...]**”*
- (Emphasis added)
- 1.31 Rydon’s responsibility in these provisions is defined by reference to the use of all the reasonable skill and care to be expected of a professionally qualified and competent design and build contractor experienced in the carrying out of such work for projects of a similar size scope value character and complexity to the Works. It is against that standard, Rydon submits, that any allegations of blameworthy conduct aimed at it should be judged.
- 1.32 In engaging architects, specialist cladding subcontractors and other subcontractors Rydon truly believes that it fulfilled that duty, properly delegating design and installation tasks, including that of specification, design and approvals, under agreements which obliged those engaged to ensure the completed refurbishment project was safe and complied with the Building Regulations (the “**BRs**”).

- 1.33 To what extent, if any, Rydon is to be blamed for not being aware that the manufacturers' claims about their products were false and misleading can only be fairly assessed by reference to the context in which it was engaged in the Grenfell project and many other factors.
- 1.34 Those factors include what must now not be in any doubt – that the relevant BRs and, in particular, the accompanying Approved Documents (the “**ADs**”) to which the works were to comply were poorly drafted and confusing. Also material is that manufacturers such as Arconic, Celotex, Kingspan and Siderise set out to exploit that fact. The British Board of Agrément (“**BBA**”) certificates, universally relied upon in the construction industry in the UK, were, as a result of the manufacturers' dishonesty (abetted by the lack of rigour at the Building Research Establishment (“**BRE**”) testing house and by BBA in its procedures and conduct), highly misleading.
- 1.35 It is also material that Rydon did not design or specify the cladding or insulation. It engaged, in good faith, the architects already appointed and familiar with the project, Studio E, to ensure compliance of the design with the BRs. Rydon also engaged the specialist cladding subcontractor Harley under a contract which obliged Harley to design and install compliant and safe material. Further, Rydon was not told by the fire engineer, Exova, that these materials should not be installed, nor was it told by the professionals it engaged that it needed to take the advice of a fire engineer. The design was passed by those responsible for ensuring compliance with the BRs, RBKC Building Control (“**RBKC BC**”).
- 1.36 Rydon sincerely believes that it is not to blame for the use of the RB 55 PE cladding, Celotex RS5000 or Kingspan K15 at Grenfell Tower. The use of these products was the fundamental and underlying cause of the tragedy.
- 1.37 In these Closing Submissions Rydon also addresses other questions raised about its conduct, including those related to the installation of the cavity barriers, window surrounds and infill panels. It also addresses matters raised during the course of Modules 1–2 which, although not related to the physical features of the building, have been the source of criticism of Rydon, such as procurement, price negotiation and Regulation 38.

## **RYDON'S PREVIOUS SUBMISSIONS**

- 1.38 Rydon refers the Inquiry to its previous written Opening Submissions to each of the Phase 2 Modules 1 (dated 7 January 2020 {**RYD00094360**}) and 2 (dated 16 October 2020 {**RYD00094561**}). It supplemented its written Opening Submissions to Modules 1 and 2 with oral submissions made on 27 January 2020 {**Day1/56**} – {**Day1/90**} and 9 November 2020 {**Day67/56**} – {**Day67/94**} respectively.

## **2 THE BUILDING REGULATIONS/ APPROVED DOCUMENTS**

- 2.1 The relevant regulatory regime is the backdrop against which the responsibility of those who specified and installed and allowed the specification and installation of ACM and insulation and other products at Grenfell is to be considered.
- 2.2 The Inquiry will consider this regime and its history further in Module 6, but, so far, has heard evidence concerning how different parties viewed and interpreted the BRs and the ADs.



- 2.3 The evidence during the Inquiry was all one way – the relevant BRs and ADs addressing the fire safety of buildings and, in particular buildings above 18 m in height, lacked clarity. AD B in particular was poorly drafted and confusing.
- 2.4 The Independent Review of Building Regulations and Fire Safety: Interim Report dated December 2017, chaired by Dame Judith Hackitt DBE FREng concluded amongst other things (at {CLG10003161/10}) that:
- “The work of the review to date has found that the current regulatory system for ensuring fire safety in high-rise and complex buildings is not fit for purpose.”*
- 2.5 The key reasons for this failure were stated to include (*ibid*) that:
- “Current regulations and guidance are too complex and unclear. This can lead to confusion and misinterpretation in their application to high-rise and complex buildings.”*
- 2.6 This lack of clarity left the BRs and the ADs open to deliberate exploitation by manufacturers such as Arconic, Celotex, Kingspan and Siderise to sell dangerous products into the market.
- 2.7 Their lack of clarity is evident from the evidence given by the Inquiry experts and by the parties involved in specifying, approving and installing of products and systems at Grenfell Tower. It is also evident from the widespread use in the UK of non-compliant products in residential blocks including ACMs and PIR and phenolic insulation.
- 2.8 This state of affairs appears to have been consequent on Government inertia. In the aftermath of the fire at Lakanal House and the six deaths, the coroner, HH Frances Kirkham CBE, sent a series of letters to public bodies containing recommendations for the prevention of future deaths, pursuant to r 43 of the Coroners Rules 1984 (as then in force). This included a 28 March 2013 letter to the Department for Communities and Local Government (“DCLG”), to review the official guidance “*with particular regard to the spread of fire over the external envelope of the building*” {CLG00019976/3}.
- 2.9 Below are some examples of the confusion and differing interpretations in this area:
- (1) Mr Hyett is critical of the confusing drafting of AD B, leaving him “*somewhere between disappointed and appalled*” {Day64/107} – {Day64/108}.
  - (2) On ACM, Mr Hyett’s view (subject to qualifications) is that “*the guidance within ADB2 (at that time) endorsed, in principle at least, the use of the Reynobond Aluminium Composite Panels for use on a project such as Grenfell Tower*”: {PHYR0000003/27}.
  - (3) Mr Sakula also notes that a reasonably competent cladding contractor would have interpreted AD B2 and Diagram 40 as permitting the use of ACM on a project such as Grenfell Tower: {JOS00000001/59–60}, paras 17.4–17.10.
  - (4) Dr Lane expresses concern about AD B and diagram 40 in this regard, advising that “*these are changed as soon as possible*”: {BLAS0000011/6}.
  - (5) On the application of para 12.7 of AD B2 to ACM, Mr Hyett is clear that “*I would never have interpreted the polyethylene core of an ACP panel to be a ‘filler material’*”: {PHYR0000029/35}, para 4.2.44.



- (6) Beryl Menzies noted “*a range of views within the industry about the interpretation of ADB paragraph 12.7*” {**BMER0000001/123**}, concluding that “*At the time of the Grenfell Tower works my understanding of filler material was that it did not include the core of a cladding panel such as ACM*”: {**BMER0000001/124**}.
- (7) Dr Lane concludes that the ACM core is not “filler” within the meaning of para 12.7: {**BLAS0000027/54**}.
- (8) Yet DCLG (now MHCLG) wrote to Local Authorities on 22 June 2017 directing them that “*For the avoidance of doubt; the core (filler) within an Aluminium Composite Material (ACM) is an “insulation material/product”, “insulation product”, and/or “filler material” as referred to in Paragraph 12.7 [of AD B2]*”: {**HOM00049019**}.
- (9) Mr Hyett’s evidence was that para 12.7 applied to the window infill panels but recognised that others could take a different view: {**Day65/25**}.

## CONCLUSIONS

- 2.10 This lack of clarity is an important factor when considering the performance of all those involved in the Grenfell project and in particular what they should be expected to know or not know. This is particularly so when considering the role of a D&B Contractor who seeks to delegate particular and identified functions to architects and specialist cladding contractors, and is cognisant of the oversight of Building Control.

## 3 ARCONIC AND REYNOBOND 55 PE

### INTRODUCTION

- 3.1 Rydon starts with consideration of Arconic’s role; it was the RB 55 PE panels manufactured and supplied by Arconic which were the main contributing factor to the rapid spread of the fire. Rydon refers to its Phase 2 Module 2 written Opening Submissions: {**RYD00094561**}, paras 6–131.
- 3.2 The Inquiry heard from Ms Deborah French, Mr Vince Meakins and Mr Claude Schmidt. Ms French and Mr Meakins were the UK sales representatives for Arconic’s Reynobond products, the former until December 2014 and the latter from May 2015. Mr Schmidt was Arconic’s General Manager based in Merxheim, France. Claude Wehrle, Arconic’s head of technical support; Peter Froehlich, Arconic’s product manager for the Reynobond products and Gwenaelle Derrendinger, a sales assistant based in Merxheim, were asked but declined to give evidence to the Inquiry.
- 3.3 Arconic’s product, RB 55 PE is, of course, one type of ACM. As of 31 March 2021, MHCLG’s figure for the “*Number of high-rise residential and publicly owned buildings identified with ACM cladding systems unlikely to meet Building Regulations*” in the UK is **469**. This includes social and private sector residences, student accommodation, hotels and publicly owned buildings.

([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/978047/Table\\_1\\_Building\\_Safety\\_Data\\_Release\\_March\\_2021.csv/preview](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/978047/Table_1_Building_Safety_Data_Release_March_2021.csv/preview), accessed 7 May 2021.)

- 3.4 The specification and use of unsuitable ACMs in high rise buildings in the UK can only be explained as a result of a widespread misunderstanding among those in the construction industry and those tasked with monitoring compliance with the BRs as to:
- (1) the requirements of the BRs and the meaning of AD guidance given as to the particular characteristics which products and systems are required to have in order to comply with the BRs; and
  - (2) the characteristics of ACMs as stand-alone products or when used in combination with other building materials and their compliance or non-compliance with the BRs and ADs.
- 3.5 Rydon contends that this widespread use has come about in the UK primarily as a result of the deliberate exploitation of those misunderstandings by the manufacturers of ACMs and Arconic in particular.
- 3.6 ACMs with a PE core were sold in the UK by various other companies as well as Arconic, including Alucobond (produced by 3A Composites), Alpolic (produced by Mitsubishi Chemicals) and Alucoil (produced by Larson): French 1<sup>st</sup> W/S {MET00053162/9}, para 33.
- 3.7 RB 55 PE, manufactured by Arconic, is one of the ACMs in use in the UK. RB 55 PE was Arconic's standard product: *"it was rare for a customer in the UK to order Reynobond FR. Indeed, I cannot remember a specific occasion on which I sold FR, although I cannot say for certain that it never happened"*: French 1<sup>st</sup> W/S {MET00053162/8}, para 32.

## 2005 TO 2012

- 3.8 The Inquiry is aware that ACM must be fabricated before use on a building and that it can be fabricated into either rivet-fixed or cassette panels. Use of cassettes is aesthetically more popular but more expensive than rivet-fixed panels.
- 3.9 Arconic knew that to sell its RB 55 PE product it needed an acceptable and accredited fire classification.
- 3.10 On 7 January 2005, the CSTB issued a reaction to fire classification report {ARC00000360}. The test on RB 55 PE formed into a cassette panel was stopped after 850 seconds. Dr Lane opines that the results meant that it was Class E in accordance with test standards EN 13823 and EN 11925-2. The same day CSTB reported that RB 55 PE, when used in riveted panels, was Class B-s2, d0 {ARC00000359}. The classifications, valid for 5 years, lapsed in January 2010.
- 3.11 Even though the cassette, in effect, failed the test, Arconic did not seek then to carry out further tests. It is suggested that Arconic suspected or knew that such tests would not likely give better results. Mr Schmidt appeared to accept that it was *"irrational and irresponsible not to carry out further tests to establish whether the cassette system performed as badly as the first test suggested"*: {Day91/103:3–10}.
- 3.12 The test failure should have presented a problem for Arconic: as recorded in minutes of a meeting in Luton on 21 March 2006 attended by Arconic's Didier Scheidecker (Sales Manager based in France) and Colin Southgate (UK Sales Manager), by 2006, Arconic viewed cassette fixed RB 55 PE as key to the market and a *"real trend"*: {MET00053158\_P13/161–165}.

- 3.13 Arconic also considered that a favourable BBA certificate was a necessity to get traction for RB 55 PE in the UK market. Arconic knew the reliance put on such certification by construction professionals. Ms French says *“I understood that it [the BBA certificate] was the main document that people would look for when buying the product”*: {Day87/133:8–9}.
- 3.14 From a report written by Mr Southgate on 6 November 2006 {MET00053158\_P14/114}, copied widely within Arconic, Arconic visited the BBA in Watford on 2 November 2006 and threatened to stop all dealings with the BBA *“unless a satisfactory solution was found re both the above potential approvals”*. This appears to refer to RB 55, FR or PE and in cassette or rivet form. The report records Mr Southgate saying: *“I have suggested that it could be better to validate the material RB rather than the whole system. This way a cross connection can be put together”* {MET00053158\_P14/115}.
- 3.15 On 7 February 2007, Arconic reported on a visit to BBA to discuss certification {MET00053158\_P14/131}. The report, includes the following:
- “The BBA agrees to make the certification on the product without to be linked to a specific system.*
- Possible fixing system will be simply in the certification.*
- It means we will have only 1 approval for all our applications, instead to make on approval per system.*
- If people will ask for more details we will use the CSTB specific approvals”*
- 3.16 On 24 December 2007 BBA sent Mr Wehrle the Final Draft of the BBA certificate {MET00053158\_P16/155–164}. It certified RB 55 PE cassette and rivet fixed. It was circulated within Arconic. Ms French emailed Mr Wehrle and Mr Southgate on 2 January 2008 stating that she had looked through the draft and it looked OK to her {MET00053158\_P16/165–166}. Her evidence {Day87/136:6} that the reason why she was being asked to look at it *“was possibly more to do with the English”* was implausible. As a sales person she would have to understand the certificate to enable her to answer questions from customers. It was, as she acknowledged, an important document for customers whom Arconic and she knew would rely on it: {Day87/143:7–12}. Mr Schmidt accepted that it was Mr Wehrle’s job (or his team’s) to know what was in the BBA certificate {Day92/63:12–19} and that Mr Wehrle was involved in the detailed drafting and approval of the BBA certificate {Day92/70:12–24}.
- 3.17 The BBA certificate contract was signed by Arconic on 21 February 2007 and by the BBA on 23 March 2007 {BBA00010725}. The BBA certificate was issued on 14 January 2008 {ARC00000678}. There had been no test under the relevant British Standards in which any form of RB 55 PE had achieved a Class 0. There had been no systems tests. The BBA certificate stated that RB 55 PE, whether cassette or rivet fixed, may be regarded as having a Class 0 classification on the basis of RB 55 PE being Euroclass B. Moreover the certificate did not materially distinguish between Arconic’s PE or FR products. It therefore wrongly endorsed PE fabricated in cassette form as having the same characteristics as riveted PE – both being classed B-s2, d0 in accordance with EN 13501-1:2002 {BBA00008210/3}. Arconic hid

the CSTB Class E result for cassettes obtained in 2005 from the BBA. Ms French had to agree that the certificate was misleading {Day87/156:8} – {Day87/157:22}.

- 3.18 Arconic ensured that the lack of certification for the cassette system was hidden within the ostensibly better certified performance of the riveted system.
- 3.19 Additionally, and independent of Arconic’s procurement of the misleading BBA certificate, Arconic knew from very early on that RB 55 PE was dangerous when used for residential blocks.
- 3.20 During the time when the BBA was assessing RB 55 for certification, Arconic visited a firm called Astrup in Oslo on 11 to 13 September 2007. During the visit, a presentation was given by a Mr Fred-Roderich Pohl {META00001953}. A report of the visit was written by one Gerard Sonntag. Mr Pohl compared the fuel power of 5,000 m<sup>2</sup> of PE cored ACM with a truck of 19,000 litres of oil. He showed pictures of ACM fires and a video from a tower in Doha of how quickly a fire can spread with PE ACM cladding. Mr Sonntag reported that Mr Pohl said:

*“what will happened if only one building made out of PE core is in fire and will kill 60 to 70 persons, what is the responsibility of the ACM supplier.*

*If we want not to take any risk for anyone and be proud of the EHS value of Alcoa we should evaluate a new option in our LT strategic analysis. What could be the financial results and impact on the market if Alcoa decide to sale Reynobond Architecture only with an FR core and launch it on BAU 2009. In parallel, we should of course in this case launch a cost reduction program to become able to produce the FR to the cost of the PE”*

- 3.21 The presentation relates to all PE ACM products, not just PE ACM fabricated into cassettes. But Arconic did not even pause. It decided, in effect, to risk the lives of future occupants of buildings clad in its PE product. It proceeded to promote cassettes – the most dangerous form of RB PE.
- 3.22 If Mr Pohl’s prophesy was not enough, in 2009, Arconic became aware of a fire involving a PE ACM product in Bucharest, Romania. Mr Wehrle messaged Claude Schmidt (General Manager/President of Arconic Architectural Products SAS) on 17 July 2009 {MET00053158\_P10/122–126} and {MET00053158\_P10/129–130}:

*“Here are some pictures to show you how **dangerous** “PE” can be when it comes to architecture... [...] The others [pictures] show the spread of the fire along the façade made up of PE composite panels.” (Emphasis added)*

- 3.23 On 15 March 2010, Mr Wehrle {MET00064988/125–126}, referring to the cassette form of its PE product, emails Mr Scheidecker and other Arconic personnel, stating:

*“Contrariwise to what might be expected, the above type of test is much less favorable for the composite than for riveted products. And Reynobond PE in cassette form doesn’t obtain level “B” either! Having said that, this shortfall in relation to this standard is something that we have to keep as VERY CONFIDENTIAL!!!!”*

- 3.24 Mr Scheidecker responds directly to Mr Wehrle: *“This shouldn’t even have been mentioned.”* Arconic knew that if the truth emerged about cassette being Class E and more dangerous than rivet, the market would



become aware of Arconic's deception. Mr Schmidt appeared to accept that this demonstrates that Arconic deliberately misled its customers {Day93/53:4–14}.

- 3.25 Between 1 and 5 July 2010 there were email exchanges {MET00053158\_P04/2–5} between Bruno Costa (of Inor S.A., presumably a customer), Isabel Moyses (Arconic Sales Manager based in France) and Mr Wehrle. Mr Costa was pressing for a copy of the fire certificate for RB PE in cassette form. In response he was sent the certificate for the riveted form, which he was told by both Ms Moyses and Mr Wehrle was *less* safe than the cassette, when in fact the CSTB testing showed that the absolute opposite was true. Internally, Mr Wehrle said to Ms Moyses, *"It's hard to make a note about this... Because we're not 'clean'..."*. The comment speaks for itself. Mr Schmidt accepted that this shows Mr Wehrle lying to customers {Day93/65:25} – {Day93/66:5}.
- 3.26 In a further CSTB test dated 9 February 2011, RB 55 PE in rivet form achieved B-s1, d0 {ARC00000383}. This test used a set up with a minimum air gap of 50 mm. The 50 mm air gap had also been used in the 2005 test (Test 5A). An email of 1 July 2011 from Mr Wehrle {MET00053158/184} suggests that he thought a 20 mm air gap was the appropriate gap for testing *"because that's how they are used"*. In subsequent tests, with a 20 mm gap, RB 55 PE in rivet form never achieved an EN 13501 "B" classification. Even the test for the rivet form of RB 55 PE used to obtain a Class B rating, which in turn was used to surmise a Class 0 rating in the BBA certificate for the cassette form, had been manipulated by Arconic to get a misleading rating.
- 3.27 Mr Wehrle says (W/S {MET00053190/18}, para 62) that on 29 March 2011 he asked the CSTB what was the best classification that could be obtained for cassettes. His explanation as to why he was inquiring 6 years after the failure – that he wanted to check his understanding that cassettes performed *better* than rivet – is implausible. He had no foundation for any such understanding.
- 3.28 On 29 June 2011, when tested by the CSTB, RB 55 PE cassettes achieved an "F" classification. Mr Wehrle responded more it is suggested in hope than expectation, asking whether it was *"far from a D classification?"*. This result was passed on by Mr Wehrle to those in Arconic: He said *"Oops..."* {MET00053158\_P04/14}. It is doubtful that this was a real surprise as he suggests at para 63 of his W/S {MET00053190/18}. His theory as to why it performed less well than rivet is detailed. It is unlikely that this theory just came to him then. In reality, Mr Wehrle never had any rational basis for concluding that cassette performed better.
- 3.29 On 30 June 2011, Mr Wehrle wrote to Guy Scheidecker (Sales Director) {MET00053158\_P04/26–27} asking for a meeting to discuss the cassette PE test results adding:

*"In 2008, at a meeting, I stated that PE was in danger of becoming 'or' for Architecture in Western Europe.*

*In 2011... we're not there yet, but almost there!*

*The classification obtained for the Reynobond PE cassettes is the same as that of the competitors, i.e. "F", and therefore **not suitable for use** on building facades (M4 in France for example)..."*

(Emphasis added)

- 3.30 There is no record of the meeting in 2008. However, not only did Mr Wehrle consider, 6 years before the fire at Grenfell Tower, that PE (cassette or riveted) would be banned, he considered that PE when fabricated into cassettes was “*not suitable for use on building facades*” because it was an “F”. Mr Schmidt professed not to recall any discussions surrounding Mr Wehrle’s conclusions {Day94/9:1} – {Day94/10:4}.
- 3.31 On 1 July 2011, the BBA sent a review report to Mr Wehrle stating that the BBA certificate for RB 55 PE was valid until 2014. This is in circumstances where Mr Wehrle knew of the 2011 PE cassettes test failure. His explanation at para 59 of his W/S {MET00053190/17}, to the effect that Arconic did not need to tell the BBA because it was irrelevant to achieving Class 0 is contrived and fanciful. His assertion that in any event he had “*every confidence in the on-going audit processes that the certification bodies conduct*” is disingenuous.
- 3.32 On 6 July 2011, Mr Wehrle produced a report of a meeting in Freiburg with Frank Ritter (3A Composites) to discuss “*Changes in ACM use for Architecture*” {MET00053161/21–22}, “Architecture” here meaning use in the construction of buildings, as opposed to advertising signage, and similar. The report contains a table listing Reynobond PE cassette as Class E, and PE (riveted) and both fixings of FR as Class B-s1, d0. It states:

“European fire regulation

Remind:

*The European fire reaction classification norm EN 13501 is testing the product in his installation conditions.*

*After the tests we did, the classifications for Reynobond in cassettes and riveted/sc[r]ewed system are: [Euroclass E for RB 55 PE cassette; Euroclass B-s1, d0 for all others including RB 55 FR cassette]*

*A “B class” is the minimum required for a façade in Europe.”*

- 3.33 The report continues:

*“For the moment, even if we know that PE material in cassette has a bad behavior exposed to fire, we can still work with national regulations who are not as restrictive.*

*Some count[r]ies (Spain...) are already working with EN13501 standards, and the PE in cassettes is no more usable there.*

*The evolution of fire regulation will put the PE out of market in the coming month.”*

- 3.34 Arconic knew PE to be dangerous. Arconic were “working with” what it saw as lax or confusing regulations to enable it to sell a highly dangerous product in a period before it anticipated an unambiguous regulatory blanket ban. To top it off, it was using a misleading BBA certificate to do so.
- 3.35 Ms French says she knew nothing. She did not know that cassette variant of RB 55 PE was in fact no better than Class E {Day88/23:5–21}; that PE cassette had a bad behaviour in fire {Day88/24:9–12} or that, notwithstanding, Arconic had decided to continue selling PE cassette in the UK {Day88/25:8–12}.



If she is to be believed, then Arconic high command was misleading its own staff. If not, she was complicit.

- 3.36 Between 6 and 23 September 2011, there is an email exchange in which Ms French asks Mr Wehrle whether she can send a client (Arup) *“these two documents showing the details of FR and PE core [...] I am unsure as they give a lot of detail !”* Mr Wehrle responds:

*“OH MY LORD !!! Where did you get that from ??? For sure you’re NOT allowed to diffuse to the customer those documents. The best way to answer is to speak about the difference of fire classification on the panels containing FR compared to those ones containing PE.”*

- 3.37 He sends a follow-up email {MET00053173/48–49}, {MET00053173/29–40} saying:

*“FR core is done with 30% organic part and 70% mineral part PE is only organic. As organic is the material that is going to burn in case of a fire, FR is better”*

- 3.38 There is plain recognition that its PE product *“is going to burn in case of fire”*. Within Arconic is plain panic that customers might get to learn the truth.

- 3.39 On 23 November 2011 {MET00053158\_P04/54}, Mr Wehrle wrote to Jordi Gonzalez of Alotark Arquitectos regarding a project called Endesa:

*“Cladding systems for projects in Spain have to be classified B-s3,d2 minimum [...] For the Reynobond FR, our riveted and cassette systems are both B-s1,d0. For the Reynobond PE, our riveted systems are B-s1,d0 and our cassette systems are E. The ENDEA project is made with cassettes, therefore, we recommend you to use our Reynobond FR product.”*

- 3.40 Mr Gonzalez (Alotark) responds to the letter {MET00064988/34} asking for:

*“a brief explanation about how the fire reaction test have changed, how did they affected to the PE and why if riveted system gets B-s1-d0, the cassette one goes straight to E what, if you let me be sarcastic, is close to the spontaneous combustion.”*

- 3.41 It is self-evident that Arconic knew that it was wrong (1) to represent through the BBA certificate that cassettes were EN Class B; and (2) to continue to allow the use of RB PE in cassette form anywhere in the world. Had he given evidence, Mr Wehrle, if candid, would have been forced to admit it. Mr Schmidt’s evidence was evasive. He accepted that Arconic accepted responsibility for the sale of RB 55 PE to the UK market *“on a false basis”* by providing *“incomplete information”*. He then sought to backtrack {Day91/18:1} – {Day91/19:6}.

- 3.42 Mr Wehrle then appears to have some concern about Arconic’s dishonesty, and writes to Claude Schmidt and Peter Froehlich on 29 May 2012 {MET00053161/11} saying *“we have to take a decision for the class we are going to give the market for this product”*. He writes to Mr Schmidt on 15 June 2012 {MET00053158\_P02/195}. Mr Schmidt rejects the meeting invite with subject line *“RB ARC - UK he beacon + fire for PE”* stating *“Please specify subject. I don’t accept meetings without knowing what it will be about.”*

- 3.43 Mr Wehrle responds:

*“I thought the subject matter was sufficiently clear. Two issues must be considered: [...]*

*2- Reynobond PE and its fire classification is a serious issue in Europe, and we would like to hear your opinion on the position to be held on the market.”*

- 3.44 Mr Wehrle’s W/S {MET00053190/28}, para 96 suggests that as a result of a discussion (which Mr Schmidt says he does not recall {Day93/100:5–7}), the reference to EN Class B was removed in marketing documents and that it was decided that sales teams in different jurisdictions should be told of the EN Class E classifications so that customers could be informed when asking. This is probably untrue. Ms French says that she does not recall being told that RB 55 PE was no longer Euroclass B or being told to inform customers it was now E {Day88/39:14–21}. Mr Wehrle is almost certainly not telling the truth about what the sales teams were told. It is notable that even on Mr Wehrle’s account, if the customer did not ask, they would not be told and remain deceived. Whatever, Arconic continued to market and supply RB 55 PE, leaving it to customers to see if they could discover that cassettes had an E class and were dangerous. Mr Schmidt admitted, in a somewhat gross understatement, that it was a risky practice. {Day93/111:8–12}.

#### **LATE 2012 TO 2017**

- 3.45 Rydon’s involvement and its knowledge of RB 55 PE is considered in Section 4 below. Suffice it to say here, Arconic’s involvement in Grenfell Tower started early, and well before that of Rydon.
- 3.46 In October 2012, a meeting took place between Arconic, CEP and Studio E {CEP000005292} and {LBI00000616}. Ms French attended the meeting, Geof Blades on behalf of CEP, and Bruce Sounes on behalf of Studio E. Ms French confirmed that Arconic in the UK regarded their main customer base as fabricators and architects {Day88/47:1–13}. Ms French promoted Arconic’s ZCM and ACM, i.e., RB PE. {Day41/91:25} – {Day41/92:3}. Mr Sounes recalled that he talked about the fact that Grenfell Tower was a multiple-storey residential block {Day20/96:14–17} and that “zinc effect” ACM panels were discussed as an alternative to zinc {Day20/97:18} – {Day20/98:1}. Ms French knew the building to be high rise {Day88/66:18–23}.
- 3.47 Soon after, on 27 November 2012 {MET00053157/40–43} an Arconic email exchange (Robert Quattrocchi to Alain Flacon, Claude Wehrle, Hafid Asserrar (and cc Claude Schmidt)), attached a news article on the Tamweel Tower cladding fire in UAE:

*“For your information. ACM facade caught fire in UAE. Read the article. There is a link to BBC photos. There is a protective film, but there is no way to see the brand. I think it is worth digging into.”*

- 3.48 Mr Wehrle responded:

*“This has to do with Gutbond PE - Knowing that all PE composites react the same way”*

- 3.49 Note Mr Wehrle refers to *all* PE products, not just those fashioned into cassettes.
- 3.50 On 24 January 2013, Arconic received an email from CEP {CEP00048962} with drawings and specifications showing the height and dimensions of Grenfell Tower, as well as other components in the proposed cladding system (including Celotex). On 27 February 2013 {CEP000004037} Arconic were told by CEP that Studio E was now considering alternatives to zinc and that CEP would propose the

Reynobond range. On 5 March 2013 {MET00019920/2} CEP asked Arconic to send various Reynobond samples direct to Studio E and enquired whether there were any existing projects where Studio E could view a large area of the panels.

3.51 On 5 April 2013, {MET00019920/31}, Arconic recorded that Grenfell Tower was to include RB 55 “*Mode to transformation...Cassettes*”. On 9 April 2014 {ARC00000089} Harley informed CEP that Rydon had been confirmed as the preferred contractor.

3.52 In the meantime, on 4 April 2013 {MET00053158\_P04/123} internal emails copied to, amongst others, Mr Wehrle and Mr Froehlich, stated that “*After talking with Claude*”:

*“we agree that we (you, Patrice, Mareva, me) must not write anything related to fire regulations which has not been validated or issued by Alcoa technical dept.*

*Why that? After showing Acodi and Sunclear documents that they send to specifiers and customers (see attached), Claude advised me not to do the same since there does involve too much our responsibility on a ‘touchy’ subject...”*

3.53 Claude Wehrle is no fool. As a result, he sometimes attempted to curb the more explicit and excessive use of false information. In email exchanges on 25 April 2013 {MET00064988/120–122}, in response to Isabel Moyses (Arconic Sales Manager in France) seeking clarification as to whether the Euroclass B-s2, d0 classification for riveted was still valid, Mr Wehrle said:

*“It’s valid because it’s contained in an official report. However the tests that we conducted are not really reflective of the riveted system in general. So, Alcoa aligns with the “market” classification and does not use it any more, preferring a class “E””*

3.54 It is not clear from the documents currently disclosed as to why Mr Wehrle considered the test which gave rise to the B classification for riveted not to be “*reflective*”. It may well be that it was tested in circumstances that would not reflect any normal or usual installation (including use of the 50 mm gap). The email goes on, Mr Wehrle says that: “*we have not communicated B-s2,d0 from the beginning of the year at the request of CS.*” CS, Mr Schmidt, alleged that he could not remember whether he had made such a request {Day94/26:5–15} or why he would have done so. To have admitted to it would have displayed a knowledge which in evidence he professed not to have possessed.

3.55 Ms Moyses replies that that’s not what “*Miguel gets told*”. Mr Wehrle responds:

*“Yes it is. I even told him that before everyone else when I was in Spain. The thing is that the DIT still incudes B-s2,d0 for PE, so he makes use of that.”*

(DIT is a Spanish National Technical Approval document issued by IETcc (seemingly the Spanish equivalent of CSTB): <https://www.ietcc.csic.es/en/>, accessed 6 October 2020.)

3.56 Ms Moyses retorts: “*Yet we still won’t stop proposing the riveted product in PE???*” Mr Wehrle replies: “*Yes, that’s the thing...It’s a gap in the certification that we continue to make use of.*”

3.57 So, Arconic knows:

(1) PE, whether riveted or cassette, is dangerous (see above).

(2) Cassettes are being represented as having a Euroclass B classification, when they are, in fact, E.

- (3) The rivet system classification is not reflective.
- (4) There is “a gap in the certification that we continue to make use of”, because, it appears, Miguel can make use of a DIT rating of “B”.

