

**IN THE MATTER OF THE INQUIRIES ACT 2005
AND IN THE MATTER OF THE INQUIRY RULES 2006**

THE GRENFELL TOWER INQUIRY

**FIRST WITNESS STATEMENT OF BRUCE SOUNES
ON BEHALF OF STUDIO E ARCHITECTS LIMITED**

I, Bruce Alexander SOUNES, Associate at Studio E Architects Limited, 90A Tooley Street, London SE1 2TH, WILL SAY AS FOLLOWS:

A INTRODUCTION

1. I would first like to express my deepest sorrow and sympathies for the victims of the Grenfell fire. My horror at seeing the images early on the 14 June 2017 will never leave me and would have been nothing compared to those living in the tower, nor those who lost family and friends that morning, nor those in the area who were clearly affected by the fire. The tragedy on the night and community response in the days and weeks that followed has affected me very deeply, as it has many others.
2. I am an associate of Studio E Architects Limited (SEAL) and registered architect with the Architects Registration Board (No. 065109E). At all material times up to around July 2014, I was also an associate at Studio E LLP (SELLP).
3. Between 2011 and 2016, SELLP and then SEAL (where the context permits I use **we**, **our** or **Studio E** to refer to the relevant entity) was retained in relation to the refurbishment (the **Project**) of Grenfell Tower (the **Tower**) for the Royal Borough of Kensington and Chelsea Tenant Management Organisation Limited (KCTMO). I make this witness statement on the basis of information obtained in that context.

4. This is the first witness statement that I have made to the Grenfell Tower Inquiry (the **Inquiry**) examining the circumstances surrounding the tragic fire at the Tower on 14 June 2017 (the **Fire**). The purpose of this witness statement is to respond to the request for evidence made of SEAL under rule 9 of the Inquiry Rules 2006 dated 5 June 2018 by the Inquiry. I am authorised by SEAL to make this witness statement.
5. I understand that the Inquiry's examination of these circumstances is still underway. The Inquiry has not yet determined which aspects of the Tower's design, construction and recent refurbishment played a significant role in enabling the Fire to occur and spread in the way that it did, so it is not yet known which design and/or construction decisions played a bearing on the exposure of the building to the risk of such a Fire. I understand this is why the Inquiry has asked me very broad and open ended questions about Studio E's work on the Project.
6. I am also conscious that, because I was involved in the Project for over five years, to provide an exhaustive witness statement addressing every decision and discussion on the Project would be nearly impossible. Studio E has however responded to various requests for documentation relevant to the Project from the Inquiry by providing a significant volume of documentation, which should assist to give a detailed narrative to various aspects of the Project. In this statement therefore, while I have taken a necessarily wide approach, it is likely that I will not have addressed all aspects of my involvement in the Project to the same level of detail as others. I have instead sought to focus on the issues that I believe are of particular interest for the Inquiry, having considered various sources of information from the Inquiry, including aspects of Dr Lane's Phase 1 Report dated 12 April 2018. These include the development of the cladding solution and interactions with the Royal Borough of Kensington and Chelsea (**RBKC**), **Building Control (Building Control)**. I have provided less detail for other areas, such as the layout of the lower four floors and the date and details of every meeting and visit I took part in, although this is not to say that this means issues such as the latter were of any less significance to me or the Project at the time. I believe that the Inquiry's interests will continue to develop, and if I can assist the

Inquiry in understanding any particular aspect of the Project in further detail in due course, I hope that I will be given the opportunity to do so.

7. As the events in question date back to 2011, I have been assisted in the preparation of this statement by looking back at some of the documents which SEAL disclosed to the Inquiry. As the Inquiry had not started its Phase 2 disclosure as at the date of this statement, I have not had access to what I understand will be the majority of documents held by the other parties involved in the Project. This statement is therefore based on my recollections and SEAL's documents. Accordingly, I may need to update my statement to reflect any new evidence in due course.
8. The facts and matters set out below are within my own knowledge unless I expressly state otherwise. Where facts and matters are not within my own knowledge, I cite the source(s) of the information.
9. In this witness statement, I refer to various documents primarily in two ways. Where I understand the document will be made available on the Inquiry's electronic platform, I have referred to it by its "*Unique ID*" on the platform, in bold curled brackets in the format **{XXX00000000}**. For other documents, I have annexed them at exhibit **BSI**. References to pages in this exhibit are given in bold curled brackets, in the format **{BS1/pagenumbers}**. In the preparation of this witness statement, including annexed documents, I have been assisted by Studio E's solicitors.
10. Before signing this statement, I have not read the witness statements of Tomas Rek, Andrzej Kuszell or Neil Crawford for the Inquiry. This witness statement should be read in conjunction with that of my colleagues Andrzej Kuszell (**Andrzej**), Neil Crawford (**Neil**) and Tomas Rek (former):
 - 10.1 Andrzej was engaged with the Project at a strategic / high-level. He was also involved in a separate project on which SELLP was appointed on a site immediately north-east of the Project, which was known as the Kensington Academy and Leisure Centre (**KALC**). It was through SELLP's involvement with KALC that we came to be involved in the Project. Many of the KALC design team also worked on the Project and

the public realm works on KALC extended up to the Tower and the Estate (defined below).

10.2 Neil was involved directly with the Project, under my supervision. He started working on the Project around summer 2014, when the Project entered the construction phase. As a result, in terms of chronology it may be useful to read Andrzej's witness statement before reading mine and Neil's witness statement after having read mine.

10.3 Tomas was involved directly with the Project, under my supervision, mainly in autumn 2013.

11. In this witness statement, I have used headings, numbering sequences and defined terms for convenience and to assist the reader in navigating this document only. In that regard, I have divided this witness statement into nine parts, each with multiple further sub-headings:

- A Introduction
- B Project overview
- C February 2012 to August 2012: original planning application
- D September 2012 to October 2012: Resubmitted planning application
- E November 2012 to April 2013: Project placed on hold
- F May 2013 to August 2013: Project reinvigorated
- G August 2013 to November 2013: Technical design and preparation of Employer's Requirements
- H December 2013 to March 2014: Tender process
- I April 2014 to 2016: Production information and construction

A1 Location and orientation

12. The Tower sits at the northern end of the Lancaster West Estate (the **Estate**), in North Kensington, London. The Estate consists of the Tower and three finger blocks (Testerton, Hurstway and Barandon Walks), I believe they were so called because they extend 150m south from the Tower like fingers {SEA00008054_0013}.
13. The area to the immediate east of the Tower is Lancaster Green, and there was a children's play area to the immediate west. The London Underground viaduct is 70m to the west of the Tower and the Latimer Road Underground Station is a 200m walk from the entrance to the Tower. The KALC project is located to the north (**Academy**) and to the east (**Leisure Centre**) of the Tower {SEA00008054_0014}. There are a series of garages opposite the base of the Tower.
14. The original design concept for the Estate was to keep vehicle and pedestrian traffic separate by having pedestrian access across the site on a walkway level (one storey above ground level). There were originally entrances to the Tower at Walkway and ground level. However, in the early 1990s I understand that the finger blocks were divided into a series of independent blocks, each with its own secure entrance, and Walkway level access to the Tower was closed off and residents accessed the Tower from the ground level only {SEA00008054_0015}.
15. Before the Project, the Tower was a concrete structure with aluminium windows. For the upper 20 storeys precast concrete cladding had been used: one panel type served as a structural spandrel under the windows (horizontal) and the other was a decorative facing to the triangular pilasters, each a full storey height of 2.6m (vertical). This system sets up a simple visual language of modular elements: horizontal rough, washed aggregate for the spandrels, lighter and sharper detail on the vertical columns, and aluminium framed “strip glazing” between. The infill panels between each window were a smooth white panel so that the assembly reads as a light weight infill in a concrete frame. The perimeter columns have been rotated by 45° to read as diamonds in plan, and this generates

the distinctive triangular pilasters running the full height of the building
{SEA00008054_0021} {SEA00003561}.

16. Compositionally, the Tower was divided into {SEA00006652}:

16.1 At the base, four lower levels comprising from lowest to highest the Ground, Mezzanine, Walkway and Walkway+1 levels (the **Podium**) {SEA00008050_0003};

16.2 In the middle, the 20 residential floors each having typically four two bedroom apartments (located on the corners) and two one bedroom apartments (on the east and west faces). I believe several of the two bed flats had been converted into 3 beds by subdividing the living room (the **Upper Floors**); and

16.3 At the top, the plant room and pre-cast “crown” of tapered pilasters and ring of perforated freestanding beams (the **Crown**) {SEA00003634}.