3.58 Arconic’s sale of dangerous material continued.

3.59 A week later Arconic received yet another warning. An email from Graham Smith (Simco), on 2 May 2013, to Deborah French (Arconic) and cc’ing others including Peter Froehlich (Arconic) and John Simmons (Genius Facades) {MET00053173/75} provided a link to a BBC report addressing the spate of ACM cladding fires in the UAE. In the exchange, Smith says “*Debbs, I believe this will impact yourselves and the need for FR core more prevalent?*”. Ms French then forwards this email to Mr Wehrle {MET00053173/75} and says: “*Not sure if you have seen this click on the link below.*” (The link is to: <https://www.bbc.co.uk/news/world-middle-east-22346184>)

3.60 Richard Geater of 3A Composites (manufacturer of Alucobond), was also prompted to send out an email, dated 9 May 2013, addressed to Barrie Wingrove of Argonaut UK (a fabricator). Mr Wingrove then forwarded this email to Ms French {MET00053157/48}. She, in turn, emailed Mr Wehrle, Peter Froehlich (Product Manager), Alain Flacon (Sales and Marketing Director) and Mr Schmidt on 10 May 2013 {MET00053157/47–49}:

*“Just to make you aware I sent this link over to Claude W last week concerning a BBC report covering a fire in UAE using ACM. Richard Geater – Alucobond Rep in the UK is emailing all fabricators explaining that **Alucobond is now using a fire core only as std.** [...] Would welcome any comments / statement we have ref the fire and our std’s so I can communicate this to our relevant customers.”* (Emphasis added)

3.61 “std” is presumably “standard”. Mr Flacon’s response was to ask Mr Wehrle “*what 3A says about the fire resistance of Alucobond’s FR*”, and Wehrle confirms it is B-s1, d0 “*just like our Reynobond FR.*”

3.62 The BBC report included the following:

*“A fire at the Al Hafeet Tower in Sharjah on 23 April was eerily similar to a blaze that gutted the Tamweel Tower in Dubai last November. And the 40-storey Al Tayer tower in Sharjah also suffered a similar fate in April 2012.*

*In all three cases **fire roared up the sides of the building as individual panels ignited and burst into flame.** No deaths were reported from any of the fires.*

*“[The facades] are good-looking, long-lasting and easy to maintain, but they have one big problem - **they burn rapidly,**” Thom Bohlen, of the Dubai-based Middle East Centre for Sustainable Development, told the BBC.*

*[...]*

*Occupants of residential towers that burst into flames have spoken about the lack of fire alarms at the time of the blaze but most seem unaware that they and their families are living in **potential firetraps**”* (Emphasis added; words in square brackets present in original BBC report).



- 3.63 Any reputable, decent, organisation would have withdrawn RB 55 PE, its standard product, from use on residential buildings (whether face-fixed or cassettes) and issued explicit warnings with regard to projects on which it had already been used.
- 3.64 Towards the end of her evidence to the Inquiry, Ms French accepted that discussions around this time as to whether to remove PE from the market did take place. Rydon suggests that they could only have been in the context of the fire safety of the product. To suggest otherwise, as she did, {Day88/83:14} – {Day88/84:19} is not credible. There was this exchange with Counsel to the Inquiry {Day89/52:24} – {Day89/53:6}:
- “Q. Right, So do we take it that as a general point that, to the best of your recollection, the reason why Arconic did not withdraw its Reynobond PE panel from the market in the way that 3A had removed its Alucobond PE panel from the market was because of commercial considerations?
- A. I mean, as I say, I can only go on what they were giving me at the time but, yes.”
- 3.65 Mr Schmidt, implausibly, disputed Ms French’s understanding and said the reason why Arconic did not remove PE from the market was “*Because we needed time to think about it*” {Day94/21:11–24}. It is not clear how long Arconic says it needed or what it needed to think about.
- 3.66 Arconic’s immediate response was an email from Ms French of 13 May 2013 {CEP00049719} to CEP’s Neil Wilson, Geof Blades and Roy Fewster forwarding the BBC report of ACM cladding fires in the UAE. Arconic sought to calm its customers, stating:
- “As a business we are aware of this report and our technical team are **following the details** [...] Regarding the supply of Reynobond in the UK, as you know we supply both PE and FR core and **can control and understand what core is being used in all projects** due to the controlled supply route we have. By only supplying Reynobond to a very small group of Approved Fabricators and working closely with them on all projects **we are able to follow what type of project is being designed / developed and then offer the right Reynobond specification including the core**. At this stage we will continue to offer both PE & FR core [...]” (Emphasis added).
- 3.67 Ms French remembers the email but says she cannot recall who drafted it or who was involved in pulling it together {Day88/90:5} – {Day88/92:9}. The contents of this email were sent, apparently, not just to CEP but to other Arconic customers: see email to Simco and Genius Facades (specialist façade contractors in the UK) {MET00053173/79}. Mr Wehrle and Mr Froehlich were copied in to this email. It is not credible that one or both did not have an input into drafting it. They plainly approved it, word for careful word. Mr Schmidt simply denied all knowledge of the email {Day94/22:25} – {Day94/23:1}.
- 3.68 Ms French contended in evidence that two of the statements in the email were false and two had to be qualified {Day88/95:1–13}. Her explanation as to why Arconic apparently lied in these emails, amounted to some inexplicable nonsense that it was “*heavy on the sales side*” {Day88/96:1–10}. Her assertion that she “*wouldn’t necessarily have known that [it was false] in that context at the time*” {Day88/97:2–5}, again using the well-worn “*necessarily*”, is also unbelievable. She had been working

for Arconic for many years in a role which enabled her to know Arconic's customers and how to deal with them. Questioned further on her answers, she resorted to answering "*I don't know*" {Day88/99:19} – {Day88/100:1}.

- 3.69 The fact is that Counsel for the Inquiry hit the nail on the head when he suggested that what was written was, in fact, true {Day88/100:25} – {Day88/101:4} and {Day88/104:3–15}. As a matter of fact:
- (1) Arconic was able to control and understand what core is being used in all projects due to the controlled supply route it had.
  - (2) Arconic was working closely with fabricators on all projects.
  - (3) Arconic was able to follow what type of project was being designed/ developed.
  - (4) Arconic was able to offer the right Reynobond specification including the core.
- 3.70 The truth is that Arconic simply did not care to ensure the right core was used on Grenfell Tower as a result of corporate greed. The rest of Ms French's evidence on this topic was simply evasive {Day88/106:20} – {Day88/108:13}. Mr Schmidt's inability to give coherent answers about Arconic's conduct after the UAE fires and the email speaks volumes {Day94/26:5–15}.
- 3.71 Mr Wehrle and Mr Froehlich could not have sensibly disputed that the email was sent to assure and give comfort to those to whom Arconic sold RB 55 PE. Nor could they dispute that, in plain words, it represented that Arconic would not sell or supply the PE product, presumably to *anyone*, in circumstances where there could be a risk of danger.
- 3.72 Ms French was instrumental in selling RB 55 PE for use on Grenfell Tower. She dealt with CEP without alerting them to the dangers. Her stated excuse was that: "*We were still covered with the BBA and I would have been waiting for any further guidance from Merxheim if that was changing*" {Day88/120:16–19}.
- 3.73 In July 2013, Arconic instructed CSTB to carry out further tests. On 7 November 2013 {MET00053158\_P02/38–39} the CSTB informed Mr Wehrle that the riveted system achieved Euroclass C and the test on the cassette system had to be stopped, meaning the best classification it could be awarded was an E. This was the third time the cassette test had failed (the first in late 2004 (Test 5B) and the second in February 2011).
- 3.74 The then existing BBA certificate became totally obsolete. The Euroclass B and Class 0 representations of the product were now based on outdated CSTB test reports. The test was not recorded in a formal classification report. BBA was not notified by Arconic, as BBA's terms and conditions required (see signed terms and conditions at {MET00053158\_P15/85–89}).
- 3.75 From early January 2014 Ms French was sent details by CEP and knew, for example, of the intention to use Celotex (see 7 January 2014 email {CEP00050793}). On 15 January 2014 Arconic provided a quote to CEP {MET00053159/67}. It is a quote for RB 55 with a PE core. Ms French accepted that "*as standard it would have been PE*". {Day88/128:22–25}. Arconic did not offer an FR core.
- 3.76 In the meantime the CSTB, it appears in response to a request by Arconic, classified both RB 55 PE cassette and riveted as Euroclass E on 31 January 2014 {ARC00000393}. This, again, should have put an



end to RB 55 PE being promoted for use in any form, let alone in cassettes for use in residential buildings greater than 18 m tall.

- 3.77 In email chains between Arconic and its customer, PREFA, in January and February 2014, Mr Wehrle explained that the new CSTB classification report meant that PE in both cassette and riveted systems was now Class E, and that the previous Class B for riveted was only achieved “*with a certain rear ventilation distance*” {MET00064988/50–66}. This latter reference may well be to the 50 mm gap in the two RB 55 PE tests for the riveted form.
- 3.78 On 3 February 2014, Mr Wehrle informed those at Arconic of this new Class E result and instructed that: “*The previous “B” class report done for Reynobond PE in riveted system can no more be used from now*” {MET00053160/1–10}.
- 3.79 The BBA was not notified.
- 3.80 At an Arconic Sales Meeting Presentation in February 2014 {MET00053158\_P07/87–106}, Ms French was told that all PE was Class E (see 3 February 2014 presentation {MET00053173/91–95}). She did not pass on this information to any of Arconic’s UK customers {Day88/140:2–12}. It is difficult to believe that this was not a deliberate decision, despite her protestations that she could not remember why she did not or that somehow an EN Classification was not relevant. She accepted, however, that without knowledge of the fires and the downgrading of the classification, that it would be difficult for a designer to make a decision about whether or not to use Reynobond PE {Day88/153:23} – {Day88/154:2}. No one, apart from Arconic, involved at Grenfell knew of the downgrading.
- 3.81 On 23 April 2014, by email {CEP000004217/1}, Ms French having been told that all PE was Class E, sent to Harley and CEP a copy of the 2008 BBA certificate, thereby falsely representing RB 55 PE, both riveted and cassette, as Class B. It was sent on by Mark Harris (Harley) to Rydon {HAR00000933}.
- 3.82 Arconic knew of the importance of the BBA certificate to those considering use of a product such as RB 55 PE. There is no credible explanation for the failure to inform Harley and CEP, other than the will and desire to mislead.
- 3.83 Arconic’s involvement with the Grenfell project was not just through Ms French. Mr Froehlich visited the UK and, with Ms French, met with CEP and discussed Grenfell {Day88/176:7} – {Day88/179:9}. As far as Grenfell was concerned, the project was one where Arconic had close control of the supply chain and worked closely with the fabricator. Arconic was in a position where it could ensure that, as between FR and PE core, the right product ended up at Grenfell (as it had promised). Ms French agreed {Day88/183:24} – {Day88/184:2}.
- 3.84 She also agreed {Day88/187:21–25}:

“Q. So you are telling us that Harley’s and Studio E’s and Rydon’s incuriosity about fire performance of the cladding that [Arconic] was providing them was not out of the ordinary in your experience as it was at the time?

A. Yes, that was more normal than unnormal”

- 3.85 On 25 July 2014, notwithstanding the 13 May 2013 email, Arconic allowed RB 55 PE, in cassette form, to be specified at Grenfell Tower with no suggestion that the specification should at least be FR core or not used at all (see email from Mark Harris (Harley) to Deborah French and Geof Blades (CEP) {CEP00051955}, informing that: *“The Reynobond colour choice for the whole job is ‘Champagne’, in a cassette format.”*)
- 3.86 See also, in this regard, email from Harley to CEP dated 31 July 2014 {MET00053173/404–411}, copied to Ms French, informing her not only of the colour but that it was in cassette form and photos showing the full height of the building and the crown.
- 3.87 On 17 October 2014, Mr Wehrle exchanged emails with Serge Wahler (Arconic) {MET00053158\_P10/107–108} after PREFA had asked Mr Wahler (cc’ing Mr Wehrle): *“When and which building classes should the PE or FR core be used in England?”*. Mr Wahler responds: *“You can do everything with PE in England”*. Mr Wehrle then says privately to Mr Wahler:  
*“Be careful, this is not the case. Debby pushes hard for the PE prescriptions, but everything is moving to FR (from the British Standards to the European Norms) [...] Analyses of past figures are not necessarily correct.”*
- 3.88 Mr Wahler responds:  
*“I called her, and she confirmed that so far, only PE is used regardless of the project, no specific legislation.”*
- 3.89 After the Grenfell Tower fire and on 16 June 2017, Mr Wehrle forwards this exchange to Mr Wahler and says: *“Remember....be careful with this kind of communication to PREFA”*. Mr Wahler responds:  
*“I thought Debbie was logically the person who was best informed, and I stupidly repeated what she told me (I am very good at doing that!!!!)”*
- 3.90 Arconic had a lot to hide. Being open and honest was regarded as being “stupid”.
- 3.91 Notwithstanding everything and the email of 13 May 2013 to CEP, Arconic, through Ms French, was pushing dangerous PE over FR, exploiting the lack of clarity in the regulations.
- 3.92 In December 2014, CSTB reports provided that RB 55 PE cassette was classified as E and RB 55 PE riveted/face-fixed was classified as C {ARC00000395} and {ARC00000397}. These classifications were repeated in the CSTB reports of September 2015 {ARC00000402} and {ARC00000405}.
- 3.93 Ms French left Arconic at the end of 2014 to join Taylor Maxwell, a facades supplier, and her replacement, Mr Meakins did not come in until 1 May 2015. Mr Froehlich took a more active role in the interim besides Ms Derrendinger in the UK. It made no difference.
- 3.94 In 2015, RB 55 PE for use in cassette form was supplied by Arconic for use at Grenfell. Arconic had already forwarded the BBA certificate on 23 April 2014. It falsely stated that RB 55 PE was Class B, when it was at the time, in both forms, Class E. Quotes and Orders took place between 3 March 2015 with the majority of panels being installed between 27 April 2015 and 24 July 2015 (see para 77 of Rydon’s Phase 2 Module 2 written Opening Submissions {RYD00094561}).

- 3.95 At no stage did Arconic ensure, as it said it would, that the right core was used for the right project. The exact opposite occurred: it knowingly manufactured and supplied the wrong core for use at Grenfell Tower – a product it knew to be dangerous and, moreover, in the even more dangerous cassette form.
- 3.96 Somewhat absurdly, in written Closing Submissions to Phase 1 of the Inquiry Arconic asserts that the tragedy of Grenfell Tower “*does not show the ACM PE cladding itself would necessarily have been a source of danger*” but that it all turned on the combination and configuration of other combustible materials (see {INQ00000558}, para 98). This is plainly self-serving and wrong. Arconic repeatedly acknowledged in its contemporaneous internal communications the dangers of PE ACM in high-rise residential buildings, *without any qualification or reservation with regard to its use with combinations of other materials*.
- 3.97 The BBA review report of 10 April 2015 for the Reynobond product concluded that the BBA certificate remained valid {MET00053158\_P18/24–30}. Instead of withdrawing PE, Arconic sought renewal of the BBA certificate and allowed it to be renewed on the false premise of a subsisting Class B classification.
- 3.98 During the time when the panels were being installed at Grenfell, in May 2015, Mr Wehrle (along with other Arconic personnel) was sent the Melbourne Fire Brigade Lacrosse Fire Analysis Report, which was then circulated internally {MET00053158\_P12/168}. Appendix 12 to the Report {MET00053158\_P11/88–91} identifies fires at 7 different locations around the world, with 1 taking place in 2007, another in 2010, 4 in 2012 and 1 in February 2015.
- 3.99 From the 24 June 2015 email exchange with Diana Perreiah {MET00053157/257–260} it is clear that Mr Schmidt knew that PE should not be used on buildings higher than 12 m {Day94/72:23} – {Day94/73:24}.
- 3.100 On 29 June 2015 an email {MET00053158\_P05/14–15} shows Mr Wehrle having a further flicker of conscience:

*“As I have already mentioned on several occasions, Reynobond PE is classified as M2 or M4 (European Norm equivalent)....*

*I was told that, for the time being, in France, it is the French standard that is required (therefore NFP 92 - M1)...and that it would be excessive to communicate on the subject.*

*My Opinion:*

*PE is DANGEROUS on facades, and everything should be transferred to FR as a matter of urgency.*

*The NFP92 standard should have been discontinued over 10 years ago!*

*This Opinion is technical and anti-commercial, it seems ☺*”

- 3.101 Mr Schmidt could not give a coherent answer as to why Arconic continued to sell dangerous PE {Day94/80:5} – {Day94/82:16}. On 7 July 2015 Arconic {MET00053159/746} acknowledged a further order from CEP of RB 55 PE for Grenfell Tower in an email which said “*Many thanks for this new order*” and added a smiley face.

- 3.102 In her email of 31 July 2015 {MET00053180/12}, Ms French, by this time working for Taylor Maxwell, an Arconic customer, says in an email to Ms Derrendinger:
- “We need to make sure we only order FR core if project needs to achieve an ‘O’ fire rating - if we don’t highlight this to genius they only order PE only and it won’t have the rating required. Vince can you please confirm if FR is the same cost to us as PE”*
- 3.103 Ms French, at least, believed (and Arconic knew of this belief) that RB PE had **not** achieved “an ‘O’” (i.e. Class 0) fire rating required by AD B and all at the time when the panels were being put up on Grenfell Tower.
- 3.104 As at September 2015 Reynobond’s product page on Arconic’s global website describes Reynobond FR as providing an “extra layer of protection” and that it is:
- “manufactured just like Reynobond PE, but with a fire-retardant mineral core that guarantees higher resistance to fire. These panels meet or exceed national model building code requirements without exception.”*
- 3.105 This does not warn against PE but merely suggests that FR might be a little bit better.
- 3.106 On 16 October 2015, there were internal Arconic emails between Messrs Wehrle, Flacon and Wahler {MET00053158\_P10/168} concerning a fire at “King Fahed Medical Center Riyadh” on 10 October 2015 which supposedly was clad in Alucobond FR. Mr Wehrle says:
- “FR showed a very good fire behaviour. In PE, the fire would have spread over the entire height of the tower, while in this case only the area near the fire is affected... Long Live FR :-)”*
- 3.107 His comment is not specific to PE in cassette form.
- 3.108 On 12 November 2015, Arconic sent CEP an order acknowledgment for the supply of further RB 55 PE panels for Grenfell Tower {MET00053183}.
- 3.109 On 4 January 2016, emails between Mr Wehrle, Alain Flacon and Serge Wahler (both Arconic) {MET00053158\_P10/172–173} discuss yet another ACM fire in Dubai, this time at The Address Downtown on 31 December 2015. Mr Flacon says: “No surprise. The only good news is that it seems to be AB [Alucobond] products”, to which Mr Wehrle responds: “I hope that PE will gradually be excluded from façade cladding because each time it is the image of all the ACMs that takes a hit!”
- 3.110 The fact of yet another fire involving a PE ACM is of “[n]o surprise”. What is a surprise is that Mr Wehrle now only refers to PE being excluded “gradually” and in terms of the industry’s image. Arconic’s profit was the paramount consideration, not safety.
- 3.111 On 19 January 2016 {MET00053158\_P10/178–181} Mr Wehrle emails Mr Flacon, Lionel Marconnet and other Arconic staff attaching a photo of a building on fire in Strasbourg, France, and says:
- “We were very lucky... The Wolleck tower is in Reynobond PE 10 metres from a fire! [...] fortunately, the wind didn’t change direction, but... we really need to stop proposing PE in architecture! We are in the “know”, and I think it is up to us to be proactive...AT LAST”*
- 3.112 He recognises that Arconic are in a special position; “In the “know”” plainly means that Arconic know that PE is dangerous whether in cassette form or otherwise.



- 3.113 The cladding on Grenfell was by then installed. Arconic's knowledge of the dangers of the cladding was not notified to anyone.
- 3.114 On 9 February 2016, Hervé Marichez emailed Mr Wehrle and cc'ing Lionel Marconnet, Patrice Audureau and Kevin Lelu (all Arconic) attaching a cladding specification for a hotel in France {MET00064988/27-29}:
- "Just as an example: here's some typical specification for the French market: an Alucobond Plus prescription (so our version of FR), and with M1 classification! And it's for a hotel!!!*
- ...So do you reply with FR (with your conscience clear) or PE (so you're sure to get the business)?*
- What a dilemma!"*
- 3.115 On 3 May 2016 Alain Flacon sent an internal email to several personnel including Mr Wehrle {MET00053158\_P10/85-86}; {MET00053158\_P06/99}; {MET00053157/267-268}. In it, he lists FR and PE classifications in France and elsewhere in the EU (PE riveted is stated as Class C and cassette as Class E) and says this:
- "This ambiguous situation is open to interpretation and, in particular, gives control offices the option to check the M classification as a priority, as the European classification is more complex to understand and use. You and your customers regularly specify our Reynobond products on large-scale architectural projects. As such, **Alcoa Architectural Products finds itself as a knowledgeable entity, and therefore accepts its responsibility and image as a specialist in this field.** In view of the potential calorific benefits of Reynobond FR (vs. Reynobond PE), and consequently its superior performances, we have taken the proactive habit of favouring FR as the only solution in our specifications. **As from today, I ask you to go further and to systematically confirm in writing the requirement for FR for all projects on which a Reynobond specification is involved, regardless of the nature and size of the building project** [...] please contact Claude, who will give you all the necessary information to justify this choice **and advise the specifiers** as best as possible regarding this solution, which is by far the safest."*
- (Emphasis added)
- 3.116 Mr Flacon, Sales and Marketing Director, and Mr Wehrle's line manager recognised, rightly, that Arconic had the ability to influence the specification of RB 55 PE. This echoes Arconic's assurances to its customers in its email to CEP of 13 May 2013 {CEP00049719}, that it would "control and understand what core is being used in all projects" and work closely with its Approved Fabricators and "follow what type of project is being designed / developed and then offer the right Reynobond specification including the core."
- 3.117 Moreover, whoever actually specifies RB 55 PE, Arconic is a "knowledgeable entity, and therefore accepts its responsibility and image as a specialist in this field."
- 3.118 Legally and morally incorrect submissions, inconsistent with its own contemporaneous assessments, made by Arconic to this Inquiry include the following:

*“As to knowledge, without entering into the extent, if any, of our client’s knowledge as to the other components of the cladding system at Grenfell, such knowledge, if any, did not remotely fix them with responsibility to intervene in relation to the choice of those components and take upon themselves a responsibility which it was for others to fulfil.” {Day2/42:2–9}*

3.119 On 22 June 2016, Kevin Lelu emailed Yves Biehlmann (also Arconic) and Mr Wehrle, asking whether a 20 year warranty can be offered for a housing project in France using PE {MET00053158\_P06/109–112}. With his comments over the years in mind, it is with some understatement that Mr Wehrle responds that he has:

*“major reservations about the use of PE on "Habitat" project of such size; I propose we use Reynobond 55 FR.”*

3.120 His reservations can only have been that PE is a fire risk and dangerous. This, it seems, was regardless of whether the use of PE would have complied with French Regulations.

3.121 An email from Julie Kasyanik (Arconic) to Mr Wehrle of 24 June 2016 {MET00064988/129} seemingly forwarded *“quite interesting certificates and reports”* regarding Alucobest to which Mr Wehrle responded:

*“This is a certif. for PE, not FR. We also had a class “B” at the time in PE, but by “arranging” the system to pass. So this report is really not a reference.”*

3.122 The word “arranging” is in inverted commas and the connotations are obvious. Arconic fixed the tests. See also Mr Wehrle’s email of 25 April 2013 (above). Mr Schmidt {Day91/76:3–6} says that he is unable to assist in what the e-mail meant. He agreed that it looked like that Class B in PE was not honestly achieved {Day91/76:6–11}.

3.123 When the BBA began the process of re-issuing the BBA certificate for RB 55, on 18 October 2016 Nicolas Remy, a member of Mr Wehrle’s technical team, drafted a response to Valentina Amoroso (BBA), providing answers to her queries, which he forwarded to Mr Wehrle: *“I really feel like I’m dealing with something that is not clear cut...They are coming to do a Review, and I am informing them that what they’re coming to review has been completely modified without them knowing anything about it?”* Mr Wehrle assured Mr Remy *“We’ll talk about the situation before distribution in order to alleviate this bad impression for you. ☺”* {MET00053158\_P18/61–64}.

3.124 As outlined in Rydon’s Phase 2 Module 2 written Opening Submissions, {RYD00094561}, paras 120–128, from December 2016 until the fire Arconic had opportunities to notify all relevant parties involved in the Grenfell Tower project and warn them of the dangers of RB 55 PE. They did not.

## CONCLUSIONS

3.125 The Inquiry has found that the RB 55 PE cassette panels acted as a source of fuel and were the principal reason why fire spread so rapidly up, down and around the building. This was entirely in accord with what Arconic knew for over 10 years before the fire. The CSTB Tests were rigged to give an unrepresentative result; the rigged Tests were used to obtain a misleading certificate from the BBA endorsing cassette panels, which had, in fact, failed the Tests. Independent of Arconic’s conduct



surrounding the testing and certification of its panels and indeed whether RB 55 PE passed tests or not, Arconic knew that use of the panels in high rise buildings was highly dangerous. Arconic's personnel not only knew that there was a serious risk that a tragedy such as Grenfell could happen but that it was inevitable if they did not stop supplying RB 55 PE for use in high rise residential buildings. Arconic nonetheless gamed the system and continued to sell the product to an industry it set out to mislead and succeeded in so doing.

## **4 RYDON AND THE SPECIFICATION OF REYNOBOND 55 PE AT GRENFELL TOWER**

### **EVENTS LEADING TO THE INCLUSION OF RB 55 PE IN THE NBS SPECIFICATION**

- 4.1 The inclusion of ACM and RB 55 PE in the NBS Specification was due to events dating back to 2012, in which Rydon had no involvement.
- 4.2 Bruce Sounes of Studio E contacted Geof Blades of CEP to discuss the cladding options for Grenfell Tower in March 2012 {CEP00048112} and Mr Blades provided Mr Sounes with drawings from another project in which ACM cladding was used: {Day20/76} – {Day20/77}; {SEA00003941} and attachments {SEA00003942} – {SEA00003956}. Studio E and CEP then met that same month: Sounes W/S {SEA00014273}, para 71; {Day41/84} – {Day41/85}.
- 4.3 A subsequent meeting took place between Ms French, Mr Sounes and Mr Blades in October 2012. See Section 3, para 3.46 above.
- 4.4 Leadbitter suggested using aluminium cladding rather than zinc, as a potential value engineering option {Day59/84} – {Day59/85}. This idea had its genesis at least as early as 28 January 2013 (Maddison notebook {TMO00879771/10}).
- 4.5 In February 2013, Artelia requested a “*radical re-think*” from Studio E as part of the value engineering exercise, to which Mr Sounes replied that changing the zinc cladding material to something cheaper was an “*obvious target for savings*” {ART00000919}. Mr Sounes then reported back to Artelia in March 2013, saying that, as a result of another meeting with CEP to “*discuss the cheaper ACM cladding option*”, Studio E now “*feel there might be scope to switch from zinc*” (*ibid*).
- 4.6 Harley became involved in the project in September 2013, and expressed its desire to Studio E for ACM to be used on Grenfell Tower: “*From a Harley selfish point of view, our preference would be to use ACM. It's tried & tested (on many Harley projects), and we are confident in the cost base [...]*” {HAR00005509}. Indeed, Harley admitted in oral evidence that it pushed Reynobond as an option from the start {Day34/65}. Rydon had no involvement in the above discussions.
- 4.7 The NBS Specification was then finalised in November 2013, several months before Rydon was appointed as D&B contractor for the Grenfell Tower project.

### **RYDON'S ROLE REGARDING THE USE OF RB 55 PE**

- 4.8 The NBS Specification was the basis upon which Rydon was invited to tender, and it was ultimately incorporated into the D&B Contract: {RYD00094360}, paras 8 and 83.

- 4.9 Shortly after Rydon's appointment, KCTMO requested Rydon to conduct a value engineering exercise in regards to the cladding and other areas {Day23/105} – {Day23/106} (see further Section 17 below). As regards the cladding panels, Rydon was required to provide costings for alternative cladding options to Zinc Proteus HR {Day23/181} – {Day23/182}. The alternative cladding options specified in the NBS Specification included two types of ACM, one of which was Reynobond.
- 4.10 This formal request from KCTMO was then passed down by Rydon to members of the supply chain so that those members could advise in respect of their specialist areas, as they were individually responsible for procuring products and materials required for their parts of the project {Day23/106}.
- 4.11 Simon Lawrence of Rydon agreed that he would “[...] *pass on to Harley all decisions and oversight of the cladding material selection process*” {Day23/191}, which was consistent with the contractual obligations which Harley owed to Rydon (and the subsequent novation and Collateral Warranty provided to KCTMO). Harley were leading the search for ACM panels to be used as an alternative to Proteus HR Zinc, and Rydon understood Harley had established relationships with the manufacturers {Day23/186}; see emails demonstrating this pre-existing relationship between Harley and Arconic – {CEP00047982}, {HAR00010172}.
- 4.12 Rydon's involvement in discussions with the RBKC Planners relating to ACM was limited to addressing queries regarding durability and aesthetics rather than about fire performance {Day24/35} – {Day24/36}, {Day29/40}.
- 4.13 Based on information gathered by Harley, Rydon provided KCTMO with figures indicating that ACM in riveted fixing would achieve the greatest cost saving and ACM in cassette fixing would attract the next largest saving {Day23/160}.
- 4.14 Rydon received confirmation from KCTMO on 31 July 2014 that it had decided upon RB 55 PE in cassette form {RYD00014150}. After some delay due to RBKC Planners deciding which colour they wanted, on 25 September 2014, the Planners confirmed that they were happy with RB 55 PE cassette in Smoke Silver Metallic {RYD00018877}.

#### **RYDON WAS LED TO BELIEVE THAT RB 55 PE WAS COMPLIANT AND FIT FOR PURPOSE**

- 4.15 Rydon did not know there was any difference between the fire performance of zinc and ACM {Day24/31}, and did not know that ACM came with a fire retardant (FR) core {Day28/48} – {Day28/49}, {Day22/84} – {Day22/85} and {Day24/13}.
- 4.16 Rydon knew ACM panels came in a riveted version and also in a cassette version, which required fabrication. However, it was not aware that ACM panels performed significantly worse when fabricated into cassettes ({Day23/161} and {Day23/182}), and was never made aware of the fact that RB 55 PE cassette achieved a Class E rating ({Day24/11}). Rydon's understanding from previous experience was that cladding panels had to have a Class 0 rating {Day24/7}.
- 4.17 The specification of ACM as an approved material in the NBS Specification gave Rydon comfort that the product had already been checked for compliance and deemed suitable {Day29/59}.

## RELIANCE ON COMPETENT DESIGN TEAM AND SPECIALISTS

- 4.18 Rydon was reliant on a competent design team of specialist subcontractors, supported by Building Control, to ensure the suitability and compliance of materials used on the façade {Day22/51} – {Day22/53}, {Day23/46}, {Day23/101} and {Day24/20}. The cladding specialist, Harley, and lead architect, Studio E, were responsible for ensuring that the RB 55 PE product complied with AD B and the BRs {Day22/115}, {Day23/179} and {Day29/22} – {Day29/23}.

## STUDIO E

- 4.19 In regards to Studio E, Rydon relied on it to have the requisite understanding of the products it specified and used for its design {Day22/136}. As Mr Lawrence explained in oral evidence, Rydon was confident in Studio E's competence to ensure the compliance and appropriateness of the ACM product, due to the fact that Studio E had been working up the design of Grenfell Tower for two years and due to Studio E's prior involvement on the KALC project {Day22/132}. Rydon also relied on Studio E to oversee and check the façade designs produced by Harley {Day23/5}.

## HARLEY

- 4.20 In regards to Harley, Rydon reasonably believed it to be a competent cladding specialist based on its experience working with Harley on previous projects. Rydon had no reason to doubt Harley's competence {Day24/19} – {Day24/20}.
- (1) Unbeknown to Rydon at the time, the witness evidence heard by the Inquiry suggests, at least, a lack of clarity within Harley as to who was responsible for checking the compliance of materials. See {Day39/20}, {Day35/31} – {Day35/32}, {Day32/51} – {Day32/52} and {Day36/62} – {Day36/63}. This was despite: (a) Harley's admission that it was its responsibility to check products were compliant; and (b) the terms of its subcontract with Rydon {Day32/102} – {Day32/103}.
  - (2) As regards the appropriate core of the Reynobond panel, it is also clear from the evidence before the Inquiry that no one in Harley's team was aware that Reynobond came in any core other than PE at the time Reynobond was being specified ({Day35/44} – {Day35/45}, {Day38/26}, {Day40/2} and {Day32/165} – {Day32/166}), and all previous dealings Harley had had with Arconic exclusively concerned Reynobond with a PE core ({Day32/185}). In fact, the only Harley employee who did learn of the FR alternative after November 2013 was Ray Bailey, and even then he admitted that he did not consciously think there was a choice between PE and FR; he thought FR only needed to be used where there was "*a walkway within 1 metre of the building, or a fire escape route*" {Day32/178}. This against the backdrop that Arconic, in the UK, "*pushed hard*" for PE to be used {MET00053158\_P10/107–108} and Ms French's evidence that the UK had always been a PE market and that she would routinely offer PE as the default material {Day88/195} – {Day88/196}.

- 4.21 Rydon submits that it is reasonable for a D&B contractor, in the circumstances of a project such as the Grenfell Tower refurbishment, to expect a cladding subcontractor such as Harley, operating under a subcontract such as Rydon had with Harley, (1) to be knowledgeable about the cladding materials it was being asked to endorse and install and (2) to review compliance and appropriateness of those cladding materials.

#### **BBA CERTIFICATE AND CLASS 0**

- 4.22 As has become clear from the evidence before the Inquiry, those involved in the Grenfell Tower project placed significant reliance on the representations made in the BBA certificate as to the suitability and safety of RB 55 PE.
- 4.23 Rydon believed RB 55 PE was compliant due to it having a BBA certificate and the product being represented as Class 0 therein. Rydon understood that the BBA certificate was a UK recognised certification that confirmed RB 55 PE had been tested and was appropriate: {Day24/4} – {Day24/5} and {Day29/24}. Rydon understood the certificate represented the Reynobond panel, regardless of fixing type, as safe and compliant for use {Day24/10} – {Day24/11}. As Mr Lawrence explained in oral evidence, Rydon relied on third parties, including Arconic, Harley and Studio E to make it aware of the differences in the fire performance of the Reynobond product and the variations available, if any {Day24/19} – {Day24/20}.
- 4.24 When Harley provided the BBA certificate to Rydon in April 2014 {RYD00003932}, Harley confirmed it was satisfied with the certificate and that Rydon, in turn, could provide it to Studio E. As Mr Lawrence explained in oral evidence, Rydon believed that by employing a specialist subcontractor and receiving the “*manufacturer’s approval*” of the RB 55 PE, that Rydon was confident it was “*getting the right products*” {Day24/18}.
- 4.25 It has since transpired that neither Studio E nor Harley interrogated the BBA certificate: for Studio E see {SEA00014273}, para 386, {Day21/19} – {Day21/20}, {Day21/24} and {Day21/29}; for Harley see {Day33/37} – {Day33/38}, {Day38/23}, {Day35/43} and {Day37/6} – {Day37/7}. It has also transpired that even if they had, Arconic’s conduct in failing to be candid with the BBA in accordance with its contractual obligations rendered the certificate effectively worthless in terms of fire safety. Claude Schmidt of Arconic accepted in his evidence that Arconic’s failure to provide the relevant test data was a “*misleading half-truth*” {Day92/46}.
- 4.26 It should be noted that John Hoban, RBKC BC Officer, gave evidence that BBA certificates were “*something we accepted as a standard*”, without questioning them {Day46/15}. Mr Hoban admitted that it was likely that he simply looked at the first page of the certificate, saw that RB 55 PE was Class 0 and did not look into it any further {Day46/23}. The Inquiry’s Building Control expert, Beryl Menzies, agreed with John Allen of RBKC BC, that interpreting certificates, such as a BBA certificate, is a core function of a Building Control Officer ({Day47/79} and {Day60/98}) and that she would expect a reasonably competent Building Control Officer to read the BBA certificate in full {Day60/99} and check the testing information carefully {Day60/97}.



- 4.27 The Inquiry's architectural expert Paul Hyett has opined, only after some prevarication, that although a reasonably competent architect could rely on the Class 0 representation in the BBA certificate {Day64/138}, an architect should not take the Class 0 endorsement at face value {Day64/147} without reading the rest of the certificate {Day64/151}.
- 4.28 The only piece of information that Harley considered in terms of the fire performance for RB 55 PE was the Class 0 representation {Day33/37} – {Day33/38}. Harley also assumed RB 55 PE was Class 0 in both fixings, riveted and cassette, based on the BBA certificate {Day33/33}. Harley did not consider an FR core for Grenfell Tower because, in part, the BBA certificate stated that both PE and FR cores were Class 0 {Day32/167}.
- 4.29 CEP, a designated Arconic “Approved Fabricator” also took the BBA certificate at face value because it believed it represented Reynobond as Class 0 {Day41/57}, both in PE and FR cores {Day41/191} – {Day41/192}. CEP also understood the Class 0 representation to apply to PE in rivet and cassette form {Day41/53} – {Day41/54}. See Section 13 below for CEP's involvement.
- 4.30 However, as is now clear from the evidence before the Inquiry, this reliance on the BBA certificate was misplaced given the representations made therein were fundamentally misleading and/or false.
- 4.31 By April 2014, Ms French (and Arconic) knew, or ought to have known, that Grenfell Tower was a tall residential building and that the Reynobond panels would be used in cassette form: {Day88/75}, {CEP00048962} and {MET00053159/61}. Therefore, when Ms French provided the BBA certificate to Harley, Ms French represented RB 55 PE cassette as safe and compliant for use on Grenfell Tower in circumstances where she knew, or ought to have known, that this was not the case (or was reckless as to whether it was so).

## **INSTALLATION OF RB 55 PE AND INSPECTION OF WORKS**

- 4.32 Rydon's process to ensure the cladding system installed was safe and compliant was to appoint a specialist cladding subcontractor that it believed was producing the design and conducting the installation in line with the BRs {Day22/55} – {Day22/56}. Similarly, Rydon ensured that the RB 55 PE panels were installed in accordance with the BBA certificate holder's instructions by appointing Harley as its specialist subcontractor {Day24/11}.
- 4.33 The installation works were then checked by the Clerk of Works and RBKC BC, and Rydon site managers also checked that the installations matched drawings: {Day22/59}, {Day26/62} and {Day27/48}. More specifically, the snagging procedure had three stages: Harley would perform inspection of its works, Rydon's site managers would then conduct snagging, and then the Clerk of Works would conduct a final snagging inspection {Day30/121}. In oral evidence, Ben Bailey, on behalf of Harley, confirmed that Harley were responsible for inspections and snagging of the cladding works {Day39/13}.
- 4.34 Rydon had no reason to believe that the cladding panels, both prior to and after installation, were not compliant and appropriate.



## SPECIFIC CRITICISMS OF RYDON RELATING TO THE CLADDING PANELS

### RYDON'S POSITION REGARDING HARLEY'S COMMENT THAT "ACM WILL BE GONE RATHER QUICKLY IN A FIRE"

- 4.35 The Inquiry has seen a series of emails between Siderise, RBKC BC, Exova, Harley and Studio E in March 2015 regarding the fire strategy for Grenfell Tower and the use of cavity barriers: {HAR00017738}, {HAR00003952}, {EXO00001315}, {EXO00001461}, {SEA00013076}, {RYD00037622}, {HAR00006585} and {HAR00003947}. Following on from this email chain, Daniel Anketell-Jones and Ray Bailey (both of Harley) had a private exchange in which Mr Anketell-Jones said "*There is no point in 'fire stopping', as we all know; the ACM will be gone rather quickly in a fire!*" {HAR00006585}.
- 4.36 Although Mr Lawrence was not copied into this email, Mr Anketell-Jones' comment was put to Mr Lawrence during oral evidence. Mr Lawrence explained that if he had known that the ACM would be "*gone rather quickly*" in the event of a fire, he would have checked with RBKC BC as it was the best placed, in this context, to provide advice as to compliance with the BRs {Day25/12} – {Day25/13}.

### RYDON'S POSITION REGARDING "LACKNALL MOMENT"

- 4.37 Claire Williams of KCTMO wrote to Mr Lawrence on 12 November 2014 commenting "*I am just writing to get clarification on the fire retardance of the new cladding - I just had a 'Lacknall' moment*" {RYD00023468}. In oral evidence, Ms Williams suggested that she may have got an answer from Mr Lawrence at a site meeting the following week, but when Counsel to the Inquiry pressed her further, she conceded that she had no recollection of how or what the answer Mr Lawrence gave was {Day55/145} – {Day55/146}.
- 4.38 Mr Lawrence explained in oral evidence that he would have understood Ms Williams' email to relate to the lower four floors of the building, as GRC panels were being discussed at the same time {Day24/161} – {Day24/162}. Mr Lawrence cannot recall providing an answer to Ms Williams and he confirmed that he did not have the expertise to answer such a technical question and, therefore, probably would have deferred to Harley {Day24/165}.

### RYDON'S POSITION RE "INERT" COMMENT

- 4.39 David Gibson (KCTMO) gave evidence that he raised concerns with Mr Lawrence at a meeting that there might be a "*Lakanal-style problem*" with the rainscreen cladding and insulation: {TMO00000887}, para 98. Mr Gibson stated that Mr Lawrence gave assurances that the cladding installed at Grenfell "*was completely inert and would not burn at all*": {TMO00000887}, para 99.
- 4.40 Mr Lawrence's position on this is clear; he did not make any such assurances and would not give any technical assurance unless he was informed to such effect by Studio E or Harley {Day24/170} – {Day24/171}.
- 4.41 As the Inquiry heard, Claire Williams claimed to have heard the exchange with Mr Gibson, yet cannot account for why minutes of this meeting have never been located {Day55/157} – {Day55/168}. Mr

Gibson cannot recall precisely when the alleged meeting took place: “*about March-April 2015 or possibly earlier*” {TMO00000887}, para 101, and claimed that he only saw the minutes in hard copy. Mr Gibson admitted that this was the only occasion during the course of the project in which hard copies of a meeting were produced in favour of electronic copies {Day53/183} – {Day53/184} and {Day54/2}.

- 4.42 In circumstances where all other project meetings involving KCTMO were appropriately recorded and have been disclosed, and in light of Mr Lawrence’s evidence that he did not have the technical knowledge to make such an assurance, Rydon invites the Inquiry to prefer Mr Lawrence’s evidence on this issue.

#### **WEHRLE STATEMENT THAT BLAKE SAID PE CAN BE USED IN UK AT CAMDEN SITE VISIT**

- 4.43 Claude Wehrle of Arconic stated in his (untested) W/S that he, along with Vince Meakins, visited Chalcots Estate in May 2017 to discuss delamination issues regarding its Reynobond cladding panels with Rydon’s representatives, Steve Blake and Alim White. Mr Wehrle contended that at this site meeting he expressed surprise that a tall building had been clad in PE ACM rather than FR. He further contended that, in response, Mr Blake told him that the BRs permitted use of PE on tall buildings: {MET00053190}, para 103.
- 4.44 The Inquiry has unequivocal oral evidence from both Rydon and Arconic itself that flatly contradicts Mr Wehrle’s contention. Mr Blake stated that he does not recall Mr Wehrle making any such comment, that the FR version of the Reynobond product was not discussed, and that he did not make any comment regarding PE ACM being permitted for use in the UK {Day29/62} – {Day29/63}. Mr Blake also maintained that he was unaware that ACM came in an FR version {Day28/48} – {Day28/49}. Mr Meakins of Arconic also gave oral evidence to the same effect, stating “*No, I don't recall that conversation ever going ahead with Rydon. I certainly didn't hear it [...] No, is the answer to that*”: {Day90/154} – {Day90/155}.
- 4.45 Therefore, Rydon submits that the evidence of Mr Blake and Mr Meakins should be preferred to the untested contention of Mr Wehrle on this point.

#### **ARCHITECTURAL CROWN**

- 4.46 The outline crown design, with limited details (e.g. Material was listed as “TBC”), was included in the NBS Specification before Rydon was appointed as D&B contractor {SEA00000169}.
- 4.47 Rydon was not involved in the design of the Crown {Day25/25} – {Day25/26}. Mr Lawrence was copied into emails between Studio E and Harley – as is usual practice for a D&B contractor in order to maintain general oversight of project progress – working up the design of the Crown and top of the building, but Rydon’s input was limited to ensuring adequate abseil access for maintenance {RYD00042558}.
- 4.48 On the basis that the Crown would hinder abseil access, Rydon proposed the Crown should be removed {IBI00001320}. Bruce Sounes, on behalf of Studio E, rejected Rydon’s proposition, saying Rydon

*“knows none of the history” and has “perhaps overlooked the fact that the crown is an existing feature, or at least 75% of it is. The abseil argument is specious and the proposed crown allows for future cradle maintenance access...”* {IBI00001320}. Planners also wanted the crown feature to remain {SEA00010722} and ultimately approved Studio E’s “radiator effect” design {RYD00004604}.

- 4.49 As with the design of other parts of the façade, Rydon reasonably relied on Harley to prepare satisfactory design drawings for the Crown, for Studio E to review and approve those drawings, and for RBKC BC to check same and provide sign-off {Day25/25} – {Day25/26}. Rydon was not in a position to assess what was required at the junction between the uppermost floor and the Crown nor within the Crown itself. Rydon relied on the specialist cladding subcontractor and the architect to ensure that the crown design specified was compliant in terms of firebreaks and/or cavity barriers {Day25/25} – {Day25/27}.
- 4.50 Harley’s detailed design for the Crown, as approved by Studio E, did not specify horizontal cavity barriers between the top of the uppermost floor and the foot of the Crown nor vertical barriers within the Crown itself. The reason for this became clear in the oral evidence; no one involved in the design or approval of the Crown believed that cavity barriers were in fact required.
- 4.51 Notwithstanding their clear responsibility and contractual obligation to ensure a safe and compliant façade design for the Tower, Studio E and Harley both confirmed that they failed to consider the potential fire risk posed by the Crown: {Day21/101} and {Day37/52} – {Day37/53}.

## CONCLUSIONS

- 4.52 The specification of ACM as an approved material in the NBS Specification gave Rydon comfort that the product had already been checked for compliance and deemed suitable. Rydon reasonably relied on a manufacturer such as Arconic not knowingly to sell a dangerous product for use at Grenfell. Rydon did not know that RB 55 PE failed to comply with the BRs either alone or when used in combination with other products. It did not know that fabricating the product into cassette form meant that it would behave differently in a fire. Rydon reasonably relied on a design team of consultants and subcontractors, supported by RBKC BC, to ensure the suitability and compliance of the materials used on the façade. Rydon, as is usual in the context of D&B contracts, tasked both Harley, and lead architect, Studio E, to ensure that the RB 55 PE product complied with the BRs.

## 5 CELOTEX

### INTRODUCTION

- 5.1 One witness in this Inquiry described Celotex’s marketing of its RS5000 product as *“It’s deliberately misleading. It’s masquerading horse meat as beef lasagne. And people bought it”* {Day10/56}. That is exactly what it was.

- 5.2 Before Celotex RS5000 was launched on the market in August 2014, Celotex made a concerted effort to construct a BS 8414 test rig that was as robust as possible: {CEL00000716} and {CEL00001886}. Nonetheless, its February 2014 test was an obvious failure {Day71/69} – {Day71/70}.
- 5.3 Although Celotex knew its product was unfit from a fire spread perspective even with 8 mm cement particle board (twice as thick as the ACM panels at the Tower), Celotex saw fit to market RS5000 for any configuration above 18 m {CEL00000411}. Celotex used 12 mm cement particle board panels (thrice the thickness of the ACM panels at the Tower), and inserted 6 mm magnesium oxide boards at thermocouples to ensure a pass, which it subsequently hid from the market {Day71/91}. Gaps on the test rig were reduced and then described as larger in test reports {Day72/3} – {Day72/4}. Photographs contained in the test report for its May 2014 testing also suggests that cavity barriers on the rig may have been full-width rather than ventilated: {BRE00002497/13, 27, 29} and {CEL00010887}.
- 5.4 From the research it had conducted into the design of its indestructible test rig, Celotex was abundantly aware that ACM and RS5000 would be an incendiary combination {CEL00001886}. So certain were they in this knowledge, that they steered clear of testing their product with either aluminium or ACM panels {Day71/30}. Yet, no warnings were ever provided to the market against this combination of products. Conversely, Celotex encouraged the use of its product on as many configurations as possible.
- 5.5 Celotex had a very clear strategy in place for its RS5000 product. It understood that the BRs were poorly understood and that it was sufficient to state the product was suitable for use over 18 m in order for architects to specify it: {CEL00000716} and {CEL00008648/11}. Celotex knew that “*contractors opt for more cost effective solutions...they don’t know enough about fire tests to challenge*” {CEL00000716}. Celotex also understood that the last gatekeeper in relation to compliance was Building Control, and that if the product had a Local Authority Building Control (“LABC”) certificate, it was unlikely that Building Control would challenge its use (*ibid*).
- 5.6 This strategy went exactly according to Celotex’s plan in the case of Grenfell Tower. Studio E believed RS5000 was suitable for the Tower based on assertions that it was “*applicable for use in buildings over 18 metres*” {Day10/54}. Harley believed it was non-combustible because of the claim that it was suitable above 18 m and “*Class 0 throughout*” {Day32/16}. Based on the pink banner on the front of Celotex’s datasheet which loudly proclaimed that RS5000 was suitable for buildings over 18 m, Rydon believed it was appropriate {Day24/130}. RBKC BC relied on the LABC certificate to satisfy itself that RS5000 was suitable {Day45/37} – {Day45/38}.
- 5.7 Celotex has maintained its position throughout this Inquiry that its sole role in relation to the Tower was as manufacturer and supplier of its product (Celotex Phase 2 Module 1 Opening submissions {CEL00011945}, para 16). Celotex was particularly critical of the construction professionals involved in the Tower for misunderstanding key provisions of AD B2 (Celotex Phase 2 Module 1 Opening submissions {CEL00011945} section F). Yet it was this very misunderstanding that Celotex sought and successfully managed to exploit: {CEL00000716} and {CEL00008648/11}. Celotex witnesses agreed in their evidence provided to this Inquiry that the Celotex claim stating “*for use in rainscreen applications*



and suitable for use in buildings above 18m in height” was “thoroughly misleading and dishonest” as it implied the product could be used on any configuration over 18 m: for example, {Day74/177} – {Day74/184}.

- 5.8 The stark reality is that only Celotex understood the true fire performance of its RS5000 product, as only it had conducted full scale testing on the product in various configurations. For this reason, what Celotex represented to the market mattered. However, information regarding that fire performance was a closely-held secret even within Celotex. Even the Celotex sales team had no access to the relevant test reports: {Day69/17} – {Day69/19} and {Day71/218} – {Day71/219}.
- 5.9 Until Celotex’s inner machinations were revealed during the course of this Inquiry, parties had no reason to doubt that Celotex was being truthful in its assertions regarding product performance. Celotex managed to gain market share for its product for a use to which it was never suited, based on configurations in which it was never tested.
- 5.10 Celotex concocted an elaborate plan to deceive the construction industry into using its product, and it succeeded. It knowingly presented information about its product to the construction industry in a way that confused the very specialists upon whom Rydon was reliant for checking compliance. Celotex’s datasheet and very carefully selected wording led to Rydon and its subcontractors forming the mistaken belief that RS5000 had been properly tested and certified for use on the Tower.

#### **CELOTEX’S ABOVE 18 METRE TEAM**

- 5.11 As part of its bid to break into the lucrative *above 18 m* market for rainscreen insulation, it was necessary for Celotex to embark upon a testing program. Early on, Celotex became aware that since its product was not a material of limited combustibility, it would need to conduct BS 8414 testing and obtain BR 135 certification in order to enter the above 18 m market: {CEL00001182}; see also {RYD00094561/24–27}.
- 5.12 Jonathan Roper, a 23-year-old Assistant Product Manager {Day70/114}, was the person Celotex chose to develop its FR5000 product into a brand that could be used on buildings above 18 m in height {Day70/126}. This was Mr Roper’s first job after graduating from a Business Studies degree at university {Day70/110}. Given the technical requirements for a product to satisfy the criteria for use above 18 m, Mr Roper’s evidence that he had no relevant industry experience or scientific qualifications is nothing short of astounding (*ibid*). To his credit, Mr Roper was frank in the evidence he provided to this Inquiry.
- 5.13 Less frank was Paul Evans, Celotex’s Head of Marketing at the relevant time, who was responsible for supervising Mr Roper {Day72/63} – {Day72/64}. Mr Evans denied knowledge of the most damning portions of Celotex’s deceptive strategy ({Day72/193}, {Day73/22} and {Day73/32} – {Day73/34}), despite being described by more than one witness as the ultimate decision maker: {Day74/103} – {Day74/104} and {Day72/129}. Mr Evans holds degrees in business and marketing, but had no more technical knowledge or experience than Mr Roper {Day72/58}.



- 5.14 Jamie Hayes was the third person in the team responsible for attaining above 18 m accreditation {Day72/126}. Mr Roper had approached him to assist with the above 18 m project in early 2013 {Day74/39}. Mr Hayes has no technical or tertiary qualifications {Day74/5}. However, Mr Roper said Mr Hayes was “*generally the go-to person for any regulation advice*” {Day72/134} – {Day72/135}.
- 5.15 Mr Roper, Mr Evans and Mr Hayes essentially comprised the above 18 m team. All three were marketers. Mr Hayes told this Inquiry that Celotex’s business model was driven by the marketing team {Day74/7} – {Day74/8}. The technical team was not able to override the marketing department’s decisions on technical grounds {Day74/8}. Mr Hayes says that Celotex became even more marketing-driven after it was acquired by St Gobain in 2012 {Day74/8}.
- 5.16 Not a single one of the above 18 m team had any scientific or technical background. None were trained in compliance under the BRs. Rather than reformulating its product to meet the criteria for buildings above 18 m, Celotex chose simply to adjust the way it presented its product to the market. The choices the above 18 m team made regarding materials for Celotex test rigs, and the way in which they subsequently communicated this to the market is essentially in-keeping with this approach. Rather than honestly presenting the product characteristics to the market, this team of marketers applied the Celotex spin to the test rig, and then again to the marketing materials which relied on that rig.

#### ABOVE 18 METRE TEST RIG SUBTERFUGE

- 5.17 What it lacked in technical expertise, the above 18 m team made up for in guile. Various notes produced by Mr Roper indicate that by 2014, when Celotex ran its first BS8414 test, the team had a thorough understanding of: which materials were most likely to fail with its product; product shortcomings; how the market approached compliance; and which materials to avoid on its rig – including the knowledge that “*a standard ACM panel [...] will melt and allow fire into the cavity*”: {CEL00001863}, {CEL00011052}, {CEL00001886} and {CEL00000716}. Mr Roper agreed in oral evidence that the fact ACM would melt and allow fire into the cavity was common knowledge in Celotex at the time {Day71/30}. This standard ACM panel which Celotex knew would fail is the very same type of ACM panel that was installed at Grenfell Tower.
- 5.18 Instead, Celotex chose for its rig an 8 mm Marley Eternit cement particle board which Mr Roper admits was “*completely unrealistic in terms of normal representative systems that were being used in the market*” {Day70/170}. It may have been unrepresentative of any system Celotex’s customers would ever install, but it stood the best chance of resulting in a pass result under BS 8414.
- 5.19 Nevertheless, despite all its attempts at engineering the perfect rig, with thicker than usual A2 cladding panels, Celotex’s first test on 14 February 2014 was a failure {Day71/78}.
- 5.20 Not to miss out on an opportunity, Celotex posed a series of detailed questions to Phil Clark of the BRE while the flaming test rig was being extinguished: {Day95/83} – {Day95/110} and {CEL00010052/12}. Celotex sought the BRE’s advice as to why the February test had failed and what they could do to prevent a failure on the next occasion (*ibid*). According to Mr Roper, Mr Clark recommended “*strengthening the outside of the test rig in order to counteract the cracking of the Marley Eternit*

panels” {Day71/70} – {Day71/71}. Mr Roper cites this conversation as the impetus behind the idea to insert magnesium oxide board (the “MgO board”) at the level of the thermocouples on the rig for its 2 May 2014 re-test {Day71/70} – {Day71/75}.

- 5.21 Rydon highlights a further potential discrepancy between the system tested in May 2014 and that described in Celotex’s product literature. Photographs of the May 2014 rig appear to suggest that full-width cavity barriers were installed, rather than ventilated cavity barriers: {BRE00002497/13, 27, 29} and {CEL00010887}. In all of these photographs, horizontal cavity barriers can be seen to have been installed with no visible gap between the cavity barrier and the rear surface of the cladding panel. The May test report is entitled “BS8414-2:2005 Test on a Celotex RS5000 insulated system with *ventilated Eternit rain screen*” {BRE00002497/1} (emphasis added). Most ventilated rainscreen systems require a 25 mm +/- 3 mm gap behind the cladding panel. Of course, if there was no gap between the cladding panel and the horizontal cavity barrier, then the system was not ventilated at all. The logical result would be that air gaps in the system were further reduced, starving the test rig of oxygen, thereby impeding flame propagation and spread. The question of full-width cavity barriers was not put to Celotex witnesses.
- 5.22 Mr Roper admitted that the test rig had been over-engineered to achieve a pass {Day71/98}. Aside from the 12 mm Marley Eternit cladding panels that were used, all of the other relevant details that went into over-engineering the system were omitted from the BRE report, and from Celotex’s subsequent marketing materials – which it purported to base on this report. The detail of the MgO board did not appear in the first draft of the report produced by the BRE {Day71/127}, and Mr Roper says that Mr Clark had made the decision to omit this reference {Day71/130}. (See further details regarding the omission from the report at {RYD00094561/27–28}). Mr Clark denied any knowledge of presence of MgO in the rig {Day99/18}. Regardless of where the truth lies, the fact remains that Celotex did nothing to correct the omission {Day71/131}. Since Celotex was the test sponsor, had Celotex requested a truthful representation of the rig with that detail included it is highly unlikely that its request would have been refused.
- 5.23 Mr Roper also admits that gaps on this rig were smaller than 10 mm, but he asked that 10 mm gaps be indicated on drawings and this is what was done {Day72/3} – {Day72/4}. As a result, the drawings in the May 2014 test report indicated a system with a much greater level of ventilation than that tested {BRE00002497/15, 18}. Again, a system with less ventilation would result in slower flame spread.
- 5.24 Finally, despite the photographs of the May 2014 test rig which suggest that horizontal cavity barriers were not in fact ventilated, this was not indicated in the test report.
- 5.25 True to its marketing background, through the input it had into the May 2014 test report, the above 18 m team simply ignored the parts of the report it did not like, and sought to highlight aspects which suggested similarities with other ventilated rainscreen systems. This choice to disseminate only select information was carried through to the RS5000 marketing materials.

## MISLEADING MARKETING MATERIALS

- 5.26 Having obtained its pass result, Celotex set about a strategy to launch its insulation product in the above 18 m market. Its market research was presented to the management team on 14 May 2014, the summary of which stated “*Nobody Understands The Test Requirements (Architects Ask If It Can Be Used Above 18m. The Answer is YES)*” {CEL00008648/11}. Mr Roper confirmed that he and Mr Evans had input into this presentation, and that it represented the Celotex plan to exploit industry ignorance for a market worth £10 million per annum, as Kingspan had {Day71/109}.
- 5.27 In August 2014, Celotex launched its suite of marketing materials, which included its Product Datasheet {CEL00000008}, Rainscreen Cladding Applications document {CEL00000409}, and the Specification Guide {CEL00002154} (See also {RYD00094561/29–31}).
- 5.28 The Grenfell Tower project was a specific target for Celotex’s RS5000 product. Celotex had a number of dealings with Harley following the RS5000 launch in the hope of having its product installed on the Tower. The very day after RS5000 was launched, Jonathan Roome contacted Ben Sharman of Harley informing him that Celotex had launched their above 18 m product, and seeking to attend Harley’s offices to formally present the product to their team. On 27 August 2014, Celotex sent its launch materials to Daniel Anketell-Jones of Harley (see {RYD00094561/34–38}).
- 5.29 Celotex’s launch materials all contained the bold proclamation “*suitable for buildings above 18m in height*”, in keeping with the market research discussed at the May 2014 meeting.
- 5.30 The Inquiry has heard from Simon Lawrence of Rydon {Day24/123} and Neil Crawford of Studio E {Day10/54} that they both relied on this assertion in Celotex’s datasheet. In evidence provided to this Inquiry, Mr Hayes described Celotex’s claim as “*thoroughly misleading and dishonest*”: {Day74/177} – {Day74/184}. Debbie Berger of Celotex, who replaced Mr Roper as product manager in October 2014 {Day78/6}, agreed in evidence she provided to this Inquiry that it was Celotex’s intention to lead people to believe that there was global approval for use of RS5000 above 18 m {Day78/89}.
- 5.31 The Celotex datasheet also contained the assertion “*Has Class 0 fire performance throughout the entire product in accordance with BS 476*” {CEL00000411}. This bogus proposition conflated the concepts of Class 0 and limited combustibility – exploiting the confusion that Celotex knew already existed in the market. Celotex agreed that its claim of “*class 0 throughout*” was nothing more than a marketing proposition {Day74/35} – {Day74/36}. Celotex made this claim simply to go one better than Kingspan, whose literature stated that only the core had been tested {Day74/35} – {Day74/36}. The Grenfell design team took this claim to have a different meaning. Harley understood the claim of “*class 0 throughout*” to mean that RS5000 was a product of limited combustibility: {Day32/16} – {Day32/17} and {Day33/90} – {Day33/91}. Studio E understood it to mean that RS5000 “*retarded and reduced flame spread throughout the product*” {Day10/55}.
- 5.32 In fact, Mr Evans admitted to this Inquiry that Celotex was aware that there was no link between Class 0 and suitability for buildings above 18 m {Day72/107} – {Day72/109}. He says RS5000 was advertised as Class 0 simply to compete with Kingspan (*ibid*).

## LABC APPROVAL

- 5.33 Mr Roper had recognised in November 2013 “*The only figure who might possible challenge a product’s eligibility for use in buildings above 18m is the building control officer...A building control officer is unlikely to challenge a document that is approved from the head of building control*” {CEL00000716}. And so, having obtained its BS 8414 test report, Celotex also set about obtaining LABC approval (see also {RYD00094561/31–33}). This was presumably the certificate ({CEL00000010} and {CEL00000009}) upon which John Hoban of RBKC BC relied to satisfy himself that RS5000 was suitable for use at Grenfell Tower {Day45/37} – {Day45/38}. Mr Roper agreed that the wording (which had come from Celotex itself) in this certificate was misleading and that Celotex was seeking to use it to influence Building Control’s opinion of RS5000 over 18 m {Day72/41} – {Day72/42}. David Ewing was the drafter of this certificate, and Mr Roper told this Inquiry that Celotex sought to reinforce Mr Ewing’s misunderstanding in order to take advantage of it {Day72/35} – {Day72/36}. Ms Berger agreed that the reference in the LABC certificate to BBA certification for RS5000 was untrue {Day78/76} – {Day78/77}. She also told this Inquiry that she was uncomfortable with the assertion in the LABC certificate that RS5000 could be used with a variety of cladding panels as this was misleading {Day78/78} – {Day78/79}.