A2 Experience and qualifications

17. I have worked at Studio E since 2000 and was made an associate of the practice in 2005. My early experience at Studio E involved a range of educational and sports and leisure projects. Further details are set out in my CV, attached **{BS1/1}**. Before joining Studio E, I worked at KSR Architects (1998-2000) and Arcotek (1995-1998).

B PROJECT OVERVIEW

18. In this section I:

- 18.1 Explain that Studio E's role on the Project and our relationship with other parties changed as the project moved from design to construction;
- 18.2 Provide an introduction of Studio E's appointment documents and parties with which we worked Pre-Contract (defined below);
- 18.3 Provide an introduction of Studio E's appointment documents and parties with which we worked Post-Contract (defined below);
- 18.4 Describe my understanding of the Project objectives; and
- 18.5 Describe my view of the design milestones on the Project, from an architect's perspective.

B1 Studio E's role on the Project and our relationship with other parties changed as the project moved from design to construction

19. I have outlined this context to assist the Inquiry in understanding the key phases of the Project, before it considers the more detailed aspects of my statement, in order to better understand who Studio E was appointed by at the relevant time and to which entity it was providing its services.
20. I should also say that my summary of Studio E's relationships, whilst intending to be as helpful as it can be, is necessarily retrospective as the relationships developed across various correspondences rather than being contained in a single document. In my experience this is not uncommon on construction projects.
21. While Studio E was engaged for the Project, our involvement was divided into phases in which we performed different roles for different parties, first for KCTMO and then for Rydon (this is a slight simplification but a convenient way of referring to the switch of client and change of duties over time):
- 21.1 Studio E worked for KCTMO from around December 2011 until around April 2014 (**Pre-Contract**); and
- 21.2 Studio E worked for Rydon Maintenance Limited (Rydon), the main contractor, from around April 2014 until completion of the Project (**Post-Contract**).
22. I have used the words "Pre-Contract" and "Post-Contract" to refer to the periods before and after KCTMO would have entered into a relationship with the main contractor to construct the project under a design and build contract (or precursor to it). There was a brief period before construction commenced when we were working directly for both parties.
23. "*Design and build*" is the term used for a type of construction contract that was used on the Project, and which is widely used in the UK. It is perhaps necessary to say a few words about how these contracts operate, to provide some context for readers without a construction background:

- 23.1 Under design and build, the ultimate client (the **Employer**), contracts with a construction company (the **Main Contractor**), to design and deliver the project. The key difference with a ‘traditional’ building contract is that the Main Contractor assumes full responsibility for the design, in addition to actually constructing the building. Under a ‘traditional’ building contract, the client’s design team are responsible for the overall design and instructing the contractor what to build.
- 23.2 Before appointing the Main Contractor, the Employer has to define its requirements for the project, and one way is by working with consultants to prepare a document, or set of documents, which are referred to as the Employer’s Requirements. The Employer then undertakes a tender process and once a Main Contractor is selected it is often the case that the Employer’s original design team are transferred to the Main Contractor as a way of maintaining continuity.
- 23.3 Once the contract is agreed the Main Contractor's obligations are to complete the project by the completion date and in accordance with the specifications. To satisfy the latter point the Main Contractor is required to submit its design proposals (the **Contractor’s Proposals**) to the Employer for comment.
- 23.4 In a design and build contract, the responsibility for obtaining statutory approvals is passed on to the Main Contractor as well, the two most significant being the discharge of outstanding planning conditions and building control approval. Under a ‘traditional’ building contract this responsibility usually remains with the Employer or its representatives.