## CONCLUSIONS

- 5.34 It is beyond doubt that the information in Celotex’s BS 8414 report was materially inaccurate. It deliberately omitted all references to the MgO board, it deliberately overstated ventilation gap sizes, and it represented full-width cavity barriers as ventilated.
- 5.35 Celotex has sought to deflect responsibility on the basis of the differences between the façade configuration at Grenfell Tower and the tested system listed in Celotex’s marketing materials. But even if the Grenfell design team had sought a desktop assessment, it would have been based on a test report that was unrepresentative of the system that was actually tested – rendering it meaningless.
- 5.36 If in fact Celotex did employ full-width rather than ventilated cavity barriers in its May 2014 test rig, RS5000 was unsuitable for any ventilated rainscreen façade, as the test rig was not a ventilated one.
- 5.37 Through its communicated test results and its marketing materials, Celotex sought to deceive. Celotex had researched every facet of the market to determine just what to say to each decision maker in the process to ensure that RS5000 was installed on high rise buildings. If what Celotex did say about its product ever coincided with the truth, it banked on it not being understood by the industry.
- 5.38 Throughout this Inquiry, notwithstanding its clear aim was to mislead, Celotex has relied on the qualification in its marketing materials which stated that its assertions were only valid for the configuration tested, and that it was up to those seeking to use its product to confirm compliance. The difficulty with this is that the only information the market had to make its own assessment as to compliance was the information Celotex provided to it regarding its test results.



### THE CHOICE OF FR5000 IN THE NBS SPECIFICATION

- 6.1 On 16 August 2012, Max Fordham recommended Celotex FR5000 to Studio E on the basis of its advertised U-value {Day42/81}. We now know that Studio E accepted this recommendation without question, and without independently checking FR5000's suitability {Day12/181}.
- 6.2 In fact, even though it was not an option which appears in the relevant section of the NBS specification template (H92, Rainscreen cladding), someone at Studio E (most likely Tomas Rek) manually overrode the system to insert it into the NBS {Day12/122}.
- 6.3 On 12 September 2012, less than a month after Max Fordham's recommendation to use FR5000, Celotex attended Studio E's office to give a presentation entitled "*Celotex and Part L: Simplifying Compliance*" {CEL00012241}. The presentation touted Celotex's "*recent developments and innovation*" in developing a product that had both a low lambda value and which had strong fire safety properties {CEL00012254}. In fact, the script for this presentation explicitly stated:

*"With fire performance being an important selection consideration for many projects, Celotex was the first PIR manufacturer to have a Class O rated product in its range. FR5000 and CG5000 offer Class O performance throughout the entire product"* {CEL00012254/3}

This presentation was not put to either Mr Sounes or Mr Rek. However, an attendance certificate confirms that at least Mr Rek attended the presentation {CEL00012274}.

### THE CHOICE OF RS5000 AT THE TOWER

- 6.4 Rydon relied on its specialist subcontractors to advise on suitability of materials {Day24/124}. Whilst FR5000 had initially been specified, Harley settled on RS5000 for the Tower. Evidence provided to this Inquiry indicates that unbeknown to the market at the time, RS5000 was just a re-branded FR5000 (see, for example, {Day70/2}).
- 6.5 Ben Bailey said he was informed by Studio E that "FR5000" was a typo and that the product specified should have been "RS5000" all along {Day39/73}. He did not question the suitability of RS5000 at any point {Day39/67} – {Day39/69}. The evidence suggests that Mr Roome lulled Harley into accepting that RS5000 complied with the regulations.
- 6.6 Mr Anketell-Jones said he had a close working relationship with Mr Roome on previous projects {Day36/78}, and estimated that Mr Roome visited Harley's offices "*every couple of weeks and at least 30 times a year*" {Day69/174}. Until Grenfell, Harley had never used a PIR insulation before {Day32/149}, generally opting for Rockwool, a product with which they were familiar {Day33/68} – {Day33/69}. The fact that they chose to switch to FR/RS5000 at the Tower highlights both the prescriptive nature of the NBS specification, and the strength of the relationship Mr Roome had built with Harley.
- 6.7 Whilst he may not have seen the test reports, Mr Roome was aware that RS5000 could only be installed in the stated tested configuration {Day69/51} – {Day69/52}. Yet he did not recall ever advising Harley



of this crucial detail, despite his extensive dealings with them {Day69/178}. Nor does he recall ever drawing Harley's attention to any caveats regarding RS5000 {Day69/179}.

## THE CELOTEX RS5000 DATASHEET

- 6.8 The Celotex RS5000 datasheet appears to first have been circulated to Studio E and Rydon during the course of discussions around placement of cavity barriers. On 18 September 2014, Mr Anketell-Jones forwarded the datasheet {CEL00000411} to Rydon and Studio E in support of the proposition that it was Class 0 {SEA00011724}. That datasheet contained the assertion "*Has Class 0 fire performance throughout the entire product in accordance with BS 476*". This wording conflated the concepts of Class 0 and limited combustibility. Whilst only the FR5000 facers had been tested to BS 476-6 and BS 476-7 ({Day72/94} – {Day72/95}), this wording suggested to the market that RS5000 had been tested to BS 476-11, making it a material of limited combustibility. Celotex witnesses agreed during the course of their evidence that the term "*Class 0 throughout*" was simply a marketing proposition {Day74/35} – {Day74/36}. They agree they knew that this had no bearing on the product's suitability for use over 18 m {Day72/107} – {Day72/109}. Mr Roome admitted that the longer he worked at Celotex "...the longer or the more it seemed that some people were unsure of what could or couldn't be used above 18 metres" {Day69/42}.
- 6.9 When put to them by Counsel to the Inquiry, Mr Crawford and Mr Lawrence separately agreed that the wording of the datasheet had convinced them of RS5000's suitability for use on the Tower.
- 6.10 As architect, Studio E was responsible for investigating the change from FR5000 to RS5000 {Day64/182} – {Day64/183}. Once Rydon was appointed, this was Mr Crawford's responsibility. Mr Crawford said he relied on the repeated statement in the datasheet that RS5000 was "*applicable for use in buildings over 18 metres*" {Day10/54}. He understood the reference to BS 476 to mean that RS5000 had been tested for limited combustibility {Day10/54}. Mr Crawford said that Celotex's assertion that RS5000 "*Has Class 0 fire performance throughout the entire product*" suggested that the RS5000 "*...retarded and reduced flame spread throughout the product*" {Day10/55}. Mr Crawford now sees this as a calculated attempt by Celotex to deceive "...based on the understanding that the average architect would have, with the way they have worded this document" {Day10/56}.
- 6.11 To confirm his understanding of the RS5000 fire performance properties represented in the datasheet, Mr Crawford forwarded it on to Terence Ashton of Exova: {Day10/56} – {Day10/57} and {CEL00000411}. Mr Ashton, however, says he failed to open the datasheet, or to read it before providing his response to the design team {Day18/49}. As a result, Celotex's baseless claims were left unverified by a technical expert – exactly as they had hoped.

## RYDON'S RELIANCE ON THE CELOTEX DATASHEET

- 6.12 Rydon was appointed to the Grenfell Tower project after RIBA Stage E. Rydon's tender was based on the materials determined in the NBS specification formulated by Studio E. Paul Hyett has confirmed

that a design and build contractor was entitled to proceed on the basis that materials or products specified in the NBS were compliant {Day64/78} – {Day64/79}.

- 6.13 Nevertheless, Mr Lawrence made attempts to satisfy himself that RS5000 was suitable, by reading the datasheet. He also relied on the assertion that RS5000 was suitable for rainscreens over 18 metres {Day24/123}. The information on the front page of the datasheet was Mr Lawrence’s focus since, as a contracts manager, he was not able to interpret technical information {Day24/130}. Rydon relied on Harley and Studio E for technical interpretation and advice.
- 6.14 Mr Lawrence should not be criticised for lacking the expertise to interpret Celotex’s datasheet. The industry did not expect this of a contractor, as it was standard practice for the cladding specialist and architect to take charge of interpreting technical information, and reporting back to the head contractor {Day64/80}. Mr Hyett agrees that contractors were not expected to be able to conduct a technical check, and that they would employ architects to do this {Day64/80}. Celotex’s internal correspondence indicates that in general, contractors did not have the technical ability to interpret test results {CEL00000716}.
- 6.15 Conversely, especially since they understood the lack of understanding in the market of test results, Celotex should have made their data sheet easier to interpret. Instead, they exploited the complexity of the regulatory requirements and testing requirements, and the market-wide confusion over the difference between “Class 0” and “limited combustibility”. This was done by way of the bright pink banner on the front page of their datasheet, boldly declaring its product suitable for use above 18m, when Celotex knew the only way RS5000 had passed BS 8414 testing was through over-engineering its rig.

## **BUILDING CONTROL RELIANCE ON THE LABC MATERIALS**

- 6.16 To satisfy himself of RS5000 compliance, Mr Hoban’s port of call was the LABC website {Day45/38}. Mr Hoban informed this Inquiry that he relied on the assertions he had read that the material had been tested to BS 8414 and that it was suitable for buildings over 18 metres in height {Day45/40} – essentially the tag line in all of the RS5000 marketing materials.
- 6.17 Mr Hoban conceded he should have requested a full test report for RS5000 {Day45/39}. However, he said he did not do so because he would not have understood the report {Day46/77}. He had never been trained to conduct an exercise to substantiate the fire resistance rating of construction to determine compliance {Day46/76}. He was also clear that the LABC document he had looked at did not state that RS5000 was only suitable for use when used in exactly the same configuration as tested {Day46/44}.
- 6.18 Crucially, Mr Hoban said that at the time he would have expected LABC registered documents to be sufficient in order to confirm compliance {Day46/77}.
- 6.19 On 1 November 2013, an internal Celotex email between Jonathan Roper and Paul Evans stated:

*“The only figure who might possibly challenge a product’s eligibility for use in buildings above 18 m is the building control officer. Kingspan I would suggest do not have a piece of paper that states they can specifically be used behind any cladding panel. What they have done is got a BBA certification stating the fire test method and taken that to LABC to get a registered*

*document detail which states that the K15 can be used in a variety of cladding systems and complies with ADB through passing BR135. A building control officer is unlikely to challenge a document that is approved from the head of building control” {CEL00000716}*

- 6.20 It seems Celotex’s RS5000 LABC certificate had worked just the trick it had hoped. Mr Hoban did not question the information he read on the LABC website because it had been seemingly endorsed by the LABC. This was all part of Celotex’s elaborate strategy to have its RS5000 product installed on as many buildings across the UK as possible.

## CONCLUSIONS

- 6.21 Celotex succeeded in hoodwinking the various construction professionals involved in the project to ensure that RS5000 was installed.
- 6.22 Jamie Hayes and Jonathan Roper expressed admiration for Kingspan’s use of “*clever wording*” in its K15 marketing materials: {Day74/63} and {Day71/9} – {Day71/10}. Celotex proceeded to adopt its own “*clever wording*” in its own RS5000 materials.
- 6.23 Studio E and Harley – the architect and cladding specialist – both of whom would have been involved in specifying were groomed through CPD presentations and establishing personalised relationships of trust. This made them less likely to question Celotex’s representations.
- 6.24 RBKC BC, Studio E, Harley and Rydon were taken in by Celotex’s deliberately confusing wording. In particular, Mr Lawrence focused on the very portion of Celotex’s datasheet that was designed for him to focus on – the giant pink banner proclaiming suitability for use over 18 m.
- 6.25 Exova, regrettably, did not open and consider the datasheet when it was sent to them for comment on compliance {EXO00001292}.
- 6.26 The evidence outlined above demonstrates that Celotex’s plan to exploit industry confusion over the BRs and fire testing succeeded, with tragic consequences.

## 7 KINGSPAN K15

### INTRODUCTION

- 7.1 Kingspan acknowledges it tested its K15 product with a panel that was never suitable as a cladding panel {Day75/69}, and then continued to market products of a different formulation based on that initial test {Day75/127}.
- 7.2 As part of its marketing strategy, Kingspan obtained BBA certification for K15 {Day75/201}. Ivor Meredith of Kingspan described the BBA certificate as “... *a general green light of acceptability ... I would have thought it gives confidence to any buyer when they see that badge*” (*ibid*). And indeed, it did give confidence to Harley, the specialist cladding contractor upon whom Rydon was relying.
- 7.3 Mr Meredith told this Inquiry that one of his concerns at the time was that Kingspan was selling a potentially dangerous product to the public. However, he had been told not to be negative and “*went with the flow*” {Day85/165} – {Day85/166}. Evidence provided by Kingspan witnesses spoke of a toxic

culture where concealing product information from the public was encouraged, so long as this concealment aided sales {Day76/17} – {Day76/18}. One example of this was Kingspan’s approach to the wording in K15 BBA certificates. Mr Meredith agreed that Kingspan’s approach was to bury wording in certificates adverse to Kingspan’s interests as far as possible, in the small print, and deep in the certificate {Day76/202}.

#### **SUBSTITUTION OF K15 FOR RS5000 IN MAY 2015**

- 7.4 Harley first substituted K15 for RS5000 in May 2015 {SIG00000012}, seemingly because of supply issues {SIG00000013}. On this occasion, there is no evidence that Harley sought anyone’s approval before making the substitution. Ben Bailey of Harley alleges that he discussed the substitution with Simon Lawrence or Simon O’Connor at Rydon, but that there was no discussion at Harley about the need to obtain Rydon’s approval for the substitution {Day39/129}.
- 7.5 Mr Lawrence was not aware there was any K15 installed at Grenfell Tower until after the fire {Day24/149}. He does not recall any conversations regarding substitution of K15 with Ben Bailey (*ibid*). He confirms that Harley did not seek his permission at any point to substitute K15 for RS5000 {Day24/150}.
- 7.6 Mr O’Connor was also unaware that K15 was installed on the Tower {Day26/98} – {Day26/99}. He did not recall any discussions with Harley about a delay in delivery for RS5000 {Day26/108}. Mr O’Connor did not know anything about K15’s fire performance at the time {Day26/109}.
- 7.7 The sum of the evidence provided to this Inquiry tends to suggest that Mr Bailey unilaterally made the decision to substitute K15 for RS5000 at this point, after learning from SIG that there were RS5000 supply issues. He has conceded that he thought K15 could be used above 18m with any rainscreen {Day39/102}. He understood that K15 and RS5000 were equivalent products, based on what he had been told by Jonathan Roome of Celotex, his previous experience, and his basic understanding of insulation above 18 m {Day39/108}. SIG had also assured Mr Bailey at the time that K15 was an equivalent product, and he had no reason to doubt this {Day39/109}.
- 7.8 Crucially, Mr Bailey informed this Inquiry that he checked the K15 BBA certificate with Daniel Anketell-Jones and Mark Stapley before placing this order {Day39/117}. As the BBA certificate stated K15 was Class 0, Mr Bailey understood that it was suitable for use over 18m {Day39/121}. At the time, Mr Bailey thought a Class 0 classification meant that K15 was a material of limited combustibility (*ibid*). Rather than reviewing the 2013 certificate which would have been the most up-to-date at the time, Mr Bailey says they reviewed the 2008 certificate {Day39/119}. He was not aware the K15 BBA certificate had been updated (*ibid*).
- 7.9 As set out above, due to Kingspan’s strategy over its certificate wording, there was nothing in the 2008 certificate which stated fire performance was only valid in the configuration tested {LABC0000862/1, 5, 6}. Ivor Meredith of Kingspan has admitted that Kingspan was aware that this certificate stated no limitations for use above 18 m, and that Kingspan did not want the BBA to amend the certificate which



would have made it clear to the public that there were limitations on use, as this would limit sales {Day75/211} – {Day75/212}.

- 7.10 Conversely, the December 2013 certificate contained the words “*The product incorporated in the construction defined in section 8.2 can be used in buildings with a floor more than 18m above ground level*” {BBA00000036/6}. Kingspan witnesses accepted during questioning by this Inquiry that this was the first BBA certificate which made clear that the test data referred to was only applicable to the specified system {Day81/192}. Kingspan evidence set out above demonstrates that the limitations on use were deliberately buried.
- 7.11 Furthermore, this 2013 certificate was based on 2005 testing {Day81/192}, and the cladding construction set out at section 8.2 of the certificate referred to the 2005 formulation of K15, which no longer existed at that point {Day75/124} – {Day75/128}. The 2005 BS 8414 test incorporated perforated cavity barriers which had all but disappeared from the market in 2015, after falling out of fashion {KIN00008804}. Aside from attempting to disguise limitations on use, this certificate was based on a façade configuration that could never be replicated.

#### **SUBSTITUTION OF K15 FOR RS5000 IN SEPTEMBER 2015**

- 7.12 In September 2015, Harley substituted a second batch of K15 for RS5000 {CCF00000019}. Whilst he does not recall doing so {Day39/140}, it appears that on this occasion Mr Bailey may have informed Rydon of his intention to substitute the K15: {RYD00094213} and {Day27/57} – {Day27/58}.
- 7.13 David Hughes of Rydon said that Ben Bailey discussed the use of Kingspan with him, and that he had informed him that RS5000 and K15 were “*like for like*” products {Day27/57} – {Day27/58}. Mr Hughes recalls that he was provided with a datasheet for K15, and he checked its U-value to ensure it had similar insulating properties to RS5000 {Day27/58}. Mr Hughes did not however check on the fire performance of K15 {Day85/59}. Since every project he had worked on had involved either Celotex or Kingspan, Mr Hughes expected K15 was fine from a fire safety perspective {Day27/65}.
- 7.14 Mr Hughes was not aware that K15 had previously been installed on the building, and was under the impression that Mr Bailey was seeking to use it for the first time {Day27/60}. Mr Hughes provided his permission for use “*...as long as it complied with the u-values and was a similar product*” {Day27/71} – {Day27/72}.
- 7.15 Rydon relied on Harley, its specialist cladding subcontractor, to advise it in terms of suitable materials for the façade. In circumstances where the specialist cladding subcontractor recommended K15, it was not for Rydon to second guess this choice where those who held themselves out as having specialist cladding knowledge favoured the product.
- 7.16 Harley was convinced of the product’s suitability after reviewing its BBA certificate – a certificate based on a K15 formulation which was different from that being sold in 2015.



## CONCLUSIONS

- 7.17 Kingspan's marketing and strategy to bury information in BBA certificates in relation to limitations of use had a direct impact on Grenfell Tower.
- 7.18 First, Kingspan was the pioneer in finding ways to fool the market. It was Kingspan's subterfuge in the marketing of K15 that inspired Celotex to act in the same way in order to compete.
- 7.19 Second, BBA certificates were the standard document the construction industry would revert to in order to satisfy themselves in relation to compliance. Harley checked the K15 BBA certificate before deciding to substitute K15 for RS5000 at the Tower. Harley were, as Kingspan intended, duped. Kingspan sought to mislead in order to get K15 used in the above 18m market and succeeded.
- 7.20 Even if Harley had been alerted to the buried section regarding restrictions in use, these restrictions were based on a K15 product which was no longer being manufactured, and therefore invalid.
- 7.21 Kingspan conducted a number of tests on its newly-formulated version of K15, and knew that this product could not achieve a clear pass when tested {Day84/45}. It is this very product which struggled to pass tests that was sold to Harley and installed on Grenfell Tower.

## 8 SIDERISE

### SIDERISE TESTING

- 8.1 By the early 2000s the demand for open-state cavity barriers had grown, and Siderise embarked on a New Product Development Introduction project to meet this demand {Day102/25}. Siderise was the first in the industry to test open-state cavity barriers {Day102/44}. Christopher Mort was responsible for the statutory and regulatory requirements around this new product {Day102/211}.
- 8.2 Taking advantage of the lack of prescription in the regulations, Siderise resolved to test its product between two concrete slabs: {Day102/52} and {Day102/92}. This configuration disregarded the fact that in a real life rainscreen setting, panels would be subject to movement once exposed to heat.
- 8.3 Siderise also "*came to an agreement*" with Exova that the product would only be assessed after the intumescent had closed the cavity {Day102/30}. In circumstances where a cavity barrier in a real life setting would need to close a gap as quickly as possible in order to perform its function of impeding fire, heat, and smoke spread, this was clearly an artificial assessment.

### SIDERISE INFILTRATION OF INDUSTRY ORGANISATIONS

- 8.4 Mr Mort was part of the technical working group for the Association of Specialist Fire Protection ("ASFP") and was personally involved in developing TGD19 guidance for testing open-state cavity barriers, together with 11 other members of the ASFP Technical Working Group {Day102/81} – {Day102/82}.
- 8.5 The TGD19 standard provided for the type of testing Siderise had conducted – cavity barriers tested between two concrete elements {SIL00001540/6}. TGD19 also permitted the first five minutes of the test to be disregarded in determining the pass criteria for closing times {Day102/123}. This perfectly

matched the product performance Siderise had observed in earlier tests it had conducted – guaranteeing a pass for Siderise products.

- 8.6 From 2011, Mr Mort was also a member of the CWCT {Day102/131}, which produced technical notes to assist the construction industry {Day102/130}. In fact, compliance with CWCT guidance notes was one of the requirements of the NBS Specification at Grenfell Tower {SEA00000169/68}.
- 8.7 In CWCT Technical Note 73, it was stated that Siderise cavity barriers were “*designed to fully close the cavity in under two minutes in fire test conditions*” {SIL00002428}. This was, of course, thoroughly misleading in light of the fact that it suggested to the industry that Siderise barriers would activate and seal a gap in two minutes, when the tests only measured performance after 5 minutes.
- 8.8 Through becoming an active member of the ASFP and the CWCT, Mr Mort managed both to influence the testing regime in order to suit Siderise’s products, and to have Siderise products recommended in industry guidance.

### SIDERISE ADVICE AT GRENFELL TOWER

- 8.9 In March 2015, Harley contacted Siderise requesting that they advise as to “...*what would be the normal fire rating required*” {SIL00000030}. Harley went on to state “*The building is a domestic block of flats, 24 stories [sic], fully overclad with ACM rainscreen cladding*” (ibid). The query was received by Barnaby Carrick of Siderise, who forwarded his draft response to Mr Mort to confirm its acceptability before it was sent on to Harley {SIL00000034}.
- 8.10 Mr Mort responded directly to Harley the following day setting out the requirements of AD B and stating “*our open state cavity barrier system ... would be suitable*” {SIL00000038}. Mr Mort admits he did not identify any of the risks associated with ACM rainscreen panels in his response to Harley {Day102/16}. He told the Inquiry “*The checks on the cladding suitability, et cetera, et cetera, are not the responsibility of Siderise; that’s the responsibility of Harley Curtain Walling and the fire engineer and the approving authority on the project*” {Day103/17}. Harley could not have known that the Siderise tests were conducted in an artificial environment, that Siderise products had never been tested with ACM panels up until that point, and that performance was only measured after closure.
- 8.11 Mr Mort, on the other hand, was acutely aware of Siderise cavity barrier limitations with certain types of ACM panel. In November 2014, he worked with Carea to advise on BS 8414 testing {SIL00001671}. In an email to Carea regarding their test rig (ibid), Mr Mort stated:

*“As previously mentioned your system uses a Class ‘M2’ external façade board, from my experience a Class ‘M2’ or equivalent Class ‘C’ European façade board will not pass this test, and even with a selected Class ‘A1’ board the type and thickness are also a critical to a successful test, and that regardless of cavity barriers and thermal insulation if the external board fails then these components are redundant”*

If Mr Mort knew that even a cladding panel with an A1 rating might fail in a test setting, he must have appreciated the risk in a real life fire scenario.

- 8.12 Whilst Mr Mort admitted that ACM panels could distort when heated and compromise the effectiveness of cavity barriers, and that Siderise appreciated this was a risk prior to Grenfell, he appeared to blame cladding manufacturers for not taking Siderise up on their request to assist with cladding testing: {Day102/120} – {Day102/121} and {Day120/128}.
- 8.13 Prior to the fire, Siderise had not undertaken any BS 8414 testing of its own to determine how a system incorporating its product and ACM panels would perform in a fire {Day102/122}. By the time Siderise cavity barriers were supplied to Grenfell Tower, Siderise cavity barriers had only been tested between two concrete lintels {Day102/49}. Mr Mort also conceded that Siderise cavity barriers had not been tested for the void sizes at the Tower, and that extended application assessments for those void sizes were only conducted after the fire (*ibid*).
- 8.14 When questioned as to why, in the absence of appropriate testing, Siderise continued to market its products for rainscreen systems, Mr Mort’s response was that in a TGD19 test, its cavity barriers were exposed to far higher temperatures than the maximum 600 °C in a BS 8414 test, and therefore cavity barriers could not be the weak link in a BS 8414 test setting {Day102/129}. This ignores the reality of the performance of a façade being dependent on the combination of its parts.
- 8.15 Harley received a direct assurance from Siderise that its product was suitable at Grenfell Tower.
- 8.16 In response to further queries from Harley, at the end of March 2015, Mr Mort reviewed Harley drawings and provided further advice on the cavity barrier strategy at Grenfell Tower {HAR00018971}. This time, Mr Mort provided marked-up drawings to indicate where cavity barriers should have been placed in order to comply with AD B (*ibid*). Mr Mort provided this advice without questioning the type of ACM panel being installed, or requesting a copy of the fire strategy at the Tower {Day103/41}. He told this Inquiry he provided advice on the project “*in good faith*” {Day103/47}. The Inquiry will assess the good faith of Mr Mort. In providing this advice he and Siderise became responsible for that advice. At this stage, Mr Mort knew that regardless of where the cavity barriers were placed, they would be completely ineffective with certain types of ACM panel.
- 8.17 Mr Mort’s failure to request details of the ACM or fire strategy indicated a wilful blindness on his part, in light of his detailed knowledge regarding Siderise cavity barrier performance.

## CONCLUSIONS

- 8.18 Dr Lane, Professor Bisby, and Professor Torero all agree that the cavity barriers at Grenfell Tower would not have prevented either vertical or lateral flame spread on the night of the tragedy – regardless of how well they had been designed or where they had been placed: {JTOS00000001/4}, {Day77/138} – {Day77/139}, {Day78/89} – {Day78/90} and {Day79/144} – {Day79/145}.
- 8.19 Nonetheless, when Harley approached Siderise for advice as to the suitability of its product at the Tower, Siderise provided assurances knowing its product would be useless with certain types of ACM panels. No blame can fairly be directed at Rydon for this state of affairs.

## 9 THE BRITISH BOARD OF AGRÉMENT AND THE BUILDING RESEARCH ESTABLISHMENT

### BBA

- 9.1 As seen from Rydon's submissions above explaining the responsibility of Arconic, Celotex and Kingspan, the BBA certificates played a significant role in leading many in the construction industry to believe that these corporations' products complied with the BRs, satisfied AD B and, more specifically, that these products were safe to use in buildings above 18 m.
- 9.2 Rydon submits that the ultimate responsibility for their misuse lies with the manufacturers; they were the ones that gamed and cheated the certification system. The evidence, however, demonstrates that the BBA should have acted as an independent body and certifier and been less willing to pander to these manufacturers. The BBA, knowing the reliance put on their certification, conceded under questioning from Counsel to the Inquiry that they acted irresponsibly. The BBA should have been astute to prevent manufacturers from misleading the market.
- 9.3 According to the BBA itself, the purpose of a BBA certificate was to provide reassurance to those in the construction industry and to set out the BBA's opinion as to a product's compliance {BBA00011095/2}.
- 9.4 The use of RB 55 PE on tall buildings in the UK indicates erroneous reliance on the BBA certificate. On the Grenfell Tower project, as the evidence referred to elsewhere in these Submissions demonstrates, key parties such as Studio E, Harley, CEP, and Rydon, relied upon and accepted the BBA certificate as confirmation that RB 55 PE was compliant and suitable for use in riveted and cassette fixings: {SEA00014273}, para 387, {Day32/124}, {Day46/15}, {Day24/4} – {Day24/5}, {Day29/24}, {Day41/183} – {Day41/184}, {Day33/33} and {Day24/10} – {Day24/11}. With John Hoban's reliance on the certificate in mind {Day46/15}, RBKC BC must have assumed that to be the case as well.
- 9.5 The Inquiry has heard evidence from BBA witnesses that whilst the BBA certificate was supposedly intended to certify the raw product or plain sheet of RB 55, the purpose of the certification was to cover the product for its end use, and that the product could not be used unless fabricated into cassette or rivet fix: {Day105/57}, {Day105/83} – {Day105/84} and {Day109/139} – {Day109/142}. The BBA agreed that readers of the certificate, therefore, would understand that the statements about the fire performance of RB 55 PE applied equally to rivet and cassette {Day109/146}. The BBA maintained that the reason for this was because it was never made aware that there was a difference in fire performance between the two fixing types {Day109/146}.

### BRE

- 9.6 Kingspan's and Celotex's market deception was aided and abetted by the BRE. Lack of any rigour in how their test process was undertaken and supervised, their shoddy checking of test and classification reports, together with an excessive level of eagerness to please manufacturers resulted in the incorrect systems being described in BS 8414 test reports. Details of MgO and 8 mm Marley Eternit board, and full width cavity barriers were omitted from the test report for Celotex RS5000 BS 8414 testing conducted in May 2014 {Day96/76}. There was a 10 year delay between the BS 8414 test for Kingspan



K15 on 31 May 2005 and the BR 135 classification report issued for that test on 28 September 2015 for a product that no longer existed {Day97/130}.

- 9.7 Once the BRE was privatised in 1997, it became necessary for it to find avenues to generate its own funding. BS 8414 testing was one such avenue. In order to keep itself viable, the BRE had to keep manufacturers happy. Evidence provided to this Inquiry demonstrates how the BRE traded its impartiality imperatives for a steady income stream. This, in turn, had an impact on the materials installed on Grenfell Tower.
- 9.8 Based on BS 8414 testing the BRE had conducted, Kingspan and Celotex both untruthfully asserted that their K15 and RS5000 products, respectively, were suitable for use over 18 m. Not only did the BRE fail to address this fallacy, but the BRE assisted in its perpetuation by providing only partial information in test and classification reports: see {BRE00002497}, the test report for Celotex RS5000 dated 1 August 2014 which made no mention of 6 mm MgO board at thermocouples or 8 mm Marley Eternit panels or full width cavity barriers; see also {KIN00000134} classification report for Kingspan K15 dated 28 September 2015, which failed to note that the cellulose fibre cement board installed on the rig tested was not a cladding panel. Evidence provided to this Inquiry also indicates that the BRE advised test sponsors on configurations for their test rigs ({Day74/135}, {Day95/136} and {Day99/78}), and that it was not unusual for the BRE to provide such advice (*ibid*). The BRE also withheld information from test reports at the request of test sponsors, citing commercial reasons {Day99/70}.
- 9.9 Philip Clark, the BRE Burn Hall Manager at the time, was directly involved in the relevant Kingspan and Celotex tests and, by his own admission, worked closely with both of these parties on their BS 8414 tests {Day95/13} – {Day95/14}. Video footage depicts him providing advice to Celotex post-test in February 2014: {BRE00005659} and {INQ00014137}. He also failed to state on the relevant report that testing conducted by Kingspan on its K15 product in 2005 was indicative only {Day97/164}.
- 9.10 Stephen Howard, the BRE’s Business Unit Manager at the time, signed off on a draft of the Celotex test report dated 1 August 2014 {Day99/58}, and the Kingspan classification report dated 28 September 2014 {Day99/130}, without properly checking the details behind components listed in these reports: {Day97/135} and {Day99/59} – {Day99/63}. This is despite his admission that since the BS 8414 test is a system test, it is vitally important that component parts are completely identified and that nothing is missing {Day97/114}.
- 9.11 Tony Baker, Principal Consultant at the BRE at the relevant time, signed off on the final BS 8414 test report for RS5000 on 1 August 2014 {BRE00002497/2}. This was with an examination of the report that was cursory at best, and which omitted key details of the test rig build-up {Day100/148} – {Day100/152}. By Mr Baker’s own admission, he “*made a fundamental omission*” {Day100/152:12}.
- 9.12 ISO 17025 required all testing to be conducted with impartiality: {BSI00001726/12} and {Day98/157}. Under ISO 17025, the BRE was required to have its own policies and procedures in place to avoid any activities “*that would diminish confidence in its competence, impartiality, judgment or operational integrity*”: {BSI00001726/13} and {Day98/158}.

- 9.13 Yet the evidence outlined above illustrates instances where Mr Clark advised manufacturers on their test rigs, where Mr Clark and Mr Howard issued BRE documentation for failed tests, and where Mr Clark exercised his discretion, contrary to the termination criteria in BS 8414, not to terminate a test where flames exceeded rig height. All of these actions were quite contrary to the BRE's requirements of impartiality.
- 9.14 After the BRE was privatised in 1997 the BS 8414 tests were an important source of revenue {Day95/35}. The more testing the BRE conducted, the more revenue they made (*ibid*).
- 9.15 The consequence was publication of a raft of test reports, classification reports and desktop assessments extending over a period of years, whose accuracy can no longer be trusted.