B2 Pre-Contract

24. I believe our work followed the Royal Institute of British Architects (RIBA) Plan of Work as defined at the time. We took the KCTMO brief and prepared designs for refurbishment and alterations to the Tower. This was done with collaborative input from the other consultants with the objective of submitting and securing planning permission for the building work. We also prepared tender information so that KCTMO could invite priced bids from building contractors. In my experience this is how many building projects are procured in the UK.
25. I will explain in further detail how the appointment of Studio E was negotiated, but I consider that a key document in relation to this relationship is the RIBA Standard Conditions of Appointment, and appendices, which I initially prepared and sent to KCTMO on 12 June 2012 {SEA00004561} and 11 November 2013 {SEA00009820} (the **KCTMO Appointment**). My understanding of the KCTMO Appointment is that Studio E was to perform the services set out in the enclosures to the KCTMO Appointment, including, as requested by KCTMO, to assist in finalising brief and feasibility options, outline design proposals (RIBA Stage C), detail design including planning submission (RIBA Stage D) and technical design (RIBA Stage E) and preparation of the Employer's Requirements. I note that, whilst Studio E provided some services consistent with the role of lead consultant under the KCTMO Appointment, there may have been some duplication with Artelia's scope of work.
26. From the documents within Studio E's possession I do not know whether the KCTMO Appointment was ever in fact signed by Studio E and / or KCTMO. I cannot specifically recall Studio E signing the documents and nor do we have a completed copy on file. That said I consider that the services Studio E provided in the Pre-Contract phase were consistent with those services identified in the KCTMO Appointment.
27. In the Pre-Contract phase SELLP appointed the following subconsultants:
- 27.1 Matthew Wigan Associates to provide landscape architectural services;
and

- 27.2 David Bonnett Associates to provide access consultancy services
28. For the purpose of providing its architectural services Pre-Contract, SELLP had direct interaction, to a greater or lesser extent, with the following entities:
- 28.1 Artelia UK (previously Appleyards) (**Artelia**), engaged by KCTMO, as CDM coordinator, employer's agent, project manager and quantity surveyor;
- 28.2 Max Fordham LLP (**Max Fordham**), engaged by KCTMO, as the building services engineer;
- 28.3 Curtins LLP (**Curtins**), engaged by KCTMO, as the structural engineer;
- 28.4 Exova Warringtonfire (**Exova**), engaged by KCTMO, as fire consultant. Looking back, Exova produced three outputs during my period of involvement on the Project, which were (i) in 2012, preparing a written fire safety strategy for the Tower in its pre-refurbishment condition (the Existing Fire Safety Strategy or **EFSS**), (ii) providing mark-ups and comments on plans such as to identify the fire separation ratings for internal walls and doors at Podium level, and (iii) in 2012-2013, preparing a written fire strategy for the Tower after refurbishment (the Outline Fire Safety Strategy or **OFSS**). Regarding the **OFSS**, Exova issued the final version of it that I have seen in November 2013, shortly before finalisation of the tender documents. From Studio E's perspective, the **OFSS** should have identified the fire related issues which could have potentially undermined the development of the plans for the Project (to ensure a high standard of fire and life safety for the occupants of the Tower, whilst highlighting any areas of the Tower's design that may represent an approvals risk, including determination of any external fire spread issues that there may be and the impact this may have on the architectural design). Exova was the fire consultant involved in KALC:
- 28.5 Jane Simpson Access Ltd, engaged by KCTMO, to provide access consultancy services;

- 28.6 Churchman Landscape Architects Limited (**Churchman**), engaged by KCTMO, to provide landscape architectural services;
- 28.7 IBI Group / Taylor Young (**IBI**), engaged by KCTMO, as planning consultant; and
- 28.8 Leadbitter. Leadbitter is a main contractor, and had been involved on the adjacent KALC project, as discussed in more detail in Andrzej's statement. Studio E was not involved in any appointment of Leadbitter to the Project. To my knowledge, Leadbitter did not undertake any substantive works on the Tower. For roughly the first year of the Project, my understanding was that KCTMO intended to eventually appoint Leadbitter as the design and build contractor for the Project. Leadbitter (which I understand was acquired by Bouygues at some point) was involved in attending project meetings, for example, during 2012. KCTMO may have appointed Leadbitter under a pre-contract service agreement, or PCSA, at some point during 2012. By the end of 2013, Leadbitter was no longer involved in the Project, I believe because they were not offering a price acceptable to KCTMO.