## CONCLUSIONS

- 9.16 The prohibitive cost of full-scale testing has been discussed at length during the course of this Inquiry. Specifiers, architects, cladding specialists, fire engineers and contractors all relied on data from these tests provided by manufacturers to conduct any desktop or holistic fire assessments.
- 9.17 The upshot of this is that only the test houses and the manufacturers were aware of the true fire performance of materials tested. Furthermore, the BRE was advising government based on the outcomes of these tests.
- 9.18 Regulators took little care over the drafting of the regulations. Manufacturers were prepared to manipulate tests. Testing houses' overly close relationship with manufacturers allowed them to conceal the performance of materials in practical applications. The BBA and LABC issued imprecise and misleading certificates.
- 9.19 It is submitted that this again is important background against which the blameworthiness of a non-specialist D&B contractor such as Rydon should be assessed.

## 10 THE NATIONAL HOUSE BUILDING COUNCIL

- 10.1 Between 2014 and 2015, the National House Building Council ("NHBC") was one of the few bodies which remained reluctant to approve the use of Kingspan and Celotex insulation on high rise buildings: see, for example, {NHB00000749}, {NHB00000870}, {NHB00000905}, {NHB00001129}, {NHB00001144}, {NHB00001244}, {CEL00001030}, {CEL00003559}, {CEL00002193}, {CEL00003710} and {CEL00001122}. Indeed in March 2015, Celotex accepted that it could not supply its product for NHBC projects {Day73/161} – {Day73/162}.
- 10.2 Kingspan however sought to put pressure on NHBC to accept its product. On 3 August 2014, Kingspan stated:

*"Our significant test portfolio alongside many precedents in gaining approval, standards lobbying and extended involvement with fire consultants over many years has afforded Kingspan with a deep understanding of the regulatory framework in this area...For absolute clarity Kingspan Insulation are confident Kooltherm K15 can be appropriate for use in the application*

*and would be deeply concerned by the implication NHBC may choose to advise the industry to the contrary” {KIN00002186}*

- 10.3 The letter also referred to two further successful BS 8414-2 tests Kingspan had completed that year. Compare this with Tony Millichap’s evidence that the only successful BS 8414 tests Kingspan had in hand at the time of this letter to the NHBC were the 2005 test (conducted on a product not sold after 2006), and the July 2014 terracotta test on the trial K15 product {Day82/104} – {Day82/105}. Mr Millichap agrees that he did not mention to the NHBC that these tests were conducted on a trial product {Day82/108}. Mr Millichap also conceded that two tests had been conducted on Carea – one in December 2014 which had failed and another in March 2015 which had passed {Day82/137}. Whilst Counsel to the Inquiry put it to Mr Millichap that the Inquiry had not seen any evidence that both of these test results were provided to the NHBC, Mr Millichap stated he “*would be under the impression that both tests will have been provided. I believe at this time we were disclosing failed tests as well as passes*” {Day82/137}. However the lack of any contemporaneous documentary evidence indicating that the Carea test reports were provided to the NHBC raises the question as to whether Kingspan were selectively providing tests to the NHBC in order to provide a false sense of comfort to the NHBC that they were being open about their test results.
- 10.4 When NHBC continued to raise concerns and indicated that it would advise builders accordingly, on 13 February 2015 Kingspan through its external lawyers threatened the NHBC with an injunction, wrongly contending that test data vindicated the use of K15 above 18 m {NHB00000941}.
- 10.5 By July 2016, the NHBC’s stance had changed when it published its guidance document entitled “*Acceptability of common wall constructions containing combustible materials in high rise buildings*” (the “**2016 Guidance**”) {BRE00005796}. The 2016 Guidance set out material combinations which the NHBC would automatically accept. This included the combination of Kingspan K15 or Celotex RS5000 with an aluminium composite cladding panel that held a minimum rating of class B {BRE00005796/4}.
- 10.6 The 2016 Guidance was launched via an NHBC presentation entitled “*Facades to tall buildings*” {NHB00001296}, which included the range of tests and BR135 certifications the NHBC had relied upon {NHB00001296/86}. Of the 9 assessments listed, 7 incorporated Kingspan K15 (*ibid*). Correspondence between the NHBC and Kingspan in September 2016 confirms that Kingspan was the primary insulation upon which many of the tests and desktop assessments that the NHBC relied on were based {KIN00002307}.
- 10.7 A further NHBC internal document titled “*Approved Document B Volume 2 – Requirement B4(1) Aluminium Composite Material Assessments under BCA Guidance Note 18 Option 3*”, dated June 2016 {NHB00001259}, addresses data the NHBC had seen regarding Kingspan K15 and Celotex RS5000, including that “*Celotex RS5000 has been successfully tested with an Eternit (cementitious board) finish*” {NHB00001259/1}. The note also states:

*“It’s clear that several of tested external cladding finishes are of a mineral/resin compound which offer a combustibility classification of Class B when graded according to BS EN*

*13501:1...NHBC have seen justifications from fire engineers including Exova and BRE supporting the use of aluminium composite materials which achieve at least a Class B combustibility on a build-up which is, otherwise, similar to those tested...NHBC have been accepting these where...ACM panels hold a minimum combustibility of Class B (verified by BBA certificate or other third party means)” {NHB00001259/2}*

10.8 The note concludes by stating:

*“It is proposed that, on buildings with a floor over 18 metres from external ground level, where a ACM material [sic] is specified that meets the criteria outlined in Appendix A that NHBC accept the build-up as meeting Requirement B4(1). Technical Services and Major Projects staff need not ask for further justification under BCA Guidance Note 18” (ibid)*

10.9 This configuration for automatic acceptance then appeared in the 2016 Guidance.

## CONCLUSIONS

10.10 It is apparent that a knowledgeable and specialist organisation such as the NHBC endorsed the use of Celotex and K15 in combination with an ACM holding a Class B ranking. It is against this sort of industry statement that what can be fairly expected of a design and build contractor, such as Rydon, should be assessed.

## 11 STUDIO E

11.1 Following confirmation that it was the successful tenderer, Rydon retained Studio E as the lead designer for the refurbishment project. The Inquiry is referred to paras 10–26 of Rydon’s Written Opening Submissions for Phase 2 Module 1 {RYD00094360}, where Rydon set out the circumstances leading to the appointment by Rydon of Studio E as lead designer and the terms of that appointment.

11.2 As for Rydon’s decision to retain Studio E as the architect and lead designer on the project, Mr Hyett has confirmed that it was more common than not for an employer’s architect to be novated to the D&B contractor {Day64/6:21–25}. Moreover, there was no reason for Rydon to question the competence or suitability of Studio E (see Section 2.5 of Mr Hyett’s report {PHYR0000027/15})

11.3 Notwithstanding that Studio E was not at any time released from carrying out any of the services in the Schedule of Architectural Services at Annex A to Studio E’s Deed of Appointment {RYD00094228/9}, in various respects Studio E witnesses, notably Mr Sounes and Mr Crawford, sought to suggest that Studio E’s obligations were in some way less extensive than as set out in the Deed of Appointment. Rydon does not accept that there was any limitation or reduction in Studio E’s obligations. Rydon submits that the suggestion from the Studio E witnesses that, notwithstanding the Schedule of Services, design responsibility lay with Rydon and not Studio E, was an attempt by those witnesses to avoid Studio E’s responsibility for its own shortcomings in the performance of those services.

11.4 Whilst the Deed of Appointment was executed toward the end of the project, on 3 February 2016, the retrospective effect of the Deed did not fix Studio E with obligations for which it had not always understood it would be responsible. On 17 April 2014, just a few weeks after it had been told that its



tender had been successful, Rydon sent Mr Sounes a draft of the proposed Schedule of Services **{RYD00064706}**. Mr Sounes responded on 30 April 2014 with certain amendments to the proposed services **{RYD00014215}** including one relating to item 7 concerning obtaining building regulation approval, which he considered was “*too onerous*”. Otherwise, all the services relevant for present purposes (as set out at para 25 of Rydon’s Phase 2 Module 1 Written Opening Submissions) remained as proposed by Rydon. Implicit in Mr Sounes’ response was an acceptance that all the other unamended items in the Schedule of Services were not considered too onerous or otherwise unacceptable and that Studio E was agreeing to take on responsibility for them. There was therefore from the outset a common understanding between Rydon and Studio E as to what the scope of Studio E’s services was to be: Bruce Sounes **{Day7/95:22}** – **{Day7/98:5}**, Simon Lawrence **{Day22/145:3–11}** and Steve Blake **{Day29/103:10–16}**. In all relevant respects, it was this Schedule of Services as amended by Mr Sounes that was incorporated into the Deed of Appointment signed on 3 February 2016.

- 11.5 Although Mr Hyett is critical of the late conclusion of Studio E’s Deed of Appointment, nothing turns on that. The principles of the appointment, and a clearly defined scope of work for Studio E, existed from the beginning, just as Mr Hyett considers ought to have been the case **{Day64/9:12–18}**.
- 11.6 When Mr Sounes was questioned about the draft Schedule of Services **{Day7/104:24}** – **{Day7/118:1}** he accepted that item 8 (compliance with statutory requirements) included compliance with the BRs **{Day7/107:8–14}** and that item 12 (type of construction and selection of materials) implicitly included selecting materials that complied with the relevant statutory standards (e.g. the BRs) **{Day7/107:23}** – **{Day7/108:25}**.
- 11.7 When considering Studio E’s performance of the obligations contained in the Schedule of Services in relation to the cladding materials, it is necessary to consider the position at the time that Rydon engaged Studio E. Reynobond cladding panels (as an option) and Celotex FR5000 insulation had been specified in the NBS Specification that formed part of the Employer’s Requirements against which Rydon had successfully tendered. Mr Sounes accepted that Studio E’s responsibilities under RIBA Stages C and D (i.e., whilst still engaged by the TMO) included investigating statutory standards and that statutory standards included the BRs **{Day7/87:22}** – **{Day7/88:18}**. Further, there should have been a technical review at Stages E/F (again, before Studio E was appointed by Rydon) and which should have included checking building regulation compliance and fire strategy (Kuszell W/S **{SEA00014271}**, para 24.2; Sounes **{Day21/180:5}** – **{Day21/182:9}**). Mr Crawford said that he would have expected the cladding panels and insulation to have been checked for building regulation compliance before being included in the NBS specification **{Day9/140:9–13}** and that he assumed that the Employer’s Requirements and tender package were compliant **{Day9/170:14–16}**. Likewise, Mr Hyett confirmed that in a proprietary specification, such as that prepared by Studio E for the overcladding, which specifies the precise products to be used, it was the responsibility of Studio E to make sure that the products were compliant with the BRs **{Day64/72:21}** – **{Day64/73:16}** and **{Day64/76:14}** – **{Day64/77:4}**.

11.8 In fact, no check for compliance took place before the contract was put out to tender. Mr Sounes' evidence was that:

*"The approval of materials and finishes would be a reserved condition of Planning approval and I expected we would be making this application after our appointment had been novated to the contractor...We would not usually seek to verify compliance of all materials and products prior to submitting a Building Control Full Plans Application"* (Sounes W/S {SEA00014273}, para 292).

11.9 As for the technical review {SEA00013508}, this did not in fact take place until much later, October 2015, when construction of the external façade was 60% complete (Sounes {Day21/180:5} – {Day21/182:9}) and after most of the cladding had been installed (Osgood {Day30/131}).

11.10 Accordingly, at the time that Studio E came to be engaged by Rydon in April 2014, consideration of whether the specified cladding and insulation materials were building regulation compliant was something that ought already to have been addressed by Studio E, although in fact it had not. By items 8 and 12 of the draft Schedule of Services (accepted without amendment) Studio E then took on an obligation to Rydon to consider building regulation compliance. Mr Hyett confirmed the dual obligation that Studio E was under – to complete the work it had agreed to undertake for KCTMO, and a parallel obligation owed to Rydon by reason of its engagement by Rydon. Mr Hyett emphasised that if its work for KCTMO had not been completed, then that ought to have been made abundantly clear by Studio E {Day64/33:23} – {Day64/35:15}.

11.11 However, Mr Sounes' evidence was that upon Studio E's engagement by Rydon, responsibility for ensuring that the cladding complied with the BRs lay with Rydon and Rydon's specialist cladding subcontractor, Harley, along with RBKC BC, as illustrated by the following extracts from Mr Sounes' evidence:

(1) When asked why Studio E had not requested any further analysis from Exova regarding the fire safety implications of the cladding, Mr Sounes said {Day12/158:12–20}:

*"A. Well, at this point, this is the tender. The project is let to a design and build contractor and the design and build contractor assumes responsibility for the design and the compliance of the design."*

*Q. I see. So you thought that the appointed design and build contractor would have responsibility for picking this up where it left off; is that what you're saying?*

*A. For confirming compliance or any - - resolving any issues, fire related issues, yes."*

(2) When asked about Studio E's responsibility for considering the suitability in principle from the fire safety point of view of the various different cladding panels that were under consideration by KCTMO and the planning authority, Mr Sounes said {Day21/17:25} – {Day21/18:12}:

*"A. Our position, as outlined in our opening statement, is the detailed design had been taken over by the main contractor and, we understood, delegated to their specialist subcontractor, and this had been our expectation from the outset."*

- Q. So does that mean that you didn't think it was any part of Studio E's role from that point forward to look at the fire performance of the panels that were being considered?*
- A. No. I think it was certainly, were we aware of anything, we should have raised it. But as to actually responsibility for the selection and implementation, no, that did not sit with us."*
- (3) In the light of his evidence that Studio E would not usually seek to verify building regulation compliance of all materials and products prior to submitting a Building Control Full Plans Application, Mr Sounes was asked whether there was point later on in the process when Studio E would have checked for building regulation compliance. He replied **{Day20/71:9-14}**:
- "A. Not on this project, I can't - - I don't think we would. It's a design and build. I'm not sure that the full effect of design and build is understood by the Inquiry. It does sideline the original architect's role from what it was pre-novation. We are no longer in any sense policing what other people are doing."*
- (4) Mr Sounes agreed with Mr Crawford that Studio E's review of drawings prepared by others was not to double check that they were technically correct or necessarily compliant with the building regulations above and beyond their consistency with "architectural intent", i.e., aesthetics **{Day7/123:2} – {Day7/124:3}**:
- "Q. Is it, as you understand it, the role of an architect to check that the drawings are compliant with the building regulations?*
- A. No, I don't think it is.*
- Q. And you didn't believe it was your role on the Grenfell project?*
- A. No.*
- Q. Looking at what he [Mr Crawford] is saying there, he has used the words "above and beyond their consistency with the architectural intent". Again, the way he has used "architectural intent", do you agree with that, that all you're checking for is architectural intent?*
- A. That is - - again, under a design and build specialist contract, that is what I would expect the architect to be looking at, yes.*
- Q. So am I right in that this was an assumption you made from the fact that there was a design and build design contractor, that your role would be limited to checking for architectural intent, which is effectively kind of aesthetics?*
- A. I think you would comment on what you see, and that is usually comparing it to the original architectural intent, and seeking to ensure that the contractor is achieving it.*
- Q. By architectural intent, do you mean anything other than aesthetics?*
- A. In this context, I don't think it did, no."*

- (5) Mr Sounes did not accept the suggestion that during the Rydon phase of the project it was any part of Studio E's role to be checking for building regulation compliance {Day7/124:4} – {Day7/125:12}.

11.12 Rydon entirely rejects this evidence regarding Studio E's obligations in relation to compliance of the cladding materials with the building regulations. Whether the Reynobond cladding panels and Celotex insulation specified in the NBS specification were in principle capable of meeting the building regulations is something that ought to have been considered by Studio E before the contract was put out to tender and Rydon was entitled to assume that that had been done (Hyett {Day64/77:17–23}). Having failed to do that, pursuant to items 8 and 12 of the Schedule of Services, Studio E had an ongoing obligation to Rydon to make those checks. Those checks were not a matter of either detailed design or of policing work being done by others, but of Studio E checking that the cladding materials it had itself specified in the NBS specification were building regulation compliant. The engagement of Harley as a specialist subcontractor to complete the detailed design, did not in any way detract from this obligation. As Mr Hyett confirmed, items 8 and 27 of the Schedule of Services go beyond merely checking for architectural intent and extend to checking for compliance with relevant statutory requirement including scheme development standards, and included checking the work of subcontractors {Day64/19:13} – {Day64/20:24}.

11.13 As noted above, whether or not the proposed cladding materials were building regulation compliant was something that should have been considered by Studio E before those materials were included in the NBS specification that went out to tender. The anticipated appointment of a D&B contractor and of that D&B contractor in turn appointing a specialist cladding subcontractor in no way diminished Studio E's obligations at that stage. Likewise, when Studio E was sent the draft Schedule of Services, the fact that Rydon was about to be appointed D&B contractor, and anticipated that Harley would be appointed as specialist subcontractor, did nothing to diminish the obligations to which Studio E was agreeing pursuant to the amended Schedule of Services. The need for Studio E to check that the cladding materials were building regulation compliant was particularly acute given that:

- (1) Studio E had, by specifying the cladding materials in the NBS specification, taken on responsibility for the design of the cladding so far as choice of materials was concerned; and
- (2) Only Studio E knew that, notwithstanding the legitimate expectation of the likes of Rydon and Harley that only compliant materials would have been included in the NBS specification, no such check for compliance had in fact yet been made.

11.14 Accordingly, whilst it is of course correct that, by its D&B contract with KCTMO, Rydon assumed a contractual responsibility for design to KCTMO, through its appointment of Studio E, Rydon was entitled to and did place upon Studio E an obligation to ensure that the cladding materials were building regulation compliant.

11.15 The notion that Studio E's design obligations were confined to matters of "architectural intent" is, of course, contrary to the amended Schedule of Services agreed by Mr Sounes. Moreover, Mr Sounes



accepted that he never told Rydon that Studio E considered its obligations to Rydon to be confined to matters of “architectural intent” {Day7/120:15–17} and Mr Lawrence of Rydon confirmed that he did not understand that to be so {Day22/176:11–14}.

- 11.16 Mr Sounes said that Studio E did not expect to be designing the cladding because something as discrete and sophisticated as that would usually be let to a specialist subcontractor and that all Studio E expected to provide was the design intent, sufficient for it to be priced {Day7/19:3–16}. However, the fact of the matter is that by specifying the cladding materials in the NBS specification, Studio E was responsible for the design of the cladding at an initial and fundamental stage.
- 11.17 In truth, it is impossible for Studio E to escape its responsibility for specifying non-compliant cladding materials, albeit that the role of the manufacturers Arconic and Celotex in seeking to dupe those in the industry like Studio E must also be taken into account Mr Hyett was clear that he did not consider that Rydon’s engagement as D&B contractor or Harley’s engagement as specialist cladding subcontractor created any obligation on either Rydon or Harley to check the past work carried out by the Studio E or that the engagements of Rydon or Harley absolved Studio E from responsibility for its past work {Day64/81:12} – {Day64/82:15}.
- 11.18 Another, more generalised attempt to shift responsibility from Studio E to Rydon was Mr Crawford’s (W/S {SEA00014275}, para 37 and {Day9/97:25} – {Day9/106:13}) and Mr Sounes’s {Day20/186:17–187:25} evidence that Mr Lawrence said that Rydon tended to make less use of architects, with Rydon maintaining a greater degree of control over the design process and with Studio E’s role being reduced to one of responding to specific queries. As with the point relating to Studio E’s role being confined to checking for “architectural intent”, this evidence is not credible:
- (1) First, Mr Lawrence denies any conversation along these lines with either Mr Sounes or Mr Crawford {Day22/155:21} – {Day22/159:24} (Note that during the oral evidence of Mr Hyett, Counsel for the Inquiry erroneously stated that the evidence of Mr Lawrence had been that Rydon tended not to use architects as much {Day64/13:22–25}. That was not Mr Lawrence’s evidence.)
  - (2) Second, such a suggestion would be inconsistent with the Schedule of Services issued by Mr Lawrence and considered and returned by Mr Sounes.
  - (3) Third, as a matter of fact, Rydon itself lacked the in-house design capability to be able to relieve Studio E of its design obligations as set out in the Schedule of Services (Lawrence {Day22/159:20–24}), which makes it inherently unlikely that Mr Lawrence would have said such a thing.
  - (4) Fourth, if Rydon was expecting a reduced service from Studio E, it is to be expected that it would also have sought a reduction in the fees being paid to Studio E. That never occurred.
  - (5) Fifth, if Studio E thought that it was entitled to render a reduced service from that set out in the Schedule of Services, it is to be expected that Studio E would have wanted that recorded in writing in order to protect its position. That also never occurred.

(6) In short, the only “*clear record of what was expected of Studio E by Rydon*” (Hyett {Day64/13:22} – {Day64/14:16}) was the amended Schedule of Services returned to Rydon by Mr Sounes. There is no contemporaneous record of any kind evidencing any reduction in the scope of those services.

11.19 It is also to be noted that the suggestion that Studio E’s role was limited to checking for compliance with architectural intent, and not for compliance with the BRs, is inconsistent with the fact that Studio E did in fact carry out a technical review, albeit that this was not until October 2015. Also, Mr Sounes knew in April 2014 at the time that the draft Schedule of Services was sent {RYD00064706} that Studio E would be required to enter into a collateral warranty with KCTMO and Mr Sounes made express reference to the collateral warranty when he returned the draft Schedule of Services with his amendments {RYD00014215}. Such collateral warranties typically contain a promise to the employer that the architect has performed the services set out in its appointment with the contractor. In due course Studio E did provide such a collateral warranty to KCTMO {TMO00835763}. If Studio E truly thought that it was entitled to render lesser services than those set out in the amended Schedule of Services, then that would have had repercussions for the proposed collateral warranty with KCTMO. However, no such concerns were raised at the time and Studio E entered into a collateral warranty with KCTMO on 26 April 2016 in the usual terms without raising any objections. It was Mr Hyett’s view that if Studio E did actually consider that its duty was limited to commenting on architectural intent, it was wrong about that {Day64/17:10–14}.

11.20 Finally on this issue, if the Inquiry were to accept that, upon the appointment of Rydon as D&B contractor and notwithstanding the terms of the amended Schedule of Services, Studio E was entitled to consider itself relieved of responsibility for checking building regulation compliance, its failure to communicate that fact to Rydon coupled with its failure to communicate to Rydon that the cladding materials specified in the NBS specification had not already been checked for building regulation compliance (as they ought to have been) led Rydon into a trap. Rydon was entitled to and did proceed on the basis both that the specified cladding materials had already been checked for building regulation compliance and that Studio E would continue to take responsibility for checking building regulation compliance, whereas in fact, and unbeknown to Rydon, neither was the case. Rydon cannot fairly be criticised for itself failing to check for building regulation compliance, when it did not know it needed to, because it understood, reasonably, that that was being done by Studio E.

## **FULL PLANS APPLICATION AND THE USE OF OTHER TOOLS**

11.21 In section 5 of his report entitled “*Failures of Statutory Process*” {PHYR0000030} Mr Hyett is critical of Studio E, RBKC BC and Rydon regarding the Full Plans Application (“FPA”) and summarises his criticisms at paras 5.1.26 and 5.1.27.

11.22 Rydon addressed the criticisms of it made in Section 5 of My Hyett’s report at paras 67–79 of its Phase 2 Module 1 Written Opening Submissions {RYD00094360}.

- 11.23 Mr Hyett responded to those Submissions at paras 5.8–5.13.7 of his Supplemental Report {PHYS00000005}. While accepting a number of the points made by Rydon and noting that he does not understand others, overall Mr Hyett maintained his criticisms of Rydon.
- 11.24 Rydon does not accept Mr Hyett’s continued criticism, on two grounds. The first is that a major criticism Mr Hyett levels at Studio E and Rydon is that the FPA was submitted too late, after work had already begun and without any drawings. That is not an accurate representation of the facts pertaining at the time of the FPA. The second ground is that Mr Hyett’s opinion as regards what is to be expected of a reasonable, competent D&B contractor is unrealistic and unjustified.
- 11.25 Dealing first with the timing of the FPA, Mr Hyett is scathing in his views, as appears from para 5.4.5 of his report {PHYR0000030}:

*“5.4.5 As evidenced in the exhibits below Progress Report No. 1 {RYD00012259}, which records a 'contract commencement' date of 2 June 2014, reported on progress up to 11 July 2014. That report both records in note form, and shows in the photographs incorporated within it (also exhibited below), substantial demolition works and the beginning of alteration works to the lower part of the building: a fully occupied residential scheme with some 120 flats in occupation and some 400 residents to which the Regulatory (Fire Safety) Order 2005 applied. In my opinion such work should not have been commenced ahead of submission of a properly prepared Full Plans application. I am extremely critical of both Studio E and of Rydon for allowing this state of affairs to arise.*

[...]

*5.4.12 [...] In my opinion, no responsible architect would condone the start of construction work, however preliminary its form, in circumstances where he/she was not absolutely confident that an ongoing dialogue had fully informed Building Control of the scope and character of the intended work and that the scope and character had in principle been understood and accepted by Building Control.*

*5.4.13 In that context I think that Studio E and Rydon should be severely criticised for not ensuring that a Full Plans application was submitted before any demolition work within the curtilage of the building began.”*

- 11.26 However, this criticism is unjustified. The true position was as follows:
- (1) RBKC BC was aware from early June 2014 that the demolition works were taking place: {SEA00004471}, {RYD00004653}, {RYD00004652} and {RYD00010573}.
  - (2) RBKC BC had confirmed that those demolition works were outside the scope of the BRs: {SEA00004471} and {SEA00011348}.

- (3) RBKC BC inspected on 29 August 2014, were aware of the works that were taking place, were aware of the fact that up-to-date details of the works had yet to be received and noted that there was nothing to check {RBK00013223/8}.
- (4) RBKC BC inspected again on 29 September 2014, acknowledged having received up-to-date details (i.e., the drawings submitted on 24 September 2014) and noted that there was still nothing to check {RBK00013223/6}.
- (5) It was not until on or around 27 November 2014, a further two months later, that the description in RBKC BC's site visit records changes from "*Pre-Start Visit*" to "*Commencement*" {RBK00013223/4}.

- 11.27 That demolition work commenced when it did, had no implications in terms of compliance with the BRs. Mr Hyett's criticism is not justified. RBKC BC's site visits and records of those visits show that it was aware of what work was taking place prior to receipt of the drawings in support of the FPA on 24 September 2014. RBKC BC was in dialogue with Studio E and was not at all concerned. The Inquiry is asked to note that Rydon submitted a series of questions to be asked of Mr Hyett concerning his continued criticism of Rydon in relation to the timing of the FPA and which referred to the matters identified above. Whilst no criticism is made of Counsel to the Inquiry, those questions were not put to Mr Hyett.
- 11.28 As regards the provision of information on a "*piecemeal*" basis, not only does Mr Hyett himself acknowledge that submission of information on a staged basis is not unusual (paras 5.1.17 and 5.1.14 of {PHYR00000005}), Ms Menzies explained that, for all but the most simple of buildings, Building Control would not expect all the detail to be there at the time the FPA was first submitted {Day60/17:20} – {Day60/18:14}. Ms Menzies also explained why the term "full plans" was, in practice, something of a misnomer {Day60/22:2–23}.
- 11.29 As regards what could reasonably be expected of Rydon in relation to the FPA, at paras 5.10.1–5.11.1 of his Supplemental Report {PHYS000000005} Mr Hyett accepts that: (1) Rydon was entitled to rely upon Studio E to manage the FPA process including providing all relevant drawings to RBKC BC; (2) Rydon's function would be to facilitate the process and ensure that it was taking place to the satisfaction of both Studio E and RBKC BC; and (3) Rydon could reasonably assume that the FPA process and the content of the submission(s) were adequate if RBKC BC did not object to the process. Despite this, Mr Hyett says at para 5.11.2 of his Supplemental Report {PHYS000000005} that a competent and responsible D&B contractor should have been alert to what he describes as "*deficiencies*" in the FPA process by its own review and monitoring of the process, rather than relying on Building Control to alert it to any such deficiencies, and that such a passive role is inconsistent with the responsibilities of a D&B contractor.
- 11.30 Mr Hyett's position is inconsistent. It is not reasonable to expect a D&B contractor without its own specific in-house design expertise or experience in making a FPA, and which has engaged an architect to deal with the FPA, to be checking the detail of what it is that the architect is submitting to Building



Control. This is especially the case when the very nature of the process is one of having to satisfy Building Control, such that if what has been submitted is in any way unsatisfactory, Building Control is required to say so. In effect, what Mr Hyett is suggesting is that a D&B contractor without the requisite knowledge, experience or expertise, and when the process is apparently progressing without concern, should intervene in the process. That is neither realistic nor reasonable. What Mr Hyett describes as “*deficiencies*” were not regarded as such by either Studio E or RBKC BC or, to the extent that they may have been, RBKC BC did not make any concerns known. Rydon’s obligation was to ensure that the process was progressing satisfactorily, which it apparently was. For example, whilst Mr Hoban in his evidence said that the initial absence of drawings accompanying the FPA was a concern, he also said that it was not unusual {Day45/149:2} – {Day45/150:11}, and his explanation for not rejecting the application was because he wished to work with the contractor and the architect {Day45/160:7} – {Day45/161:12}. In those circumstances, if Building Control appears to be content with the FPA process, there is nothing to warrant intervention from a contractor in Rydon’s position.

11.31 Accordingly, Rydon considers that Mr Hyett’s criticism of its role in the FPA is unfair and unjustified. It is to be noted that Mr Hyett’s expertise is as an architect, not a D&B contractor. Indeed, in his Letter of Instruction {PHYR0000032/2}, Mr Hyett was asked to report only on the role of the architect, not anyone else. Mr Hyett’s Letter of Instruction states at {PHYR0000032/4}, under the heading “*Your General Obligations*”, that “*You should confine your opinions to matters which are relevant to the issues upon which your assistance is sought and your opinions should be confined to matters within your expertise.*”

11.32 Turning to use of a building control “tracker”, Mr Hyett says at para 5.12.3 of his Supplemental Report {PHYS00000005} that, in the absence of a tracker being set up by RBKC BC, the obligation to produce one falls equally on the architect and the D&B contractor. That cannot be correct. Clearly, as between the D&B contractor and the architect, it is for the architect, as the party responsible for coordinating and obtaining building regulation approval and the party responsible for managing the submissions to Building Control, to decide whether the use of a tracker is appropriate and, if so, to set one up or request the D&B contractor to do so. Mr Hyett accepts that the lack of a formal tracker does not necessarily mean that the process is not being monitored in one form or another (para 5.12.6 Supplemental Report {PHYS00000005}). It is therefore for the architect to judge whether or not a tracker is required. Mr Sounes confirmed that it was for the party managing the application, i.e., the Studio E, to decide whether or not to use a tracker, {Day21/153:22} – {Day21/154:6}. Mr Sounes did not suggest that this decision was one for Rydon. Mr Crawford confirmed that Studio E has a “*consult out folder*” in which a record was kept of what information had been sent to RBKC BC {Day11/137:8–11}. Mr Lawrence confirmed that he would expect Studio E, not Rydon, to keep a record of what drawings were sent by Studio E to Building Control and that he had never seen a Rydon/ Building Control tracker {Day25/187:24} – {Day25/188:15}. Mr Lawrence’s evidence regarding a Building Control Tracker is to

be contrasted with his evidence regarding Planning, RFI and Project Change trackers, in relation to all of which Rydon did have an involvement {Day23/28:16} – {Day23/37:15}.

- 11.33 Not being an expert D&B contractor, Mr Hyett is not in a position to say, as he does, that in the absence of Building Control or Studio E considering that a tracker was necessary, a reasonable and competent D&B contractor would have stepped in and “insisted” that one be set up (para 5.12.9 Supplemental Report {PHYS00000005}).
- 11.34 Finally on the issue of a tracker, there appears to be some confusion as to whether its function is to keep track of the drawings issued to Building Control (see e.g., {Day25/187:24} – {Day25/188:1} and {Day21/153:22–23}), or to track approval of the various requirements of the BRs (see e.g., {PHYR00000030} and {Day21/15:10–21}).
- 11.35 As regards a Design Responsibility Matrix, Rydon repeats para 79 of its Written Opening Submission for Phase 2 Module 1. In his response to those Submissions, Mr Hyett says in his Supplemental Report:
- “5.13.6 I do not understand why, in the third sentence of paragraph 79 Rydon suggest that 'Had such a document been prepared, Studio E would have been assigned responsibility for design and building regulation approvals with input from Harley and others'. This is to entirely miss the point of a Design Responsibility Matrix.*
- 5.13.7 I fail to understand the point being made, or indeed the logic, of Rydon's final sentence of Paragraph 79.”*
- 11.36 As regards the first of Mr Hyett’s comments above, Rydon does not understand what point it has “entirely missed”. An example of a Design Responsibility Matrix is provided by Mr Hyett at Figure 5.4 of his report {PHYR00000030/12}. Items 11.13 in Figure 5.4 show that Studio E would have been allocated primary responsibility for the performance specification, interface details and design intent of the cladding, with support from others, including Harley.
- 11.37 The final sentence of para 79 of the Submissions makes the point that even if there had been a matrix, it would not have identified any element of design responsibility relating to compliance with the BRs that rested with Rydon. That is self-evidently correct, given the obligations that Studio agreed to take on in the amended Schedule of Services.
- 11.38 In addition to rejecting Mr Hyett’s criticism of Rydon in relation to the FPA, a tracker and a design responsibility matrix, none of those matters was causative of the outbreak or spread of the fire on the night of 14 June 2017.
- 11.39 As regards Studio E’s involvement in the Crown, that is dealt with in Section 4 and its involvement with the windows and window infill panels is dealt with in Section 16 below.

## CONCLUSIONS

- 11.40 Rydon does not and has never professed to have the skills and experience of an architect. Rydon’s engagement of Studio E followed the usual industry practice carried out by D&B contractors on all types of projects. The functions given to Studio E and the duties taken on by it under the terms of its engagement were clear and unexceptional. Rydon was entitled to rely on Studio E to carry out its

engagement fully and to a proper standard. Studio E's attempt to dilute its obligations is an after the event attempt to evade its responsibilities. Rydon's conduct cannot be judged by reference to the standards to be expected of an architectural practice.

## 12 HARLEY

- 12.1 Harley was a specialist cladding designer and subcontractor of long standing, with Harley Curtain Wall Ltd having been established in August 1996 and Harley Façades Ltd in May 2000 (W/S of Ray Bailey {HAR00010184/2}, paras 6 and 7). Harley had been involved in two projects involving Rydon companies prior to the Grenfell Tower refurbishment. Both involved the use of PE ACM rainscreen cladding.
- 12.2 As set out at Section 4 above, Harley's involvement in Grenfell Tower began in September 2013, pre-dating that of Rydon, and concerned its push for Reynobond ACM to be selected as the cladding panels.
- 12.3 On 29 January 2014, Harley provided a quote to Rydon for *"the design, supply and fix of a complete envelope package, all in accordance with the Clients Requirement Documents"*: {HAR00001119} and Ray Bailey W/S {HAR00010184}, para 30. In accordance with the NBS Specification, Harley provided prices not only for Proteus HR zinc honeycomb panels, but also for the alternatives named in the specification, including Reynobond Duragloss 5000. Harley's quotation formed the basis for that part of Rydon's tender relating to the cladding system.
- 12.4 After Rydon's appointment there then followed the value engineering exercise in respect of the cladding panels involving Harley, again as set out in Section 4 above.
- 12.5 The contract between Rydon and Harley Curtain Wall Ltd was on the basis of a Letter of Intent {HAR00010057} sent under cover of an email dated 25 July 2014, with associated documents. It refers to Harley's quote and Rydon's own Terms and Conditions and incorporated the JCT DOM/2 Standard Terms and Conditions. The absence of a formalised contract was not unusual nor did it cause Harley any difficulties in relation to understanding the extent of its obligations: Ray Bailey {Day32/57:7–21}. The subcontract was subsequently novated to Harley Facades Ltd on 10 September 2015: {HAR00014130} and Ray Bailey W/S {HAR00010184}, para 18.
- 12.6 The key provisions of the contract documents relevant for present purposes are set out at paras 31–34 of Rydon's Phase 2 Module 1 Written Opening Submissions {RYD00094360}. In particular, pursuant to cl 2.1.1 of DOM/2 Harley was under a contractual obligation to ensure compliance with the BRs and Mr Ray Bailey accepted that this was so {Day32/60:12} – {Day32/61:3}. Ray Bailey said that he expected his team at Harley to be sufficiently familiar with the requirements of the BRs and AD B to be able to design a safe cladding system {Day32/61:5–11} and Daniel Anketell-Jones confirmed that in his experience it was normal practice for the façade contractor to consider compliance with the BRs: Daniel Anketell-Jones W/S {HAR00010149}, para 70.
- 12.7 Mr Lawrence explained that Rydon relied upon its contracts with others (e.g. Studio E and Harley) to ensure that it met its design responsibilities to the TMO {Day22/107:9} – {Day22/108:2} and that the

intention of Rydon's contract with Harley was that Harley's obligations to Rydon should be "back-to-back" with Rydon's obligations to the TMO {Day24/145:4} – {Day24/146:3}. Rydon, in common with what Mr Lawrence thought was 90% of the industry, did not have its own in-house design team {Day22/111:13} – {Day22/112:12}. As the main contractor, Rydon's role was only to provide construction management {Day22/108:10–19}. Operating a design and build business in this way, by relying on third parties, was standard throughout the industry {Day23/6:13–18}.

- 12.8 In its company W/S, Rydon refers to the fact that it was reliant on Harley (and Studio E) to advise on the appropriate design: {RYD00094236/153}, para 390. Mr Lawrence confirmed that that was so {Day22/130:15–24} and said that Rydon relied upon Harley to "*know the rules and regulations relating to their field of expertise*" {Day23/100:22} – {Day23/101:8}. This was confirmed by Ray Bailey who agreed that Rydon was reliant on Harley's familiarity and expertise when it came to the BRs {Day32/61:18} – {Day32/62:8}.
- 12.9 This reliance by Rydon on Harley was entirely appropriate and reasonable given the terms of the contract between Rydon and Harley and the manner in which the industry operated. Furthermore, the existence and scope of Harley's contractual obligations to Rydon in relation to BRs compliance were in no way affected or diminished by the fact that others also responsible for the design of the cladding system or responsible for considering that design (such as Studio E and RBKC BC) were also required to consider the question of compliance. It is also to be noted that, like Studio E, Harley provided a collateral warranty to KCTMO dated 25 April 2016 {TMO10000033}, whereby it warranted directly to KCTMO that it had exercised reasonable skill and care (Harley being aware of, and accepting, the need for such collateral warranty as far back as June 2014 {RYD00010994}). Clause 3 of Harley's collateral warranty, headed "*Duty of care*", is set out at para 36 of Rydon's Phase 2 Module 1 Written Opening Submissions {RYD00094360}.
- 12.10 Whilst Harley had an overarching obligation to ensure that the cladding system the subject of its contract with Rydon was compliant with the BRs, the evidence is that, so far as the cladding panels and insulation were concerned, Harley assumed that, because the materials had been specified by Studio E in the NBS specification, they were compliant: Ray Bailey W/S {HAR00010184}, para 31 and {Day32/51:19} – {Day32/52:13}. Mr Anketell-Jones said that he did not expect anyone within Harley to have gone through the process of checking the NBS specification and Studio E's drawings for compliance {Day36/62:2–15} and Mr Lamb confirmed that he had assumed that the Studio E designs and drawings provided to Harley were compliant {Day37/97:17} – {Day37/98:24}. Details of Harley's lack of awareness of the existence of Reynobond with an FR core and its assessment of the BBA certificate are set out at Section 4 above. Details of Harley's relationship and dealings with Celotex, the switch from FR5000 to RS5000, are set out at Section 6 above.
- 12.11 As regards the detailed design drawings produced by Harley, this work was subcontracted by Harley to Kevin Lamb. Mr Lamb explained that whilst the drawings he prepared were issued to both Rydon and Studio E, except on very rare occasions when Rydon might make a comment, it was for Studio E to



check everything, including design intent and compliance. If Studio E approved the drawing, there was no need to go through a separate checking process with Rydon {Day37/187:3} – {Day37/189:3}. Mr Anketell-Jones said that it was normal for the architect (as opposed to the main contractor) to be checking Harley’s drawings {Day36/35}. Mr Lawrence confirmed that it was for Studio E to review Harley’s drawings, not just for conformity with design intent (as Studio E has suggested – see Section 11 above), but for compliance with the BRs as well ({Day22/175:9} – {Day22/177:4} and {Day22/184:16–20}) and that he expected Studio E to have the design expertise to do this {Day22/179:5–10}. Mr Lawrence said it was Studio E, not Rydon, that was approving Harley’s drawings for construction {Day22/185:21–23}.

- 12.12 Mr Hyett in his report identifies various deficiencies in Harley’s work on the detailed design of the cladding system, describing much of the detailed design carried out by Harley as having been “*fundamentally flawed*”: {PHYR0000028/103}, para 3.10.3. In relation to cavity barriers Mr Hyett says Harley “*appear to have completely failed to understand the complexity of the geometries involved and the implications in compromising the integrity of the horizontal cavity barriers, for example around the columns*” {PHYR0000028/50}, para 3.7.32, and, as regards cavity barriers, describes the documentation produced by Harley, accepted by Studio E and passed by RBKC BC as being “*seriously flawed in terms of its failure to comply with the guidance of ADB2*”: {PHYR0000029/128}, para 4.4.129.
- 12.13 Mr Hyett is also critical of Harley for not identifying the inappropriate use of both the Reynobond ACM cladding panels and the Celotex RS5000 insulation: {PHYR0000028/93}, para 4.4.1 and {PHYR0000028/141}, para 4.4.150.
- 12.14 Mr Sakula considered that, when subcontracting the preparation of the detailed design drawings, a reasonably competent cladding contractor should have referred their subcontractor to guidance documents and standards applicable to the cladding contractor’s contract and should have had a supervisory system to ensure that, among other matters, the subcontractor’s work product was Building Regulation compliant {Day125/72:22} – {Day125/73:17}.
- 12.15 In his evidence Mr Sakula identified a number of matters relating to the knowledge and conduct that were to be expected of a reasonably competent cladding contractor, such as: having a general awareness of the inherent danger from fire in using ACM cladding {Day125/98}; making other parties involved aware of those dangers {Day125/199-201}; having an awareness of the UAE fires in 2012/13 involving PE ACM panels and of the fact that such panels caused propagation of fires {Day125/117} – {Day125/118}; having a system for disseminating updates in technical design to those individuals responsible for designing cladding systems {Day125/122}; having an obligation to check that design work on the cladding system already carried out by the architect {Day125/147} – {Day125/150}; and considering a BBA certificate in detail and drawing any limitation in the certificate to the attention of the architect and main contractor {Day125/168} – {Day125/169}. Harley fell short of what Rydon was entitled to expect of a reasonably competent cladding contractor in all these respects.

## CONCLUSIONS

- 12.16 Rydon refers to Sections 3 to 6 above. Rydon did not have and cannot be expected to have had its own in-house design team. Notwithstanding its own contractual obligations owed to its employer, KCTMO, the subcontracting of design and installation work to a cladding subcontractor such as Harley is common industry practice. In such circumstances, the D&B contractor has, in effect, a management role with regard to the work subcontracted. Again, there is nothing out of the ordinary with this arrangement.. Rydon's conduct cannot be assessed by reference to the standards to be expected of a specialist cladding subcontractor such as Harley.

## 13 CEP

- 13.1 CEP Architectural Facades was the fabricator and supplier of cladding panels, curtain wall and window frames for Grenfell Tower. Initial purchase orders from Harley Curtain Wall to CEP for the RB 55 PE panels were made between March 2015 and July 2015. In September 2015, Harley Curtain Wall went into administration. Rydon subsequently contracted with CEP directly to fabricate and supply the remaining panels, with orders being made between September and December 2015. CEP then fulfilled some additional orders for Harley Facades in January and February 2016.

## RYDON'S RELIANCE

- 13.2 Rydon had undertaken two previous projects involving the provision of ACM cladding for high rise residential tower blocks before the Grenfell Tower project. Both projects involved Harley as the specialist cladding contractor and CEP as the fabricator and supplier. Rydon knew CEP to be Harley's preferred supply chain partner for cladding panels: {Day24/53} and {Day28/45}. CEP had also worked with Harley on 10 different projects prior to Grenfell Tower: {Day41/20} – {Day41/21} and {CEP000003232}, para 4. Geof Blades, on behalf of CEP, confirmed that CEP had only ever supplied ACM panels with a PE core (as opposed to FR core) to Harley {Day41/24}.

## INTRODUCTION OF ACM AND REYNOBOND TO THE GRENFELL TOWER PROJECT

- 13.3 Mr Blades accepted he was responsible for introducing Arconic to Studio E and that CEP was responsible for "*putting forward*" the Reynobond product for the Grenfell Tower project: {Day41/107} – {Day41/108} and {Day41/176} – {Day41/180}. At the time that Studio E first met with CEP, Arconic considered CEP one of its approved fabricators ({CEP00049719} and {MET00019917/10}), which Mr Blades also confirmed in oral evidence {Day41/127} – {Day41/128}. Both Mr Blades and Deborah French (Arconic) agreed that they had an established professional relationship ({Day41/31} – {Day41/32} and {Day88/48}) dating back to 2006: {Day41/29} – {Day41/31}.

## ASSURANCES GIVEN BY ARCONIC TO CEP ON THE USE OF RB 55 PE

- 13.4 As seen in Section 3 above, in May 2013, Ms French emailed CEP, including Mr Blades, highlighting the ACM fire in the UAE, and assured CEP that Arconic would ensure the right core (FR or PE) would be chosen for a particular project {CEP00049719}.
- 13.5 Mr Blades explained that, at the time of this email, he believed Arconic took into account the appropriateness of the core for each particular project {Day41/130}. Mr Blades confirmed it was CEP's belief that Arconic worked closely with CEP to know the details of each project, and this included Grenfell Tower {Day41/132} – {Day41/133}.
- 13.6 Notwithstanding the gravity of the contents of Ms French's email, Mr Blades contended that the email did not cause much concern within CEP and that he "*possibly*" relied on designers to ensure that products that were chosen for use on tall buildings were compliant {Day41/124} – {Day41/125}. CEP, in the position it held, must have been concerned that they were fabricating materials recently implicated in serious fires. CEP must, in all conscience, have considered that they could be responsible for supplying dangerous material. The use of the word "*possibly*" when giving evidence such as this displays a lack of confidence in the veracity of what he is saying. Arconic had a reason for sending the emails.
- 13.7 Yet no one at CEP, as a result of this email, raised the potential dangers of using PE ACM with anybody on the Grenfell Tower project {Day41/133} – {Day41/134}.
- 13.8 Ray Bailey, on behalf of Harley, was shocked that this information was not shared with Harley {Day32/190} – {Day32/191}. Mr Blades has since conceded that, in hindsight, CEP "*possibly*" should have alerted those on the Grenfell Tower project team {Day41/135}. It is plain that he ought to have done so.

## FABRICATION OF RB 55 PE INTO CASSETTES

- 13.9 Harley provided its design drawings to CEP in June 2015 for CEP to conduct its fabrication works {CEP00064251}, para 8, and CEP's witness evidence confirms that CEP reviewed the designs and specifications provided and carried out the fabrication work in line with Harley's instructions {CEP00064251}, paras 5–7. Mr Blades explained that CEP's practice was to supply the fabricated panels that were "*effectively bespoke*" for each client {Day41/7} – {Day41/8}.
- 13.10 CEP informed Harley, in January 2015, that CEP used Arconic's KH35 cassette system profile. CEP also provided Harley with Arconic fabrication guidance it had in its possession {CEP00061428}. Mr Blades maintained that he believed that the BBA certificate covered the RB 55 PE both in the form it arrived in the factory and after it left the factory following fabrication {Day41/183} – {Day41/184}.

## ARCONIC'S MISLEADING CONDUCT

- 13.11 Arconic did not inform CEP of the Class E test results for the cassette version of RB 55 PE. Mr Blades expressed surprise that Arconic did not make CEP aware; had Arconic done so, Mr Blades maintained

that someone at CEP would have “*addressed the situation with Arconic as to how to overcome that problem*” {Day41/187} – {Day41/188}.

## CONCLUSIONS

13.12 CEP was a specialist fabricator. It had a supply contract with Arconic. Arconic and CEP had a special relationship in which Arconic designated CEP as an “Approved Fabricator”. Given the position CEP held, and with the knowledge that it was fabricating materials recently implicated in serious fires (as highlighted by Arconic’s email to it of 13 May 2013 {CEP00049719}), more should have been done between Arconic and CEP and the potential dangers of using PE ACM should have been raised with Harley or Studio E.

## 14 EXOVA

### EXOVA’S ROLE IN THE REFURBISHMENT

- 14.1 Exova was retained by KCTMO in 2012 {EXO00000540}, at the early stages of the refurbishment project, to produce fire safety strategies, both for the existing conditions of the Tower (the Existing Fire Safety Strategy (“EFSS”)) and for the refurbishment project (Outline Fire Safety Strategy (“OFSS”)).
- 14.2 Both the EFSS and the OFSS Exova produced were incomplete and inadequate at the time the project was tendered. By the time Rydon was selected as Main Contractor, the series of deficiencies in both the EFSS and the OFSS remained unaddressed {Day62/7} – {Day62/8}. Exova continued to provide ad hoc advice which was inadequate throughout the project {Day62/8}, despite a series of queries which should have raised red flags {Day62/52}.
- 14.3 These reports were intended to inform the KCTMO and the project team of the “*fire risk management plan for the building*” {TMO10037721} and the “*fire and life safety of the occupants of the building*”, including the “*Determination of any external fire spread issues ...and the impact of this may have on the architectural design*” and “*Recommendations of compartmentation...*” {EXO00000164}.
- 14.4 Terry Ashton, Associate at Exova and project lead at Grenfell Tower {EXO00000164}, repeatedly asserted in evidence that the reports were incomplete because he no longer considered Exova to be retained on the project once Rydon was appointed: {Day17/17} – {Day17/21}, {Day17/185} and {Day18/29} – {Day18/30}. However, there is no evidence to suggest that Mr Ashton had any reasonable basis to believe this. He was never informed that Exova’s appointment was no longer in place {Day62/15} – {Day62/16}, nor did he ever close the project file {Day17/164} – {Day17/167}.
- 14.5 Exova was contracted to carry out fire safety work up to and including RIBA Stage F {EXO00000164}. The ad hoc advice provided by Exova, even after Rydon was appointed and the project was in Stage F, was billed against the incomplete Stage D/E work: {Day17/187} and {EXO00001353}.
- 14.6 Mr Ashton, as the project lead, was responsible for the reports and for responding to queries. He had no previous experience in high-rise cladding projects {Day16/28} – {Day16/29}, nor was he well-versed in cladding materials {Day17/76} – {Day17/77}. Evidence provided to the Inquiry shone a spotlight on Mr



Ashton's careless and unprofessional attitude. He frequently failed to open documents sent to him, whether in preparation of issuing updated reports, or as information relevant to his response to ad hoc queries. Mr Ashton's recurring excuse was that no one asked him to review them and therefore he did not: {Day17/30} – {Day17/31} and {Day18/55}.

- 14.7 Inadequate systems and processes at Exova contributed to incomplete fire safety strategy reports. Had there been adequate procedures in place, Rydon submits that the EFSS would likely not have been abandoned as it was, and the various iterations of the OFSS would have gone through proper checks.
- 14.8 Fire strategy reports which properly addressed the requirements of Building Regulation B4, and which properly considered the RB 55 and RS5000, both individually and in combination, could have alerted parties to the dangers of the products specified for use.

## DEFICIENCIES IN EXOVA'S FIRE STRATEGY REPORTS

### EFSS

- 14.9 The EFSS was based on insufficient information, with minimum investigations carried out by Exova. It did not highlight that any deficiencies in compartmentation would greatly affect the stay-put policy {Day15/157}. It made assumptions about the building without any verification, particularly in relation to the degree of compartmentation {Day61/102}. It omitted regulatory guidance and annotated drawings {Day61/106} – {Day61/107}, the status of the lifts, the condition of the doors and the smoke control system {Day61/116}.
- 14.10 Cate Cooney, Principal Consultant at Exova, agreed that some of the information could have been obtained by visiting the Tower {Day14/131} – {Day14/132}. Peer reviewer of the EFSS was Dr Clare Barker, Principal Fire Engineer at Exova, who conceded that Exova should have stressed the importance of compartmentation and its effect on the stay-put policy {Day15/157}. Both put Exova's failures down to a lack of time and a looming deadline to submit the first draft: {Day14/131} – {Day14/132}, {Day15/157} and {Day15/108}.
- 14.11 The EFSS was never finalised due to differing views on the meaning of a handover between Ms Barker and Mr Ashton: {Day15/97} – {Day15/98}, {Day16/145} and {Day16/152}. This reflects a failure in Exova's processes. No one took over the responsibility for the EFSS after this including its finalisation.

### OFSS – ISSUES 1 TO 3

- 14.12 The various issues of the OFSS continued the trend of omitting information, which led to, in Dr Lane's words, a "*wholly inadequate*" third and final issue {Day61/222} – {Day61/223}.
- 14.13 Exova repeatedly failed to:
- (1) review information provided to them, which was highly relevant to updating their OFSS {Day17/30} – {Day17/31} and {Day17/41} – {Day17/42};
  - (2) request further information in order to sufficiently write up and later update the OFSS {Day17/39} – {Day17/40}, {Day17/102} – {Day17/103} and {Day17/130} – {Day17/131};

- (3) set out the minimum requirements of the BRs and the guidance of AD B {Day17/48} – {Day17/49};
- (4) sufficiently peer review the various issues of the OFSS {Day61/208} and {Day61/210}; or
- (5) recognise or take any steps to highlight that their OFSS needed to be finalised {Day18/130}.

This is inexcusable behaviour. These failures are explored further below taking each issue of the OFSS in turn.

#### *OFSS ISSUE 1 DATED 31 OCTOBER 2012*

- 14.14 Mr Ashton admittedly did not pay attention to emails and documents he was copied into before producing the first draft {Day17/30} – {Day17/31}. As a result Mr Ashton included the statement in section 3.1.4 without analysing the proposals and referencing the performance requirements of the external wall {Day17/48} – {Day17/49}.
- 14.15 Mr Ashton received the link to the Stage C report on the morning of issuing the first iteration of the OFSS {ART00008396}, but chose to ignore it because he did not see the need to open the link and look at the report as he did not consider it to be an important document {Day17/32}.

#### *OFSS ISSUE 2 DATED 24 OCTOBER 2013*

- 14.16 The omission of the performance requirements in section 3.1.4, which Mr Ashton kept unmodified {Day17/102} – {Day17/103}, was missed by Dr Anthony Pearson, a Senior Consultant at Exova, who was tasked with peer reviewing this Issue despite being junior to Mr Ashton. Dr Pearson not only did not question the absence of plans or drawings available, but was also “*completely ignorant*” of the overcladding aspect of the project: {Day19/118} – {Day19/119} and {Day19/121}. Common practice at Exova dictated that only the changes from previous issues were checked {Day19/92}, and none were made in respect to these items.
- 14.17 Mr Ashton’s reaction to Dr Pearson’s only amendment to Issue 2 relating to the escape route {Day19/79} – {Day19/80}, which he neglected to check before the report was issued, was to hope that it would *not* be picked up by RBKC BC {Day17/109} – {Day17/110}.

#### *OFSS ISSUE 3 DATED 7 NOVEMBER 2013*

- 14.18 The situation did not improve with Issue 3 and section 3.1.4 remained identical to the previous issue. In Mr Ashton’s mind the project was still in Stage D {Day17/128} with no changes since the last issue {Day17/130} – {Day17/131}.
- 14.19 Mr Ashton did not accept that maintaining the wording of section 3.1.4 was an abdication of his responsibilities, because Exova could “*only react to what [they] are being given*” {Day17/135}, despite having already been copied into the Stage C report detailing the various cladding proposals, including the use of aluminium rainscreen cladding {MAX00000445/32} and Celotex FR5000 {MAX00000445/82}.

## **CHANGE IN EXOVA'S POSITION FROM THE START OF THE INQUIRY**

14.20 Exova's position has evolved significantly during the Inquiry. From effectively washing their hands of any significant involvement at the start of the Inquiry {EXO00001572}, Exova now seem to accept a more significant participation, albeit their position remains one of maintaining that Exova could not have been relied on because they were not asked to advise on decisions made, nor were they involved in those discussions {EXO00001774}.

## **EXOVA REMAINED EMPLOYED AFTER RYDON'S APPOINTMENT**

14.21 After failing to provide advice addressing even the bare minimum in terms of fire safety guidance pre-tender, Exova was still contractually bound to provide advice on the project at the time that Rydon commenced as Main Contractor, ({Day62/19} – {Day62/20}, {EXO00000164} and {EXO00000540}) and remained retained as fire safety engineer on the project. Neither KCTMO nor Studio E ever indicated to Exova that their appointment was terminated: {Day62/15} – {Day62/16}. In addition, and vitally, Exova had not completed the RIBA stages of advice it had undertaken to address in its contract with KCTMO.

14.22 Mr Ashton accepted that it was no surprise that Rydon did not novate them as Exova sometimes remains client-side, and that Mr Ashton received no indication that KCTMO did not want them to carry on: {Day18/61} – {Day18/62}. However, the absence of their novation did not mean that Exova's work had ended {Day62/17}. To the contrary, Exova should have completed its detailed fire safety strategy by the time Rydon came on board {Day62/20} – {Day62/21}, irrespective of whether or not Exova continued to play an active role in the project {Day62/21} – {Day62/22}. However, as at the time of Rydon's appointment, this fire safety strategy remained outstanding.

14.23 Mr Ashton's evidence regarding his views on Exova's status after Rydon's appointment and thereafter was conflicting. When receiving ad hoc queries in 2014/15, Mr Ashton was initially certain Exova were no longer employed {Day17/185}, but later accepted that he understood and assumed KCTMO to be their client even during providing ad hoc advice in 2014/15 {Day18/63} – {Day18/64}.

14.24 Mr Ashton knew that the promised detailed fire safety strategy had still not been delivered by the time Rydon was appointed or at the time when crucial questions were raised about the cavity barriers strategy in March 2015 {Day18/130}. Notwithstanding the fact that the file was open throughout the refurbishment {Day17/164} – {Day17/167}, he failed to properly consider queries put to him and to provide proper advice.

## **AD HOC ADVICE AND RYDON'S PERCEPTION OF EXOVA**

14.25 Throughout the project, Exova continued to provide ad hoc advice to the design team, without informing any member of the design team that Exova, apparently, no longer considered themselves part of the design team, or retained by KCTMO or any other party.

14.26 Steve Blake, Refurbishment Director at Rydon, confirmed that Rydon had not appointed a fire safety engineer as it would be the remit of the architect, and Studio E did not advise Rydon that a fire safety

engineer was required {Day29/64}. Given Studio E's lack of experience in high-rise residential projects, Mr Hyett found that Studio E was imprudent not to have requested input from a fire safety consultant {Day63/86} – {Day63/87}.

- 14.27 At the time of the September 2014 exchanges between Exova and Studio E, Simon Lawrence (Contracts Manager at Rydon at the time) gave evidence that no decision had been made whether to use a fire safety engineer for the design of various areas, particularly the lower floors: {Day23/68} and {Day23/71}. Mr Lawrence was not concerned with the contractual arrangements between Studio E and Exova {Day23/72}. As the Stage E detailed fire safety strategy, including the consideration of the proposed materials, should have been completed by the time the tender was issued, and certainly by the time Rydon came on board {Day62/21}, it was no surprise that Mr Lawrence did not see the need to engage a fire engineer.
- 14.28 Similarly, as the fire safety consideration of the materials that ended up in the NBS specification should have taken place prior to tender, Mr Lawrence remained under the impression during 2014 that Exova would only ever be appointed in respect of the lower floors {Day23/79}. Exova later provided their advice on questions of fire safety of the lower floors to various parties, including RJ Electrics, the Clerk of Works and Max Fordham ({EXO00001416}, {RYD00062861}, {RYD00072279} and {RYD00075296}), without any issues being raised about their appointment or role on the project.
- 14.29 Importantly, with the terms of Studio E's engagement in mind, Rydon was entitled to expect that Studio E would raise any fire safety issues post-tender, and to recommend the appointment of a fire safety engineer, especially when Studio E did not have the requisite experience in this type of project: {Day63/86} – {Day63/87}.
- 14.30 Mr Blake did not enquire about the contractual arrangements surrounding Exova, as the fire strategy had been carried out at tender stage and, following that, the responsibility of the fire strategy shifted to Studio E {Day29/68} – {Day29/69}. It would have been Studio E's remit to seek further advice had they felt the need to do so {Day29/69}.

## **BILLING FOR AD HOC ADVICE**

- 14.31 Billing under Stage D/E for the ad hoc advice was possible only because the detailed fire safety strategy was never completed {Day18/53}. Although Mr Ashton accepts that he should have highlighted that he no longer considered Exova to be employed and part of the design team at this time ({Day17/17} – {Day17/21} and {Day17/185}), his advice was provided without proper thought; the prime examples of these are the following exchanges relating to cavity barriers.
- 14.32 If Mr Ashton was truly of the view that Exova was no longer retained, he should have responded to Studio E saying so. Instead, by providing his half-hearted advice, he and Exova assumed responsibility for that advice.



## EXOVA'S CONDUCT DURING THE COURSE OF THE VARIOUS CAVITY BARRIERS EXCHANGES WITH THE PROJECT TEAM

### NOVEMBER 2013

- 14.33 The query to Exova in November 2013, as to whether the cavity barriers needed to provide 60 minutes fire resistance could not have been more timely – just a few days before Issue 3 of the OFSS.
- 14.34 Mr Ashton said that he did not appreciate this specific question to be an indication that his analysis required updating, because *“it was a very small detail”* and the required fire resistance of the cavity barriers was independent of the rainscreen system arrangement {Day17/121} – {Day17/122}.

### SEPTEMBER 2014

- 14.35 In September 2014, Neil Crawford, Associate at Studio E, forwarded Harley's Request for Information (“RFI”) to Mr Ashton, who to this point admittedly gave no substantive thought to the cladding {Day18/25}. Upon receiving the drawings, in Dr Lane's view, Mr Ashton provided incorrect and inaccurate information about the insulation and cavity barriers {Day62/43} – {Day62/44}, despite Mr Ashton claiming to have been familiar with the provisions dealing with external walls in AD B {Day17/49}.
- 14.36 As part of Exova, a company whose main business was fire testing and reaction to fire {Day16/27}, Mr Ashton had access to a wealth of resources which could have informed his understanding of the insulation, the cavity barriers and cavity barrier strategy in the event he was in any doubt. Yet it seems he failed to seek input from anyone else within his organisation: {Day17/88}, {Day18/104} – {Day18/105} and {Day18/134} – {Day18/135}.
- 14.37 At this point, Mr Ashton was in possession of significantly more information about the external walls, having received the RS5000 datasheet and the detail section drawings {EXO00000709}.
- 14.38 The drawings were not reviewed in detail by Mr Ashton, as he says he no longer considered Exova to be part of the design team {Day18/29} – {Day18/30}, he had no specific instructions from Mr Crawford to check the RS5000 datasheet, and it was not obvious he needed to do so {Day18/47}. This is despite the fact that this had not been addressed in the EFSS or the OFSS. Mr Ashton disagreed that the mere fact of having been sent the datasheet constituted him having been told of the proposed insulation; Mr Ashton considered this exchange to be the same kind as receiving the link to the Stage C report without an explicit request for reviewing and providing comments on it {Day18/55}.
- 14.39 Had Exova been a *“fully paid-up member of the design team”* when the discussion arose, Mr Ashton agreed that he could have addressed all matters in much more detail {Day18/37}. Yet Exova had not completed the work they were contracted for, and were continuing to bill for the advice they were providing. Mr Ashton also accepted that his email could have been worded more clearly {Day18/39}, however, he was not interested in full construction details to *“do hours and hours of work which [he] was not entitled to be paid for”* {Day18/41} – {Day18/42}, notwithstanding that Exova's fees were never fully exhausted. This attitude lay at the heart of everything Mr Ashton did on the project. He spent

as little time as possible in everything he did, despite the fact that Exova continued to issue its bills to KCTMO.