B3 Post-Contract

29. Post-Contract, Studio E was appointed by Rydon to provide architectural services throughout the construction stage of the Project. Rydon are a design and build contractor which I understood to have a speciality in refurbishing affordable housing, including high-rise residential towers.
30. Initially, Rydon engaged SELLP under the same terms as the KCTMO Appointment (but for only those services that related to the construction stage), for a short period of time in June and July 2014. However, and as set out in further detail below, after SELLP became insolvent, Rydon engaged SEAL to continue on the Project.
31. I believe that SELLP's appointment with Rydon took the form of a novation, although I do not have any documents that evidence this. I do not recall specifically when this would have occurred, but essentially SELLP's obligations transferred from KCTMO to Rydon through the legal process of "*novation*". Studio E's solicitors have advised me that novation is a technical legal term used to describe a substitution of a new contract in place of an old one.
32. Throughout the Project, I also used the word 'novation' other than in its technical legal sense, to describe the point where Studio E's client switched from KCTMO to Rydon. It is a term commonly used in the construction industry to refer to the process where contractual rights and obligations are transferred from one party to another.
33. SEAL's appointment documentation with Rydon was not formalised until towards the end of the Project, which in my experience is not unusual. This was despite me seeking to discuss Studio E's appointment documentation with Rydon during 2014 (eg. {SEA00011594}). I was aware from early conversations with Simon Lawrence that it was Rydon's intention that SEAL would have less of an intensive role than SELLP had under the KCTMO Appointment. In my experience design and build contractors are diverse in the level of service they require from their architects. It was not until late 2015/early 2016 that Rydon moved to finalise Studio E's appointment documentation.

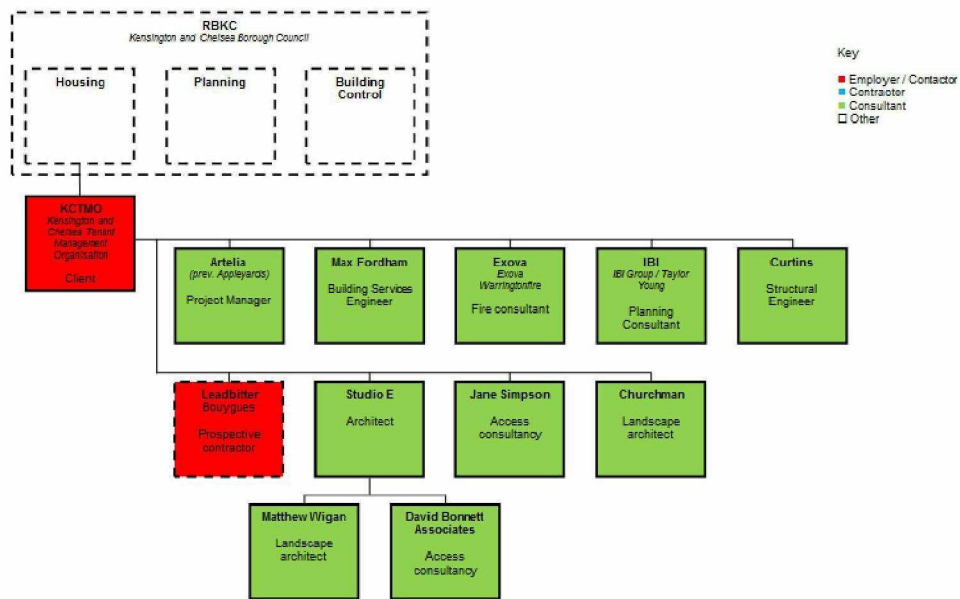
34. I will refer in further detail to the correspondence regarding Studio E's engagement, but I understand that key documents in relation to this relationship are the appointment between Rydon and SEAL dated 3 February 2016 {BS1/2-17} (the **Rydon Appointment**) and the undated collateral warranty between SEAL, KCTMO and Rydon {BS1/18-26}.
35. Studio E's role during the Post-Contract (RIBA Stages F & K) included coordinating the detail design of others, including the engineers and specialist subcontractors, liaising with Planning and Building Control to achieve statutory approvals and responding to site queries. I understand that my colleague Neil Crawford will cover the majority of this phase of Studio E's engagement in his witness statement.
36. For the purpose of providing its architectural services Post-Contract, SEAL had direct interaction, to a greater or lesser extent, with the following entities:
- 36.1 All the entities listed at paragraph 28 above, save for Leadbitter. We understand there was an intention to novate the appointment of Curtins to Rydon, and that Artelia would have been identified as the Employer's Agent under the Building Contract between Rydon and the KCMTO. I understand that Max Fordham and IBI were retained by KCTMO;
- 36.2 RJ Electric Solutions Limited, engaged by Rydon as electrical subcontractor;
- 36.3 PSB UK Ltd / Witt UK Group, engaged by Rydon as ventilation subcontractor;
- 36.4 **Harley Facades Limited (Harley)**, engaged by Rydon as the specialist cladding and window subcontractor;
- 36.5 JS Wright & Co. Limited, engaged by Rydon as the services subcontractor;
- 36.6 Silcock Dawson & Partners Ltd, engaged by KCTMO as the mechanical and electrical clerk of works;