*MARCH/APRIL 2015*

- 14.40 Once again, the debate over the cavity barrier strategy reached Mr Ashton in March 2015. Failing to note the reference to aluminium cladding, Mr Ashton simply assumed the cladding was zinc, and therefore non-combustible, and that he would be told “*at some point*” about the insulation {Day18/109}. Notwithstanding the fact that he was, yet again, asked to comment on elements of the external wall, Mr Ashton maintained that he had insufficient details from Studio E to update the OFSS {Day18/119} – {Day18/120}. This is despite the fact that earlier in the same month, Mr Ashton was sent a series of Harley drawings and a specification note detailing not only the cavity barrier strategy, but also the use of Reynobond composite rainscreen cassettes system comprising of aluminium composite panels ({EXO00001315} – {EXO00001322}), which Mr Ashton conveniently cannot remember seeing at the time {Day18/83} – {Day18/84}.
- 14.41 Mr Ashton failed to advise at this point about the outstanding OFSS work, because the question in the email “*wasn’t actually to do with the external wall construction, it was to do with components of it.*” {Day18/130} – {Day18/131}. However, the evidence provided to this Inquiry shows that separate elements of a façade cannot be viewed in isolation, as it is the combination of those elements that is crucial to their fire performance.
- 14.42 None of these exchanges appear to have caused Mr Ashton any concern: {Day17/121} – {Day17/122} and {Day18/109}. These were clear indicators that the degree of knowledge Mr Ashton assumed the readers of the OFSS to have {Day18/111} was not so apparent. Had Mr Ashton included the minimum performance requirements of B4 at the very least in Issue 3 at the time of the tender (as had been done at para 6.2 of the EFSS {EXO00001312/14}), this is likely to have focused the mind of the design team on pertinent matters to address regarding materials at the outset.

#### **EXOVA’S AWARENESS OF REYNOBOND 55 PE AND CELOTEX RS5000, AND THEIR USE IN COMBINATION**

- 14.43 Had Mr Ashton been informed of the proposal to use Celotex, he contends that he would have advised it was not acceptable without test evidence confirming its suitability for the Tower {Day17/95} – {Day17/96}.
- 14.44 Mr Ashton had in fact been informed of the proposed use of Celotex at least twice – once in the Stage C report {ART00008396} and again when he was sent the datasheet for RS5000 {SEA00011724}, as well as of the proposed use of Reynobond aluminium composite panels in the Harley specification {EXO00001315} – {EXO00001322}. Evidently, Mr Ashton had a number of opportunities to work out this combination from the documentation sent to him, but he took no care or effort to do so.

## CONCLUSIONS

- 14.45 Exova, with fire testing and reaction to fire being the bread and butter of their work, was best placed to raise flags about the proposed materials. Had Exova done so, then perhaps the project team would have been alerted to the potential dangers of those materials even before Rydon's appointment to the project.
- 14.46 As a main contractor with Employer's Requirements containing the OFSS, which should have comprised the necessary fire safety strategy and the vetting of the proposed materials, Rydon was entitled to rely on Exova, as a respected fire engineering firm, to have done its job and, in any event, on Studio E to advise whether any further advice should be sought from a specialist fire consultant. Exova did not do its job and no such recommendation was ever provided by Studio E. If Studio E, or indeed Harley, considered that they could not comply with their obligations to ensure compliance with the BRs without the assistance of a fire engineer, they were duty bound to inform Rydon that such was the case.

## 15 BUILDING CONTROL

### INTRODUCTION

- 15.1 RBKC BC was tasked with enforcing the Building Act (the "Act") (pursuant to s 91(2) of the Act). RBKC BC and Ms Menzies both agree that this entailed ensuring that the design and installation of works at Grenfell Tower complied with the Act and the BRs: {BMER00000004/12}, {Day60/62} and {Day45/94} – {Day45/95}.
- 15.2 Based on Rydon's previous experience, and in common with construction industry experience on all projects across the UK, Rydon's reasonable expectation was that RBKC BC would bring any non-compliance to Rydon's design team's attention: {Day25/190} – {Day25/191}, {Day27/129} and {Day29/73} – {Day29/74}. Studio E and Harley also saw RBKC BC as the overarching authority on compliance with the Act and the Regulations: {Day35/195} – {Day35/196}, {Day36/17} – {Day36/18}, {Day39/28}, {Day21/112} and {Day9/189}. Whilst this does not diminish Studio E's and Harley's own duties, it indicates the common understanding of RBKC BC's role.

### MR HOBAN'S APPOINTMENT

- 15.3 Whilst Mr Hoban had 34 years of experience as a Building Control surveyor {Day45/12}, at the time he was assigned the Grenfell Tower project, he had no previous experience in overcladding of high rise residential buildings ("HRRBs") {Day45/121}.
- 15.4 As manager of RBKC BC, it was Mr Allen's responsibility to ensure RBKC BC officers were keeping up from a technical perspective: {Day60/199} – {Day60/200} and {Day60/112}. Nevertheless, Mr Allen allocated the Grenfell Tower project to Mr Hoban, without any consideration for whether Mr Hoban had the requisite skillset or training: {Day47/115}, {Day47/157} and {Day47/119}. Mr Hoban was amongst those that found the BRs "ambiguous and confusing" {Day46/216}. Indeed, Mr Allen's evidence gives the distinct impression that he failed to appreciate the complexity in interpreting the BRs.

- 15.5 In the end, a completion certificate was issued at the Tower without Mr Hoban having checked compliance of materials, designs, or installation (in the way Ms Menzies informs the Inquiry he ought to have done: {Day60/110}, {Day60/122}, {Day60/127}, {Day60/130}, {Day60/140}, {Day60/142} – {Day60/144} and {Day60/153} – {Day60/154}.

## CHECKING COMPLIANCE OF MATERIALS

- 15.6 Mr Hoban, by his own admission, did not focus on the materials for use at Grenfell as he understood that Exova had been engaged on the project {Day46/25}. He did not request further details about the materials from Studio E because he had a good working relationship with them from the KALC project, and felt confident they knew what they were doing {Day46/32}.
- 15.7 Ms Menzies found that RBKC BC's failure to ask for detailed information of the cladding system at GT was a "*fundamental failing*": {Day60/131}, {BMER00000004/96} and {Day60/122} – {Day60/125}.
- 15.8 Mr Hoban knew from early March 2015 at the latest that ACM was to be used on the Tower {Day45/6} – {Day45/7}. He cannot recall when he first discovered that RS5000 was the insulation to be installed {Day46/44} – {Day46/45}.
- 15.9 Mr Hoban checked the first page of the BBA certificate for the Reynobond 55 ACM panels, saw that they were Class 0, and looked no further {Day46/23}. He did not have an understanding of what polyethylene was at the time, nor did he have any understanding of its performance in fire {Day46/21}. He accepted the contents of the BBA certificate without question or further interrogation {Day46/15}. Mr Hoban admits that he was "*new to the idea of class 0 in the context of a building over 18 metres*" at the time of the project {Day46/49:25} – {Day46/50:2}.
- 15.10 Even less scrutiny was applied to Celotex RS5000. As Celotex had anticipated {CEL00000716}, Mr Hoban says he looked up the LABC certificate for RS5000, saw that it was suitable for buildings over 18 m, and concluded it was suitable at the tower {Day45/38}. Mr Hoban knew that RS5000 was not a material of limited combustibility, but understood it could be used over 18 m provided it was attached to masonry, and reasoned that the concrete face of the tower was a similar material {Day46/37}.
- 15.11 Ms Menzies, Mr Hoban, and Mr Allen have all given consistent evidence to the effect it was a requirement of the role to investigate and rigorously test information provided regarding materials: {Day60/142} – {Day60/143}, {Day60/144}, {Day45/204}, {Day46/32} and {Day47/26}.
- 15.12 Mr Hoban was misled by the assertions made by both manufacturers and had neither the tools nor the time available to him to properly interrogate them.

## CHECKING COMPLIANCE OF DESIGNS

- 15.13 Mr Hoban failed to check the design and placement of cavity barriers. Grenfell Tower was the first project in his career where Mr Hoban was required to advise on cavity barriers within a rainscreen cladding system {Day46/123}. This was the first time he looked at diagram 33 in the context of a rainscreen cladding system (*ibid*).



- 15.14 Mr Hoban's inexperience and confusion regarding cavity barriers is illustrated in the numerous exchanges between RBKC BC, Studio E, Harley, and Siderise which began on 6 March 2015 and eventually concluded on April 2015: {SEA00000260}, {SEA00012953}, {SEA00000265}, {HAR00019417}, {SEA00013034} and {RYD00037836}. Studio E and Harley turned to RBKC BC for guidance on this aspect of the design, but rather than clarify what the Regulations required, Mr Hoban simply sowed further confusion. Initially, Mr Hoban advised that fire stopping was required, rather than cavity barriers {SEA00000265}.
- 15.15 Mr Hoban concedes he was confused by the terminology used in the query, specifically the use of the word "firebreaks" {Day46/106}. When Harley queried the vertical and horizontal requirements, Mr Hoban continued to find himself at a loss {Day46/111}.
- 15.16 By 20 March 2015, even whilst referring to Diagram 33, Mr Hoban appears to have advised in accordance with fire stopping rather than cavity barrier requirements {SEA00012963}. Siderise clarified this confusion in interpretation 6 days later: {SEA00013034} and {Day46/114} – {Day46/115}.
- 15.17 Following discussion with Paul Hanson {Day46/122}, Mr Hoban changed his mind and approved a proposal for cavity barriers on 1 April 2015 {HAR00013719}. However, even in finally approving cavity barriers, Mr Hoban demonstrated his lack of understanding of the Regulations by expressing approval under Parts B2 and B3, rather than under parts B2, B3 and B4 {Day46/122}. Mr Hanson was RBKC BC's in-house fire engineering consultant, but his expertise was limited to B1 and B5 {Day47/144}.
- 15.18 Mr Hoban's inexperience with the Regulations governing cavity barriers extended to their positioning in the façade. Mr Hoban states he understood the framework supporting the windows would act as a cavity barrier, as he thought they were steel {Day46/95}. Mr Hoban cannot however explain why he thought they were steel {Day46/96}.

## CHECKING COMPLIANCE OF INSTALLATION

- 15.19 Ms Menzies said that in accordance with the *Building Control Performance Standards*, Building Control Officers should attend site at least once every 28 days for all live sites {Day60/203}. Ms Menzies explained that whilst Building Control was not obliged to inspect, a contravention of the Regulations and the Act could only be identified by conducting site inspections, since a contravention could only occur on site: {Day60/35} and {Day60/203}.
- 15.20 In fact, records produced to the Inquiry suggest that Mr Hoban did not visit site once a month. The consequence was that any cladding or window installation occurring in those periods were not checked by RBKC BC.
- 15.21 Even where Mr Hoban did attend site, his inexperience combined with his lack of knowledge meant that his inspections were, unknown to Rydon, of little value. Mr Hoban assumed the window surrounds were to act as cavity barriers. The reality is that Mr Hoban could not have seen any evidence on site to support his assumption that there were steel window surrounds which could act as cavity barriers. Mr

Hoban says he did not think it was necessary to ask for windows to be uncovered for inspection {Day46/99}.

- 15.22 Once installation had commenced, Mr Hoban did not keep any tracker document, asserting that he used a plan check record sheet instead {Day45/79}. However, no such document has been disclosed to this Inquiry {Day45/81}. Mr Hoban also asserts that he kept notes in an A3 notebook {Day45/81}, which has also not been disclosed. Consequently, there are no adequate records to confirm what Mr Hoban ultimately considered in issuing his approvals for the Tower.
- 15.23 A completion certificate was issued for the Tower on 7 July 2016 {RBK00018811}, arranged by Mr Hoban {Day46/202}. He asserts that at the time he understood the refurbishment complied with B4 {Day46/204}. However, Mr Hoban's evidence that he would have copied and pasted any advice regarding B2, B3, and B4 {Day45/185} and that he had never dealt with these provisions for HRRBs prior to the Tower {Day45/121} suggests that he did not know what to look for in order to assess compliance.

## CONCLUSIONS

- 15.24 Unknown to Rydon, Mr Hoban was not qualified to perform the role of Building Control officer at Grenfell Tower. He was not provided with any training or guidance regarding the application of B2, B3, or B4.
- 15.25 Mr Hoban was misled by the Arconic and Celotex marketing materials. That is what those companies anticipated and hoped would happen, namely, that Building Control departments (and approved inspectors) throughout the UK, when considering their products would be misled into considering them compliant. Notwithstanding the pivotal role of RBKC BC and the expertise it was expected to have, Mr Hoban was simply unequipped either to understand the relevant fire regulations or whether products or systems complied with those regulations.
- 15.26 Mr Hoban's lack of competence, of course, does nothing to absolve the manufacturers, Arconic, Celotex, Kingspan and Siderise, from responsibility for the consequences of the successes of their strategies to keep hidden the true characteristics and dangers of their products.

## 16 RYDON AND WINDOW SURROUNDS AND INFILL PANELS

### WINDOW SURROUNDS

#### INTRODUCTION

- 16.1 Whilst SD Plastering ("SDP") may have suggested the design for the window surrounds, and whilst Rydon agreed on the design, the specification of the material to be installed in the gaps behind the window reveals was Studio E's responsibility. Studio E was also responsible for providing direction regarding specified materials through their drawings: {RYD00094228}, cl 31. Studio E should have ensured that this specification was clearly noted on sufficiently detailed drawings: {PHYR0000029},

para 4.3.96. Mr Hyett's view was that Studio E did specify the correct material for filling the gaps in the window surrounds by including mineral wool under P10/235 in the NBS specification: {PHYR0000029}, para 4.3.94. However, this was never carried through to the section drawings.

- 16.2 Studio E's drawings and the absence of directions from Studio E later in the project indicate that Studio E never envisaged or understood section P10 of the NBS specification to apply to the gaps in the window surrounds. If they did, they failed to properly discharge the obligations they owed to Rydon.
- 16.3 Once materials were agreed between SDP and Rydon, it was for Studio E to confirm drawings, the materials in those drawings, and the compliance of those materials: {RYD00094228}, cl 27 and 31, and {PHYR0000029}, para 4.4.145.
- 16.4 Admissions by Rydon witnesses that they should have approved materials were in line with Rydon's contractual obligations to KCTMO. In reality however, in line with the obligations presented to and agreed by Studio E before they commenced work with Rydon {RYD00094228}, Studio E should have ensured the material specified around window surrounds met the guidance of AD B2, and should have reported to Rydon that inappropriate work was being conducted on site once they noticed PIR products were being used to pack window linings: {PHYR0000029}, para 4.4.145.
- 16.5 The absence of sufficiently detailed drawings or directions from Studio E resulted in the wrong material being selected for the window surrounds. The evidence also suggests that the works to the window surrounds were inspected by RBKC BC and the Clerk of Works. Neither raised concerns about the materials being installed.

#### WINDOW SURROUNDS SPECIFICATION

- 16.6 According to Mr Hyett, P10/235 is an NBS template specification clause for insulation, which was incorporated by Studio E in the NBS specification with reference to Rockwool: {PHYR0000029}, para 4.3.94.
- 16.7 Section P10/235 of the NBS Specification {SEA00000169} is as follows:

“235 COMPRESSIBLE INSULATION IN GAPS

- *Manufacturer: Rockwool Limited, Pencoed, Bridgend, CF35 6NY*  
*Tel: 01656 862621, Email: customersupport@rockwool.co.uk, Web: www.rockwool.co.uk.*
  - *Product reference: Flexible Slabs RWA45.*
  - *Density: Not less than 45kg/m<sup>3</sup>*
- *Material: Mineral wool to BS EN 13162.*
  - *Facing: Not required.*
- *Recycled content: Submit proposals.*
- *Thickness: To suite application available in 30/ 40/ 50/ 60/ 75/ /100mm.*
- *Installation requirements:*
  - *Joints: Butted, no gaps. Cut and fit tightly between/around cladding supports.*
  - *Fasteners: Use where necessary to retain insulation and/ or prevent slumping.”*

- 16.8 The insulation specified in this section of the NBS specification, which in Mr Hyett’s opinion was for the window surrounds **{PHYR0000029}**, para 4.3.94, clearly differed from insulation specified elsewhere on the building. However, as can be seen from the extract above, it was not obvious that this insulation was required around window surrounds. There is no direction as to the location of these gaps, nor any reference to windows. Especially for these reasons, Studio E should have identified P10/235 on the drawings in the relevant locations.
- 16.9 Rather, it seems it was completely missed. References to P10/235 appear on two “Detail Section” drawings produced by Studio E, in drawing (06) 120 “*Detail Section Sheet 1*” **{RYD00092648/27}** behind the roller shutter, and in drawing (06) 121 “*Detail Section Sheet 2*” **{RYD00092648/28}** above the main entrance. Both references to P10/235 are on the ground level, but neither appear near the windows on higher levels. On Detail Section Sheet 1 there is, however, reference to P20 for the cill, reveal and head of the window, but without specifying which section within P20. This can only be a reference to P20/240A titled “*Plywood window reveals and cills*” (**{SEA00000169/249}**).
- 16.10 There are no references to P10/235 in drawing (06) 110 “*Proposed Typical Bay Plans, Section & Elevation*” whatsoever around the windows **{SEA00002499}**. Contrastingly, that drawing did specify EPDM to be “*lapped over*” externally around the windows in two locations. Studio E also produced drawing (05) 118 “*Window Surrounds Making Good Typ Res*” **{RYD00088417}**, which refers the reader back to drawing (06) 120. However, as explored above, drawing (06) 120 does not show P10/235 around the windows.
- 16.11 In Mr Hyett’s view “*it is reasonable to assume that Studio E intended that such application would have included locations such as the gaps behind inner window reveals*”: **{PHYR0000029}**, para 4.3.94. This view is difficult to reconcile with: (1) the fact that Studio E identified P10/235 in a few locations, but never around the windows in their drawings; and (2) evidence provided by Bruce Sounes, as follows.
- 16.12 Mr Sounes, Associate at Studio E, stated that the gap around the windows was needed to accommodate tolerances, which should be filled with insulation, adding that the size of these gaps did not concern him **{Day21/115}** – **{Day21/116}**. Despite knowing that these gaps would be there and needed to be filled with insulation, Studio E completely omitted to include any reference to mineral wool insulation or a reference to the specification in P10/235 on their “*Proposed Typical Bay*” (**{Day11/94}** – **{Day11/95}** and **{SEA00002499}**) or “*Detail Section Sheet*” drawings in the relevant areas **{RYD00092648/27–28}**.
- 16.13 Mr Sounes said the reason for the “*codes*” on the drawings was to refer back to the NBS specification **{Day21/121}**. He disagreed with the proposition that Studio E ought to have identified on the drawings the type of insulation product to be used in the window reveals (*ibid*). This is despite the fact that the codes only seem to be omitted for existing items and features of the building on these drawings **{SEA00002499}**.
- 16.14 Mr Hyett said that Studio E was entitled to assume that Rockwool would be used in the gaps behind the window reveals, as that is what was specified **{Day65/30}**. However, all of those omissions on the drawings suggest that using P10/235 in the window surrounds was never in Studio E’s contemplation. In



the circumstances, it is hard to fathom how a general D&B contractor with no specialist knowledge, such as Rydon, could reasonably be expected to work out from this that P10/235 was in reality intended for the window surrounds. Studio E had been appointed to the project by Rydon after it had formulated the NBS specification, and it was up to Studio E to articulate that P10/235 applied to window surrounds if this was Studio E's intention.

#### CHOICE OF WINDOW SURROUNDS

- 16.15 The selection of the window surrounds materials was made through a series of window mock-ups, site meetings and discussions during those meetings. The windows in the pilot flat were initially completed by Everglaze Insulation Limited (“**Everglaze**”), a specialist window subcontractor Rydon had used previously for window work {**Day31/169**} and approached for a quotation for the window trimming package. The quotation by Everglaze was in excess of the budget that was allocated to this package and, as a result, Rydon had approached other known subcontractors for a more competitive price {**Day31/167**} – {**Day31/169**}.
- 16.16 Simon Lawrence, Rydon Contracts Manager at the time, believed that using Celotex behind the uPVC was most likely decided when the pilot flat was completed, which solved the bowing issue and provided enough support to the lining boards {**Day25/40**} – {**Day25/42**}. Later, Rydon would have discussed with SDP that a rigid insulation product was required, and it would have been up to SDP and its supply chain to find a brand and model in the required thickness {**Day25/64**} – {**Day25/65**}.
- 16.17 The work carried out on the sample window in the pilot flat was shown to SDP, who noted the issues with the joints in the uPVC and the bowing {**Day44/109**}. The uPVC window reveals were part of Harley's suggested value engineering savings {**RYD00003319**} and adopted by KCTMO before the contract with Rydon was even finalised: {**TMO00832490**} at item 8.1 and {**TMO10043523**}.
- 16.18 Mark Dixon, Director of SDP, recalls that somebody suggested using insulation board to bridge the gap, which was discussed and agreed {**Day44/112**} – {**Day44/113**}. Mr Dixon cannot remember who suggested it (*ibid*). There were a number of discussions on site about the materials, and Mr Dixon's evidence is that “*the selection of materials was based on agreement between Rydon and SDP as to what the appropriate rigid insulation board would be for those locations*” {**Day44/142**}. Mr Dixon also added that in the show flat “*there must have been a section somewhere that we've stolen the idea, for want of a better word*” to use Celotex underneath the uPVC {**Day44/194**}.

#### RESPONSIBILITIES OF STUDIO E

- 16.19 Studio E's Deed of Appointment and the Schedule of Services annexed thereto required Studio E to take a proactive approach in ensuring that architectural designs complied with the Employer's Requirements ({**RYD00094228**}, cl 4) and with Statutory Requirements ({**RYD00094228**}, cl 8).
- 16.20 Studio E was responsible not only for coordinating “*any design work done by consultants, specialist contractors, subcontractors and suppliers*” ({**RYD00094228**}, cl 13), but also examining

*“Subcontractors’ and Suppliers’ drawings and details, with particular reference to [...] performance criteria and report[ing] to the Contractor”* ({**RYD00094228**}, cl 27).

- 16.21 Studio E failed in both respects. Studio E failed to coordinate SDP’s design, or examine their details ensuring compliance with the NBS specification and the performance criteria set out within, and to report back to Rydon.
- 16.22 Moreover, Studio E had a further obligation to *“provide supplementary notes to drawings and provide further drawings to show sufficient information to construct the project”*, including window jamb/ head/ cill details: {**RYD00094228**}, cl 31. The absence of such drawings and notes confirm that Studio E neglected to do this.
- 16.23 As to why Neil Crawford, Associate at Studio E, never highlighted the need to install mineral wool insulation in the gaps within the window surrounds marked as *“insulation by others”* on Harley’s drawings, Mr Crawford stated that he was not aware of what Rydon intended to install there {**Day11/100**}. As it was a D&B contract, he was of the view that Rydon was at liberty to choose the material as long as it was agreed with the client (*ibid*), adding that Studio E did not have any inspection or monitoring role {**Day11/107**}. This evidence is contrary to the role Studio E had taken on under its engagement and what Mr Crawford did.
- 16.24 In fact, Mr Crawford did consider the relevant drawings. In February 2015, he commented *“Rydon to confirm package”* on the *“insulation by others”* element on one Harley drawing, but without making any reference to P10/235 or mineral wool insulation {**RYD00046005**}. Mr Crawford should have instead commented *“mineral wool to BS EN 13162”*. Such a comment, in Mr Hyett’s view, would have been a direction from a reasonably competent architect to the D&B contractor {**Day65/30**}.
- 16.25 Mr Hyett criticised Studio E for failing to address the *“insulation by others”* element when reviewing Harley’s drawings, and failing to ensure that the material was properly specified in compliance with BRs and AD B2: {**PHYR0000029**}, para 4.4.145. Further, Mr Hyett’s view was that Studio E should have reported to Rydon the inappropriate use of PIR products in the window surrounds: {**PHYR0000029**}, para 4.4.145.
- 16.26 It is no surprise that Mr Lawrence agreed in evidence that Rydon did not instruct SDP about fire resistance or compartmentation {**Day25/58**}. Rydon delegated to Studio E the responsibility to manage compliance with the Employer’s Requirements, the relevant regulations, and coordinate design work, as set out in the Schedule of Services. Rydon relied on Studio E to raise any compliance issues.

#### **INFORMATION AVAILABLE TO SDP AND THEIR RESPONSIBILITIES**

- 16.27 Mr Dixon said that Rydon did not provide any specification for the materials to be used {**Day44/118**}. However, the full NBS specification was included in the internal package enquiry sent to SDP in June 2014 {**RYD00008775**}. Therefore, SDP was in possession of the specification when they were asked to quote for the window surrounds work. If indeed P10/235 was intended for the window surrounds as Mr Hyett asserts {**PHYR0000029**}, para 4.3.94, SDP could have checked this.

- 16.28 When the first package (dry lining) was let to SDP in February 2015 {RYD00031801}, the letter of intent {RYD00031803} incorporated Rydon's Standard Terms & Conditions at Appendix B {RYD00031806}, as well as the provisions of the Building Contract between KCTMO and Rydon. The Terms & Conditions set out that SDP's work must comply with "*current relevant British standards and codes of practice*" (*ibid*).
- 16.29 Once Rydon accepted SDP's quotation for the works to the window surrounds as a variation {RYD00042594}, SDP had already agreed to their contractual obligations. However, it seems SDP did not consult the NBS specification to establish the correct materials to use, nor did they ensure compliance with the relevant standards.
- 16.30 Whilst Zak Maynard, Commercial Manager at Rydon at the time, was familiar with the NBS specification, he would not ordinarily note all the specific requirements within; he, and Rydon, would rely on subcontractors to pick up this detail {Day31/145}. Mr Lawrence agreed that it would have been for Rydon to approve both Celotex TB4000 and Kingspan TP10 for use in surrounds {Day25/61}. This accords with Rydon's contractual obligations and Rydon delegated those obligations to SDP, who was required to ensure those materials were appropriate to use.

## CONCLUSIONS

- 16.31 Provided that If P10/235 of the NBS specification applied to the gaps in the window surrounds, as is the interpretation of Mr Hyett, there seems to be no evidence to show that Studio E had the faintest intention for it to be applied in those gaps in light of their drawings.
- 16.32 Had those drawings been prepared carefully with reference to P10/235, it would have directed Rydon and its subcontractors to install mineral wool in those locations.
- 16.33 If Studio E did mean for P10/235 to apply to the gaps in the window surrounds, when it had the opportunity it made no attempts to clarify their intentions to Rydon. Consequently, Studio E completely failed to fulfil its contractual responsibilities, which resulted in the installation of the incorrect material.

## WINDOW INFILL PANELS

### INTRODUCTION

- 16.34 When Studio E prepared section L10/332 for the window infill panels in the NBS specification, they did not identify the exact materials nor the fire performance of the materials to be used within the infill panels: {PHYR0000029/79}, para 4.3.92. In Mr Hyett's view Studio E should have, at the very minimum, included limited combustibility as a requirement for the core of the infill panels, in accordance with para 12.7 of AD B2 (*ibid*). (In his oral evidence, Mr Hyett conceded that, whilst he believed 12.7 of AD B2 applied to the infill panels, others could take a different view {Day65/25}.)
- 16.35 Associates of Studio E gave entirely inconsistent reasons as to why the NBS specification did not have the requisite details. While accounts from Harley on the applicable performance requirements for the infill panels were similarly disjointed, the absence of detail in L10/332 permitted Harley to propose infill panels that incorporated Styrofoam (P1 panel) and TP10 (P2 panel) in their cores. Neither material

is of limited combustibility: {PHYR0000029/134}, para 4.4.138 and {PHYR0000029/135}, para 4.4.140. The P2 panel housed the kitchen extract fan as proposed by JS Wright {RYD00026500}, which Nuaire confirmed to be suitable for high rise buildings {RYD00040991}.

- 16.36 Whilst Studio E did mark up Harley's specification notes, despite its contractual duties ({RYD00094228}, cl 27), Studio E consistently failed to advise that either panel was inappropriate for its proposed use: {SEA00003160/1}, {SEA00003060/1}, {SEA00003180/1} and {RYD00046822/1}.

#### **NBS SPECIFICATION OF WINDOW INFILL PANELS BY STUDIO E**

- 16.37 The window infill panels under L10/332 {SEA00000169/145} did not specify the type of insulation required, or whether the insulation in its core was required to be of limited combustibility, or whether it needed to comply with para 12.7 of AD B2, as Mr Hyett suggests it should have.
- 16.38 Neil Crawford, Associate at Studio E, understood that Harley, as specialist designers, were responsible for proposing materials in compliance with the NBS specification and the performance requirements under L10/332 {Day9/112}. Later in evidence, Mr Crawford reluctantly accepted that section L10/332 was silent on fire performance requirements, despite his claims that this section, requiring an "*insulated core*", was a "*performance spec in that respect*" {Day9/147}.
- 16.39 However, Mr Crawford was not willing to accept that Studio E should have, at the very least, prescribed the type of insulation product within the infill panels, because the minimum U-value was provided and the specialist subcontractor could then choose the product as they saw fit {Day9/154}. Mr Crawford also argued that as the infill panels formed part of the window units, and were specified under the section for windows in L10, it would not fall within the external wall construction, which would effectively determine the fire performance for this element as part of the window unit {Day9/155}.
- 16.40 Mr Sounes had a rather different take on why he thought there was no need for Studio E to specify that the insulation needed to be of limited combustibility. According to Mr Sounes, "*that would be subject to the method of demonstrating compliance*" and therefore the selection of the type of panel was left to the contractor and the relevant subcontractor {Day21/122} – {Day21/123}.
- 16.41 These accounts from the associates of Studio E plainly do not accord with each other, and in fact, their explanations of what should or should not have been specified rely on completely unrelated concepts.
- 16.42 Mr Hyett indicated that in his view the insulation within the infill panels should have conformed to para 12.7 of AD B2: {PHYR0000029/77}, para 4.3.88. The accounts from Studio E, explaining the wide-ranging reasons for omitting to specify the exact material or the required fire performance, demonstrate Studio E's lack of understanding of the BRs and guidance, as well as of its contractual responsibilities {RYD00094228}.

#### **THE SELECTION OF WINDOW INFILL PANEL PRODUCTS BY HARLEY**

- 16.43 The absence of a proper specification in the NBS permitted Harley to select window infill panels incorporating Styrofoam and TP10 as core insulation. Kevin Lamb, whose designer services Harley had



drawn on for the project, gave evidence that he “*would never have been expected to specify products*” as part of his job, but did so for the window infill panels {Day37/104}.

- 16.44 Mr Lamb firmly recalled that Ben Bailey, Project Manager at Harley, had instructed him to use panels available from Panel System {Day38/167}. The NBS specification had no specification for the core material {Day38/169}. Mr Lamb expected Studio E to approve the window infill panels that Harley were to propose {Day38/169} – {Day38/170}.
- 16.45 Initially, Mr Lamb suggested TP10 as core insulation internally to Harley for both P1 and P2 panels {Day38/173}, which was based on his previous experience using this product, as being “*a class 0 panel that I’ve used many, many, many times over the years*” (*ibid*). His understanding was that an insulation board sandwiched between aluminium panels provided a Class 0 product {Day38/174} – {Day38/175}. Mr Lamb admitted that he never checked whether Class 0 for this element was sufficient {Day38/175}.
- 16.46 According to Mr Lamb, Mark Stapley, Operations Director at Harley, wanted to change TP10 to Styrofoam for both P1 and P2 panels, but Panel Systems were unable to supply panels with a different colour on the inside {Day38/176} – {Day38/177}. Consequently, Mr Lamb’s suggestion to use panels incorporating TP10 was retained for the P2 panels, with which both Harley and Studio E were content {Day38/178}.