36.7 John Rowan and Partners, engaged by KCTMO as the clerk of works;
and

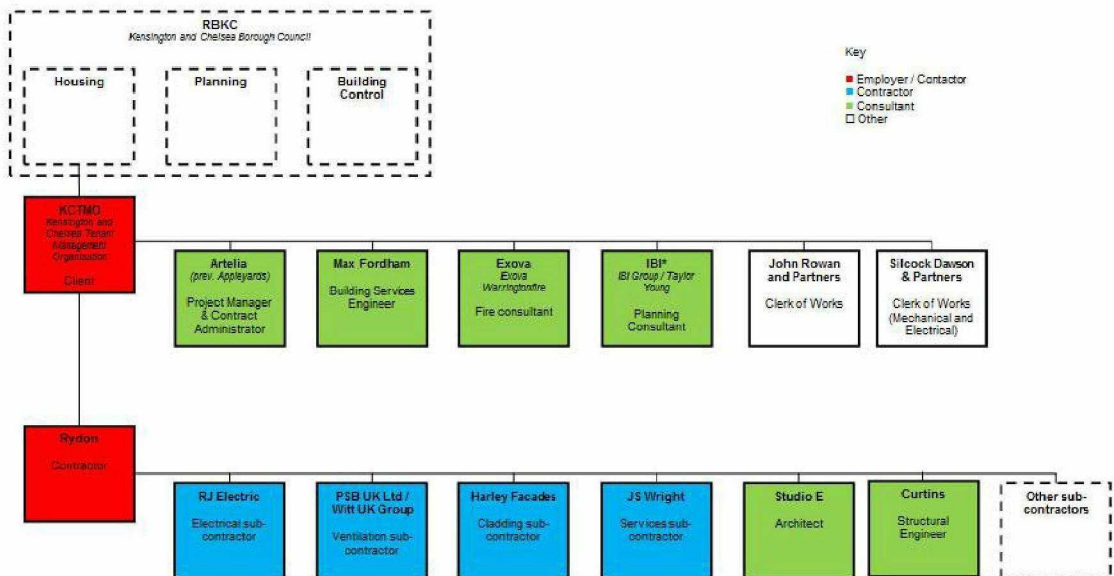
36.8 Building Control.

37. Exova, however, was an exception. To the best of my knowledge, Rydon did not take over Exova's appointment from KCTMO Post-Contract. However, we approached Exova on behalf of Rydon on a number of occasions Post-Contract for discrete advice (for example, see section I below). To the best of my knowledge, there were no other fire consultants involved in the Project.
38. There was a short period, around June 2014, when Studio E worked for KCTMO and Rydon in parallel. This was when we were asked by KCTMO to provide support for its application to change the proposed offices on the Mezzanine and Walkway levels into additional residential units. Again, in my experience, such a situation is not uncommon on projects procured in this way.
39. To assist, Studio E's solicitors have prepared two diagrams representing the main parties involved on the Project. The first diagram represents the key contractual relationships prior to Rydon's appointment, with the second diagram representing the key contractual relationship after Rydon's appointment. While I did not prepare these diagrams they represent my understanding of the relationships that they are intended to represent.

1: Key relationships prior to Rydon's appointment



2: Key relationships after Rydon's appointment



B4 My understanding of the Project objectives

40. KCTMO emailed us the brief for the Project on 29 February 2012 {SEA00000007} and the rationale for the refurbishment and development of the design is explained in Studio E's Stage C {SEA00006429} and Stage D reports {SEA00008054}.

41. Our Stage C report was published in October 2012, and includes:

41.1 the brief {SEA00006429_0010};

41.2 the design approach for the Podium levels {SEA00006429_0016} and the overcladding {SEA00006429_0027}; and

41.3 copies of reports from other members of the design team {SEA00006429_0002}.

42. Our Stage D report was published in August 2013, and includes:

42.1 an ongoing record of work undertaken post RIBA stage C {SEA00008054_0007};

42.2 the design approach for the Podium levels {SEA00008054_0019} and the overcladding {SEA00008054_0021};

42.3 copies of reports from other members of the design team {SEA00008054_0003}, although some packages were out of date due to changes to the planning drawings and therefore not included {SEA00008054_0005}.

43. I have also summarised the key factors for this statement:

Cladding

43.1 The Tower and wider Estate were heated by 1970s boilers located in the basement which were expensive to maintain and at risk of failure {SEA00003896}. The windows to the Tower were draughty and thermally inefficient and in poor condition. Sustainability was a key objective of the Project and Max Fordham proposed a holistic approach: reduce the load on the

system by replacing the windows and overcladding the building with insulation. Together these measures would improve the air tightness as well and bring the tower up to current standards. It would lead to reduced energy use, improved comfort, individual metering and heating control could be added for each flat, and there would be reduced costs, both in terms of KCTMO maintenance and residents' heating bills {SEA00006429_0074} {SEA00005063}.

43.2 Although it would have been possible to add insulation internally rather than externally and meet the thermal requirements, the impact on the interiors, particularly the reduction on room sizes would have been very detrimental to residents. Insulation on its own is not suitable as an exterior finish to a building; so in addition to the new windows we needed to find an external cladding system to cover the external insulation {SEA00006429_0082}.

43.3 During the early consultation phase residents commented on their experience of living in the Tower and complained about overheating in the summer and the lack of control of the heating in the winter. The proposals were for a completely new heating system: new boilers, heat interface units, radiators and associated pipework {SEA00006429_0087}.

43.4 Studio E's tender specification for the overcladding to the Tower was based on an aluminium – zinc honeycomb panel and Celotex FR5000 insulation. The choice of zinc facing, and the specific colour, was a strong preference of mine and was supported by Planning Officers through the prolonged planning period. I felt the original design and construction of the Tower had some architectural integrity and merit. I wanted to be sympathetic to it by covering up the existing concrete with a similarly robust, durable and natural material which would weather well over many years. A painted or coated aluminium product may perform functionally for a similar period but the coating and appearance would deteriorate. Most product literature warrants the colour fastness for metal coatings for 15-20 years only, at which point KCTMO could have been considering a cosmetic upgrade once again.

43.5 When we started work KCTMO did not emphasise cost as an overriding consideration and the first cost plan prepared by Artelia allowed for VMZinc

{BS1/116-119}. The client indicated they were comfortable with this estimate and we went on to present zinc to Planning and residents {SEA00004648}. A zinc finish is mentioned in our reports and the Design and Access Statement included with the Planning Application.

- 43.6 In the months and weeks leading up to the finalisation of our tender information KCTMO had discussed the possibility of 'value engineering' the zinc for something else. All our investigations to date had pointed to ACM as being the most popular and cost effective product for overcladding. We agreed with Artelia that our specification and the tender documents would include provision for costed alternatives for ACM panels and VM Zinc composite.
- 43.7 The level of insulation on the building was originally proposed by Max Fordham at the Project Meeting on 25 June 2012 . They proposed a U-value of 0.15 W/m²K. A U-value is a measure of heat transfer, in this case of a solid area of external wall. A lower U-value means less heat transfer and therefore better thermal performance. The two most significant factors which determine U-value are the insulation type and thickness. We responded by email that a U-value of 0.15W/m²K might be “*aspirational*” because the literature for Rockwool, a mineral wool based insulation product commonly used in the construction industry, did not appear to envisage target U-values of less than 0.2 W/m²K {SEA00004973}. Rockwool responded to an enquiry we made on this point as follows: “*the thickness (of mineral wool) needed would be exceptionally high ... beyond ... sensible building practice*”.
- 43.8 However, I had worked with Max Fordham since I started at Studio E and have undertaken many successful projects with them. They pride themselves on an integrated and holistic approach to environmental services and this has often meant exceeding minimum requirements to maximise sustainable energy use on a project. They are aspirational engineers and this is one of the reasons why we worked with them.
- 43.9 Max Fordham provided their assessment on 16 August 2012: to achieve a U-value of 0.15W/m²K they proposed 150mm rigid foam insulation on the walls, 100mm on the columns and 125mm behind the solid infill panels between the