#### **HARLEY’S UNDERSTANDING OF THE BUILDING REGULATIONS AND GUIDANCE**

- 16.47 While Mr Lamb claimed to have put TP10 forward on the basis that he believed its Class 0 classification was sufficient for the project {Day38/179}, other Harley witnesses had different views on performance requirements. Ray Bailey, Director of Harley, viewed the window infill panels to be part of the windows and therefore not covered by AD B2 {Day33/172}.
- 16.48 Similarly, Ben Bailey did not accept that Harley should have checked the compliance of the panels, because, based on his current knowledge, the windows and the infill panels were excluded from the external wall construction, and therefore outside the scope of AD B2 {Day39/174} – {Day39/175}.

#### **STUDIO E’S RESPONSIBILITIES**

- 16.49 Taking Mr Hyett’s conclusion that Studio E omitted to specify in the NBS specification the limited combustibility requirement {PHYR0000029/79}, para 4.3.92, Studio E failed to carry out its contractual duty to Rydon in this respect: {RYD00094228}, cl 8.
- 16.50 In Mr Hyett’s view both infill panels were unsuitable for their application due to not achieving limited combustibility classifications, which a reasonably competent architect should have known or established through checks: {PHYR0000029/134}, para 4.4.139 and {PHYR0000029/135}, para 4.4.140.
- 16.51 These checks were part of Studio E’s responsibilities: {RYD00094228}, cl 27. However, the fact that Studio E had no reservations about either infill panels is evident from Mr Crawford’s marked-up Harley specification notes.
- 16.52 The various iterations of the Harley specification note, which Mr Crawford reviewed on numerous occasions, consistently detailed both Styrofoam and TP10 cores within the infill panels. Neither were

flagged by Mr Crawford as a concern or non-conformance with the BRs or AD B2: {SEA00003160/1}, {SEA00003060/1}, {SEA00003180/1} and {RYD00046822/1}. As a result of Studio E's failure to recognise that the panels did not comply, it failed to report this non-conformance to Rydon.

## CONCLUSIONS

- 16.53 Looking at how the issues identified by Mr Hyett arose, Studio E not only omitted to specify the correct material or the fire performance requirements in the NBS specification for the window infill panels, it also repeatedly neglected to identify that Harley specified inappropriate insulating cores within these panels.
- 16.54 Clearly, there were diverging views between the witnesses on whether window infill panels would be considered part of the windows or the external wall. However, Rydon, as a main contractor, relied on its architect and specialist subcontractor to ensure that the materials, as specified, selected and subsequently installed, would comply with relevant regulations.
- 16.55 Insofar as the issues identified by Mr Hyett are correct, neither Studio E nor Harley fulfilled their contractual obligations owed to Rydon. And if Studio E and Harley did not readily understand the applicable regulations, it would be unreasonable to expect anything more from a main contractor.

## 17 RYDON'S PROCUREMENT

- 17.1 In Phase 2 Module 1, several witnesses were asked questions about contact between KCTMO and Rydon prior to Artelia sending Rydon, on 18 March 2014 at 17.55, notification that it was the preferred bidder: {ART00008755} and {ART00008632}. In particular, witnesses were asked about a meeting between KCTMO and Rydon which took place earlier the same day.
- 17.2 On 14 February 2014, KCTMO opened the three tender submissions it had received in the OJEU procurement, from Rydon, Durkan and Mulalley: {ART00002197}, App A. Over the following days the tenders were scored by KCTMO and Artelia.
- 17.3 On 28 February 2014, (Philip Booth 1<sup>st</sup> W/S {ART00008527}, para 117) Artelia issued its draft tender report to KCTMO, which concluded that:

*"[...] Rydon have submitted the most competitive tender price and the highest quality making it the most economically advantageous tender. [...]"*

*"With the interviews weighted at 5%, regardless of the interview scores Rydon will still have the most advantageous tender. However, we will still invite all tenderers to interview."*

{ART00008953} at § 10.0.

- 17.4 Rydon's bid was around £750,000 in excess of KCTMO's budget of £8.5m and the other two tenderers' bids were higher still. A further procurement exercise was undesirable: the project had already been significantly delayed, prior to the re-procurement, and Peter Maddison's evidence was that a further re-procurement would have been risky, due to weak interest from contractors {Day59/16} – {Day59/17}. It follows that Rydon was always going to be awarded the contract, and KCTMO had known this since 28 February 2014 at latest, when it received Artelia's draft tender report.

- 17.5 Artelia's draft tender report also concluded: "*As the most attractive tender has come in over the client budget, we would like to ask for permission from the client to proceed with the value engineering exercise with Rydon who are the lowest tenderer*": {ART00008953} at § 10.0. The idea of having an "offline" or "informal" meeting with Rydon prior to official notification then came from KCTMO. Jenny Jackson's email of 2 March 2014 to Philip Booth, Simon Cash, Claire Williams and Peter Blythe, cc David Gibson, stated:
- "I think the way forward is to enter into the contract for £9,249,294 and then embark on the VE post award (so the award is on the basis [o]f the published evaluation criteria). There will need to be some "informal" discussion with the preferred contractor prior to award so there is an understanding of the approach."* {ART00006433}
- 17.6 Artelia supported this approach, with Mr Cash replying on 3 March 2014: "*I agree with you in terms of placing the contract at the submitted tender value and an offline discussion with the preferred contractor.*" (*ibid*)
- 17.7 KCTMO's Board, in particular, needed reassurance that if KCTMO awarded the contract to Rydon, Rydon would not subsequently refuse to make changes to bring the project within KCTMO's budget. Ms Jackson replied to the above email, also on 3 March 2014, stating: "*We need to think how this will be presented to the Board – we will be asking them to sign a contract for a contract sum in excess of the current budget*" (*ibid*). Mr Cash said in oral evidence: "[...] *the TMO actually needed to be able to have comfort, otherwise they wouldn't be able to sign off the tender report, in which case then we wouldn't have had a project*" {Day48/228:13–16}.
- 17.8 However, it was always apparent to all parties that value engineering was likely to take place on this project. The D&B Contract issued to tenderers referred to the employer and the contractor engaging in such an exercise: {ART00002197} at § 5.0. The tender had invited bidders to provide alternative costings. No KCTMO witness has suggested that they had any previous experience of a contractor refusing to engage with such an exercise or that they had any good reason to anticipate Rydon would refuse to do so.
- 17.9 Further, KCTMO must have understood that: (1) any reassurance it obtained prior to the award of the contract was not legally binding; but (2) as the employer, it was the person with ultimate control. In the unlikely event that Rydon refused to accept a variation to the contract, any claim for damages would have been only for the diminution of Rydon's profit, a figure which could reasonably have been expected to amount to no more than around £100,000. (Assuming KCTMO sought to reduce the contract price by around £800,000. Rydon's overheads and profit for the project were 12.5%: {RYD00094244/14}.) In these circumstances, KCTMO's decision to seek comfort in the way it did, and Artelia's support of that decision, is difficult to understand, especially since it created a risk of other tenderers challenging the procurement, as Mr Maddison was aware {Day59/16} – {Day59/17}.
- 17.10 On the 18 March 2014 meeting, Steve Blake's evidence was that Rydon did not give any assurances at the 18 March 2014 meeting that Rydon was able to meet KCTMO's budget {Day28/175}. Rydon could

put forward suggestions for KCTMO's consideration, but the change was down to them. He was unaware of whether or not KCTMO had told other tenderers that a value engineering exercise was being pursued. There was no secret arrangement that if Rydon agreed to reduce its price by £800,000 then Rydon would get the job. Mr Blake understood the discussions regarding value engineering as taking place at the same time as Rydon were appointed by KCTMO {Day28/185} – {Day28/187}. Mr Maddison's evidence was that the meeting was not a "secret meeting". There was written correspondence between the parties to the meeting and Mr Maddison reported on the meeting at KCTMO's Executive Team meeting the following day: {Day59/14} – {Day59/15} and minutes of meeting {TMO00850744}. Rydon did not agree at the meeting to make savings. They agreed to work with KCTMO on the basis of the pre-contract agreement – the points of which were then written into the Board report presented to the Board on 27 March 2014 {Day59/29}.

- 17.11 On the relationship between Mr Maddison and Mr Blake, Mr Blake's evidence was that he had not worked with Mr Maddison on any other projects prior to Grenfell Tower. He did not consider Mr Maddison to be a personal friend {Day28/93}. Mr Maddison's evidence was that he cannot recall when he first met Mr Blake and he had never directly worked with Rydon or Mr Blake prior to this project. His evidence was that he knew Mr Blake in the same way he knew his equivalents at most of the main contractors who bid for this sort of work {Day58/162}.

## CONCLUSIONS

- 17.12 Rydon contends:

- (1) There was no personal motive for Mr Maddison (or anyone else at KCTMO) to favour Rydon over any other contractor.
- (2) Rydon's tender bid was evaluated objectively, on the basis of the criteria that had been agreed for the OJEU procurement. Rydon's bid was clearly in first place, on both price and quality, and KCTMO knew that by 28 February 2014 at the latest. Quality amounted for 55% of the overall score and price for 40%, with the interviews comprising the balance: {ART00002197}, table at § 2.1.
- (3) It was KCTMO who instigated contact with Rydon regarding savings of around £800,000 prior to formal notification of Rydon's preferred bidder status. KCTMO did so in the knowledge that Rydon was certain to win the tender, following the tender evaluation and the issuing of Artelia's draft tender report. Neither KCTMO nor Rydon sought to keep the existence of the 18 March 2014 "secret" in the sense of ensuring its existence was never discovered, since both parties entered into written correspondence regarding the meeting and the meeting was subsequently referred to in minuted meetings of KCTMO's Executive Team and Board.

- 17.13 In any event, no causative link runs from (1) the contact between KCTMO and Rydon prior to formal notification of Rydon's preferred bidder status to (2) the use of RB 55 PE on the Tower. Even if KCTMO's contact was contrary to the procurement rules, no different decision would have been taken



regarding the selection of cladding materials had KCTMO waited until after formal notification to begin discussions on reducing the contract price.

- (1) As set out at paras 4.1–4.7 above, the inclusion of ACM and RB 55 PE in the NBS Specification was due to events dating back to 2012, in which Rydon had no involvement. In particular:
  - (a) Arconic promoted the use of ACM at a meeting with Studio E and CEP in October 2012.
  - (b) Leadbitter suggested using aluminium cladding rather than zinc, as a potential value engineering option, to KCTMO {Day59/84} – {Day59/85} at least as early as 28 January 2013: Maddison notebook {TMO00879771/10}.
  - (c) In October 2013, at Studio E’s request, Harley produced a budget spreadsheet setting out value engineering options for the cladding, including, among others, “*standard aluminium ACM in both cassette and face fixed*” which showed a potential saving of £500,000: {SEA00009237/1–2}.
- (2) In the OJEU procurement, commencing at the end of November 2013, tenderers were asked to submit bids for “*Aluminium cladding*” as an alternative to zinc ({ART00002197/9}, item 1 in table) and, by Studio E’s NBS Specification, which was provided to tenderers, that included Reynobond and Alucobond ACM: {SEA00000169}, § H92/11.
- (3) Use of ACM cladding panels was thus always contemplated as being within the Employer’s Requirements. In these circumstances, terming the selection of ACM as “value engineering” is something of a misnomer. In effect, tenderers were asked to price, *during the tender stage*, multiple variations on the same project. KCTMO retained complete control over which variation would be put into effect and, naturally, took this decision with an eye on its budget.
- (4) In the event, no tenderer returned a bid that was inside KCTMO’s budget when Proteus HR was selected for the cladding material. Rydon’s bid was the closest to KCTMO’s budget, but was still around £750,000 in excess. Unless it was able to secure a large increase to the budget or there was a material reduction in the scope of the project, KCTMO would always have chosen to opt for ACM, no matter which contractor was appointed or when KCTMO began discussions about reducing the contract price. This choice was made with all parties understanding that, as represented by Arconic and certified by the BBA at the time, RB 55 PE, in particular, in cassette form, was a material that was safe to use as rainscreen cladding on a high rise building.

## 18 PRICES PAID BY RYDON FOR CLADDING MATERIALS

- 18.1 Harley produced a document dated 14 March 2014 titled “*Grenfell Tower, London[:]* Proposed V.E cost savings” {RYD00003316} (“**Harley’s VE Quotation**”). Mark Harris emailed Harley’s VE Quotation to Mr Blake, cc Mr Lawrence, Katie Bachellier and Mike Albiston, on 14 March 2014 {RYD00003315}.
- 18.2 Harley’s VE Quotation quoted Rydon the following potential savings, among others, if Reynobond was selected for use as the cladding panels instead of Proteus HR Zinc:

*“Reynobond Natural Zinc cladding (cassette) in lieu of      -£157,385*

*Proteus zinc cladding (cassette)*

*Reynobond Natural Zinc cladding (face fix) in lieu of*      **-£279,764**

*Proteus zinc cladding (cassette)*

*Reynobond standard silver colour aluminium cladding*      **-£419,627**

[that is, RB 55 PE] (cassette) in lieu of *Proteus zinc cladding (cassette)*

*Reynobond standard silver colour aluminium cladding*      **-£576,973”**  
(face fix) in lieu of *Proteus zinc cladding (cassette)*

18.3 On 20 March 2014, Ms Bachellier emailed {**RYD00003492**} Mr Maddison, Ms Williams and Mr Gibson, cc Mr Lawrence and Mr Blake, attaching, among others, a document called “*Cladding VE Options 18.03.14.pdf*” {**RYD00003491**} (“**Rydon’s Cladding VE Quotation**”).

18.4 Rydon’s Cladding VE Quotation quoted KCTMO the following potential savings if alternatives to Proteus HR Zinc were selected for use as the cladding panels:

<u><b>“Cladding Options</b></u>		<i>SAVING</i>
<i>Alternative Zinc System</i>	<b>cassette</b>	-£100,406.00
<i>Alternative Zinc System</i>	<b>face fixed</b>	-£202,372.00
<i>Alternative Aluminium System</i>	<b>cassette</b>	-£293,368.00
<i>Alternative Aluminium System</i>	<b>face fixed</b>	-
		<b>£376,175.00”</b>

18.5 There is no dispute that the savings offered to KCTMO were based on the savings that Harley quoted to Rydon, so that, for example, the saving of £376,175 that Rydon offered to KCTMO if “*Alternative Aluminium System face fixed*” were chosen was based on the saving of £576,973 that Harley offered to Rydon if “*Reynobond standard silver colour aluminium cladding (face fix)*” were chosen.

18.6 No decision regarding which cladding panels would be installed at the Tower was taken at this time. But the potential savings Rydon offered in the event that a cladding material other than Proteus HR Zinc was selected remained the same as the project progressed. For example, on 22 May 2014, Mr Lawrence emailed Ms Williams, cc Zak Maynard, attaching Rydon’s Cladding VE Quotation and stating in the body of the email:

“Good[] news hot of[f] the press, is that what we believed to be a more expensive ACM cladding finish (Natural Aluminium) isn't going to be. The manufacturers have confirmed that they are willing to supply it at the same price as the other ranges previously discussed. Therefore the savings stay the same as per attached. £293,368 (cassette) or £376,175 (face fixed).”

18.7 In oral evidence, Mr Lawrence agreed that he knew that he was passing on savings to KCTMO that were materially understated as compared with the savings that were offered to Rydon by Harley’s VE Quotation {**Day23/174:1–9**}. Counsel to the Inquiry repeatedly referred to the fact that Rydon offered KCTMO savings which were materially less than Harley had offered it in pejorative language: in Counsel to the Inquiry’s words, Rydon were “*pocketing the difference*” or “*pocketing the savings*”, (for

example, {Day23/163:16}, {Day23/168:14}, {Day28/193:11} and {Day55/49:14–15}) suggesting to witnesses that there was something underhand in Rydon’s actions.

- 18.8 The Inquiry should reject any implication or submission that Rydon acted improperly by not passing on the full savings available from its supply chain to its employer. The relationship between Rydon and KCTMO was an arm’s length commercial relationship. It was not a relationship in which Rydon was under a duty not to make a secret profit. KCTMO was, or reasonably should have been, aware that Rydon, in common with every other level in the construction supply chain, would charge a mark up on the materials and services it was contracted to supply.
- 18.9 The fact that Rydon might have been able, by making a profit on the savings offered by Harley, to recover an amount it had effectively lost elsewhere in the project due to an estimating error (as put to Steve Blake, {Day28/194:13–22}) only reinforces the conclusion that Rydon did not act improperly. Mr Blake’s evidence was that Rydon would never seek to pass this error on to the client: {Day28/165:24} – {Day28/166:5}. Consequently, if the error could not be recouped elsewhere on the project, Rydon would have absorbed the loss itself. This was not a situation in which Rydon was seeking to extract additional value from the client over and above what it had expected when submitting its tender.
- 18.10 Ms Williams stated in oral evidence that had she known that Rydon were proposing to retain some of the savings offered by Harley, she “*would have taken it up to my [...] managers*” {Day55/49:7}. But it does not follow from this that Rydon’s actions were improper. The likely consequence had Ms Williams (or others at KCTMO) been aware at the time is that KCTMO would have sought to negotiate further savings from Rydon, as is entirely normal in a commercial relationship where one party gains information it can use to its advantage to improve its end of the bargain made between the parties.

## CONCLUSIONS

- 18.11 There is no evidence whatsoever that, had Rydon passed on the full savings available, KCTMO (or anyone else on the project) would have made any different decision regarding the selection of the material for the cladding panels:
- (1) KCTMO was looking to reduce the price of the project as far as possible to bring it within its budget. Given that KCTMO was seeking to make savings of around £800,000 as against the tender price, it would always have selected one of the ACM options, as those offered the greatest savings. If Rydon passed on those savings in full, they would have only been more attractive for KCTMO, not less. The full savings offered by Harley for Reynobond Natural Zinc, face-fixed, were still less than the savings offered by Rydon to KCTMO for RB 55 PE in cassette.
  - (2) In any event, on the evidence there was little to no appreciation, including by the architects, Studio E, (Neil Crawford {Day10/164:19} – {Day10/165:12}) that composite material cladding panels were available with different cores or from what the core of the panels was made. Studio E’s NBS Specification did not specify FR-grade ACM and Arconic’s chosen route in the UK was to push RB 55 PE described and marketed by Arconic as its standard product.

Consequently, there can be no link between (a) Rydon's retention of some of the savings offered by Harley and (b) the selection of PE, as opposed to FR, ACM on the project.

- 18.12 Rydon emphasises that its own commercial interests were clearly not the reason that cassettes were chosen. It was in fact in Rydon's commercial interest to encourage KCTMO to select riveted standard silver RB 55 PE, as Mr Lawrence and Mr Blake agreed: {Day24/69:3–11} and {Day28/194:13–22}. Ms Williams's evidence was that she/ KCTMO was indifferent between riveted panels and cassettes: {Day55/42:5–9}. In the event, RBKC Planning's insistence on cassette-fixed panels was decisive. Rydon emphasises again that this decision was made with all relevant parties understanding that, as represented by Arconic and certified by the BBA at the time, RB 55 PE, in particular, in cassette form, was a material that was safe to use as rainscreen cladding on a high rise building.

## 19 REGULATION 38

### REGULATION 38 IN THE CONTEXT OF THE INQUIRY

- 19.1 Dr Lane's view is that "*regulation 38 hasn't really had a huge priority for some time*" {Day62/146:2–3}. Rydon suggests that this state of affairs had come about due to the difficulty for building owners, the construction industry, building inspectors and local authorities in understanding what was required by the regulations.
- 19.2 That difficulty is only emphasised by the differing views that the Inquiry's own experts have reached on crucial points regarding Reg 38 of the BRs, such as:
- (1) The identity of the "person carrying out the work" in Reg 38(2).
    - (a) Ms Menzies' primary view is that "*the building owner can be the person carrying out the works and therefore be responsible for compliance*": {BMER0000004}, para 90. Ms Menzies' alternative view is: "[...] *another potential candidate is the contractor, in this case, Rydon*": {BMER0000004}, para 511. Ms Menzies supported her primary view by reference to, among other things, case law authority, the fact that the building owner is the person who decides to carry out works and, to achieve the purpose behind the regulations, it is important "*the person who the LABCB enforces against is the person who is able to take action to correct any deficiencies*": {BMER0000004}, paras 89–92. A report of the case referred to by Ms Menzies at para 89 in support of her view can be found at (1993) 35 Con LR 65, in which Stuart-Smith LJ held, at 70, that the meaning of the words "the person carrying out work" is "*not limited to the person or contractor who physically carries out work, but includes the owner of the premises on which the works were being performed and who had authorised the work*."
    - (b) Dr Lane's view is that the person carrying out the work is "*the organisation with primary responsibility for and in primary control of undertaking the physical construction work*": {BLARP20000021}, para 2.18.3. In oral evidence, Dr Lane accepted Ms Menzies raised



“a very interesting point”, but confirmed that her view remained that the person carrying out the work was Rydon {Day62/123} – {Day62/125}.

- (2) Whether Grenfell Tower was a simple or complex building. Ms Menzies’ oral evidence was that “I wouldn’t say it was complex”: {Day60/185:12}. Dr Lane’s view is that it was a complex building: {Day62/130} – {Day62/131}. There is no dispute that App G of AD B did not define what amounted to a simple building and what amounted to a complex building.
- (3) Whether the external wall is within the scope of the Regulatory Reform (Fire Safety) Order 2005 (“RR(FS)O”), and so whether Reg 38 fire safety information needs to be provided in relation to the external wall. Mr Todd’s view is that it is not in scope, {CTA00000011}, paras 2.3–2.5 and 3.13–3.16, while Dr Lane’s view is that it is {BLARP20000032}, paras 1.1.17–1.1.31. The Fire Safety Bill will amend the RR(FS)O so that the external wall is expressly within its scope. Rydon notes the London Fire Commissioner’s submission that “*whether these amendments can properly be understood as clarification or extension of the scope of the RRO, they have in reality been received as changes [...]*” {Day115/36:7–9}.

19.3 Given that suitably qualified experts may reasonably reach differing views on the above points and others, the same holds true to an equal or greater extent for those involved in the Grenfell Tower project. Further, the Inquiry need not reach conclusions on which expert’s evidence is to be preferred on each individual point. What the Inquiry can safely conclude from the existence of a range of expert views is that the scheme of regulation in this regard was unsatisfactory in the state it was in prior to the fire. The Inquiry should be slow to criticise those involved in the project for any difficulties they had in understanding the scope and extent of the duties it imposed. To the extent that the regulatory scheme remains unsatisfactory today, Rydon supports the Inquiry making recommendations as to how it ought to be amended to ensure the aim and purpose behind the regulations is achieved.

## INTERPRETATION OF REGULATION 38

- 19.4 Statutory interpretation of Reg 38 is a question of law. To this extent, it is not the Inquiry’s task to choose between the competing views of non-legally qualified experts. Three particular issues of interpretation should, however, be highlighted.
- 19.5 First, at para 10.1.5, Dr Lane’s Reg 38 report {BLARP20000021} states that: “*Ultimately this is about full communication of the final as-built condition of the works to the responsible person.*” This interpretation of what Reg 38 requires is overly expansive and would lead to difficulties in practice. Under Reg 38, the person carrying out the works is required to give the responsible person “*information relating to the design and construction of the building or extension, [and so on] which will assist the responsible person to operate and maintain the building or extension with reasonable safety*” (Reg 38(3)(a)). That is a less expansive and more practical formula than the formula for which Dr Lane contends, a conclusion which is supported by the practical consequences of the deadline for compliance:

- (1) Regulation 38(2) provides: *“The person carrying out the work shall give fire safety information to the responsible person not later than the date of completion of the work, or the date of occupation of the building or extension, whichever is the earlier.”*
- (2) Where occupation takes place prior to completion, it is impossible for the fire safety information provided not later than the date of occupation to reflect the final as-built condition, save for in rare cases where no changes at all to the plans are made during the construction phase.
- (3) Where occupation takes place after completion, it will still be impractical, in most cases, for the fire safety information provided *on or before* the completion date to reflect the final as-built condition.

19.6 Second, and as Dr Lane correctly accepted in oral evidence {Day62/139:22} – {Day62/140:1}, the person carrying out the work need not re-provide information that is already in the possession of the responsible person. It follows that: (1) information that Rydon provided to KCTMO during the construction phase which assisted KCTMO in operating and maintaining the building with reasonable safety was fire safety information; (2) the provision of such information amounted to the discharge, by Rydon, of any duty it held under Reg 38, regardless of whether such information was provided again toward the end of the project; and (3) at no time was there a duty to (re-)provide KCTMO information it already had in its possession, such as Exova’s fire safety strategies.

19.7 Third, at para 9.5.3 of her Reg 38 report, Dr Lane states:

*“Specifically, relevant to Grenfell Tower is the case where a material change of use is made to part of a building. Regulation 6(2)(a) makes clear in this case that any part of the building in which works associated with the material change of use have been undertaken must comply with Parts B1, B2, B3, B4(2) and B5 of Schedule 1.”*

19.8 But Dr Lane’s paraphrasing of Reg 6(2)(a) is inaccurate. In particular, by referring to *“any part of the building in which works associated with the material change of use have been undertaken”*, Dr Lane significantly broadens the scope of Reg 6(2)(a) from the provision as enacted. Regulation 6(2)(a) in fact provides:

*“Where there is a material change of use of part only of a building, such work, if any, shall be carried out as is necessary to ensure that—*

- (a) that part complies in all cases with any applicable requirements referred to in paragraph (1)(a);”*

19.9 That provision, as is plain, is limited to the part of the building where there has been a material change of use, such as, in the case of Grenfell Tower, the new flats on the lower floors. It does not extend to all parts of the building where works *associated* with the material change of use have been undertaken. In the case of an occupied refurbishment, such as the Grenfell Tower project, extending the Reg 38 duty to parts of the building where there has not been a material change of use would also lead to paradoxical results, since the deadline for compliance under Reg 38(2) would never be capable of being met.

## OPERATIONAL FIREFIGHTING

19.10 There was no requirement for Reg 38 fire safety information to be made available to firefighters for operational purposes during a fire, as Dr Lane agreed {Day62/203:24} – {Day62/204:2}. What Dr Lane said she believed was required for operational firefighting was that the responsible person should be able to make “*very basic information [...] available rapidly*” {Day62/208:7}, which Rydon understands to refer to a small subset of all of the information held by the building owner, rather than the full Reg 38 information, the Operations and Maintenance (“O&M”) Manual or the Health and Safety (“H&S”) File. There is no legal requirement for the H&S File to be available in these circumstances either, as Dr Lane again agreed {Day62/205:21} – {Day62/206:6}.

19.11 Dr Lane also confirmed that she was not offering a view on what difference would have been made by the provision to the fire brigade of such information on the night of the fire {Day62/208:14–23}. Given that the fire reached the roof and started to spread horizontally at 01.27, only 28 minutes after the first firefighters reached the Tower: Phase 1 Report, para 2.11. Rydon submits that the Inquiry can safely conclude that in the period between arriving at the Tower and the fire reaching the roof:

- (1) there was no opportunity for the firefighters to review anything more than very basic information; and
- (2) it was necessary for any such information to be already in LFB’s possession for it to be reviewed within this timeframe.

## INFORMATION CONTAINED IN THE O&M MANUAL AND/OR H&S FILE

19.12 Dr Lane has referred in her reports to specific duties under the Construction (Design and Management) Regulations 2007 and, from Oct 2015, the Construction (Design and Management) Regulations 2015 (the “CDMRs”). With limited exceptions, the CDMRs apply during construction works and, as such, are not understood to be relevant to the causes of the Grenfell Tower fire. Save for Dr Lane’s opinions on the H&S file, the CDMRs have not been examined in depth by the Inquiry such that evidence has not been heard to enable any findings to properly and fairly be made as regards compliance or otherwise with other duties under the CDMRs. Under the CDMRs, the duty to compile the H&S file rested with the CDM Coordinator, Artelia, and latterly, the Principal Designer, KCTMO, albeit that the Inquiry has heard evidence as to Rydon’s role in the provision of information for the H&S file.

19.13 As Claire Williams stated in her oral evidence:

“[...] the building contract, as I say, only covered elements of the building, it didn’t cover the whole building. So Rydon could never give total information for the health and safety file because they were only involved with certain areas.” {Day56/133:9–13}

19.14 Further, as Ms Williams agreed, Rydon’s instruction was limited to matters concerning the refurbishment and the remainder of the H&S File was to be provided by KCTMO {Day56/134:16–25}. Dr Lane agreed that it was normal and “*absolutely fine*” for Rydon to subcontract the preparation of the O&M Manual to All Group Holdings {Day62/153:20–21}.

- 19.15 The information contained in the building manuals regarding the cladding, insulation and other materials installed in the building envelope, necessarily relied on the datasheets and other literature provided by the manufacturers, including Arconic, Celotex and Kingspan, and certificates of compliance issued by the BBA, LABC and other bodies. The evidence from Module 2 indicates that such information was at best, of little value, and in many important respects was positively misleading. The information would not have assisted the LFB on the night of the fire and it would have misled those assessing the risk of fire prior to 14 June 2017 – albeit there is no evidence of KCTMO relying on any aspect of the building manuals in relation to its fire safety arrangements in advance of the fire or reviewing them, for example, on receipt of the LFB’s letter relating to the Shepherd’s Court fire.
- 19.16 In any event, Rydon cannot fairly be criticised for the presence of this inaccurate or misleading information in the building manuals. The operative reason for the selection and installation of materials which were, in reality, non-compliant – and for RBKC BC subsequently signing off the works as compliant – was the manufacturers’ successful campaigns of deceit on the industry as a whole. Had it not been for that deceit, the materials would not have been installed on the building in the first place and the inaccurate information would not have been supplied as part of the building manuals.

## CONCLUSIONS

19.17 Rydon contends:

- (1) It follows from, among other things, the fact that the Inquiry’s own experts have reached a range of reasonably differing views on the scope and extent of the duties under Reg 38 and related legislation and guidance that:
  - (a) those duties were not adequately defined to achieve their aims; and
  - (b) the Inquiry should be slow to criticise those involved in the Grenfell project for any difficulties they had in understanding the scope and extent of those duties.
- (2) Statutory interpretation of Reg 38 is a question of law. Dr Lane’s interpretation of Reg 38 is overly broad and goes beyond the language of the relevant statutory provisions.
- (3) There was no requirement for Reg 38 fire safety information (or the O&M Manual or the H&S File) to be made available to firefighters for operational purposes during a fire.
- (4) In the 28-minute period between their arrival at the Tower and the fire reaching the roof, there was no opportunity for the firefighters to review anything more than very basic information; and it was necessary for any such information to be already in LFB’s possession for it to be reviewed within this timeframe.
- (5) Rydon cannot fairly be criticised for the presence, in the building manuals, of inaccurate information regarding the fire safety of materials used in the building façade. Rydon reasonably relied on information in the manufacturers’ literature and independent certificates which, the evidence in Module 2 has shown, were misleading and/or materially inaccurate.



## **20 CONCLUSION**

- 20.1 Rydon's position in the contractual chain makes it a focus of attention. It cannot, however, be blamed for the dishonest behaviour of Arconic, Celotex and Kingspan. The use of their unsafe and dangerous products at Grenfell was not only the foreseeable, but the intended consequence of their commercial objectives – to sell what they knew to be unsafe and inappropriate products into the above 18m market. Rydon was presented with a specification decided by others. It was reasonable, and in accordance with the then and indeed current industry practice, for Rydon to subcontract tasks required of it under its contract with KCTMO. It was reasonable for it to delegate the responsibility of complying with the BRs to architects, Studio E, and specialist cladding subcontractors, Harley. Rydon was also aware of the involvement of Exova, well known fire consultants. Exova did not warn Rydon or indeed anyone of the dangers of using RB 55 PE or Celotex FR/RS5000 either alone or in combination. If Studio E or Harley considered that the project needed any further input from a fire consultant either could easily have said so. It was also commonplace for contractors such as Rydon to expect Building Control to have particular knowledge of the requirements of the BRs and the ADs and to advise and/or refuse approval in the event of non-compliance. In this case Building Control did not. It was reasonable for Rydon to proceed on the basis that there had been compliance with the BRs which would have resulted in a safe building.
- 20.2 Without detracting from the entirety of Rydon's Opening and Closing Submissions, the Inquiry is respectfully asked to consider these particular contextual factors when assessing the responsibilities and conduct of Rydon throughout its involvement leading up to the dreadful tragedy on the night of 14 June 2017.

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**28 May 2021**