windows. The email included a product datasheet for Celotex FR5000 (conductivity of 0.021 and a PIR based insulation product). PIR (also called polyisocyanurate insulation) and phenolic insulants are more efficient than mineral wool type products and can therefore achieve similar insulation results with a reduced thickness of insulant. Max Fordham's proposed insulation thicknesses became the basis of the cladding design. We also approached Kingspan who provided a calculation for their Kooltherm K15 board (Phenolic). Kingspan's calculation proposed a Kooltherm K15 thickness of 200mm which would have been more of a challenge to coordinate with the developing cladding design.

Windows

- 43.10 The existing windows were single glazed aluminium, two sliding sections which opened across one another. Cleaning the outside of the windows from the inside was difficult, and potentially risky if one tried to lean out to reach all of the glass. KCTMO advised that it did not routinely clean the windows and our brief was to look for a solution which would permit residents to safely clean the outside of their own windows. The traffic noise from the West Way is considerable and new double glazed windows would greatly reduce the disturbance on residents. Studio E looked at several options and two unequal width 'tilt and turn' windows was the agreed solution. Daylight and thermal modelling by Max Fordham identified the optimum opening area to cope with 'purge' ventilation, that is the large openings to permit rapid air flow during hot weather. The narrower casement window was sized to achieve this. The widened internal cill meant the depth of the inward opening sash would not interfere unduly with furniture in the room. The larger casement could be tilted open for safe everyday ventilation, or swung into the room for cleaning the glass on the outside {SEA00006429_0028}.

Lifespan

- 43.11 The argument for overcladding was not only to conceal thermal insulation. The horizontal and vertical structural elements to the Tower were concrete. When exposed to the elements over many years, concrete is susceptible to carbonation

– the progressive reaction of carbon dioxide with calcium hydroxide within the concrete – which can result in the corrosion of the reinforcing which will spall, or blister the concrete cover and jeopardize the appearance and long term structural integrity. Overcladding was therefore also a strategy for extending the life of the structure.

Heating and water supply.

43.12 The Estate had a communal heating system. There were no individual boilers to the flats in the Tower. Each flat was supplied separately with heating and domestic hot water and these supply pipes were within riser ducts located within the flats themselves. The existing cold water tanks which supplied all flats from the roof were in poor condition and KCTMO agreed to Max Fordham's suggestion to renew these and all the supply pipework. I understand the proposed methodology was to install and commission the new supply risers first, and swap over each flat in turn onto the new system and only once all flats were transferred could the existing system be decommissioned and removed. Space for the new riser was found in the lift lobby and the branches were routed at ceiling level to each flat. The upgrade included the heating, and the hot and cold water.

43.13 The two void flats, flats 91 & 145, used for investigations prior to the appointment of Rydon became "*show flats*" after Rydon was appointed, and were used to demonstrate to residents how the new heat interface units, radiators and pipes would be installed. These flats were later used to demonstrate the proposed window installation. I was involved in discussions with Max Fordham and KCTMO on pipe routes and radiator locations. I had less involvement on the window detail in the show flats.

Podium redesign

43.14 KCTMO advised me that it was seeking opportunities for new affordable housing and new flats could be created in the space and voids available at Mezzanine and Walkway +1. The boxing club and nursery were existing tenants and KCTMO wanted to use the opportunity to improve their facilities and rationalise and improve the entrance to the Tower and improve the connection

between Ground and Walkway level, to improving public access generally on the Estate in accordance with the Supplementary Planning Document {SEA00006429_0006}.

B5 Outline of design milestones

44. Through March to October 2012 there were in excess of a dozen project meetings to explore outline design options and at least as many resident and public consultation events. I attended several of these where residents' views on such topics as window operation, upgraded heating, building appearance, materials and colours were sought {SEA00006429_0007} {SEA00012334} {SEA00012325} {SEA00012326}.
45. Our Stage C report, issued in October 2012, {SEA00006429} gives a description of the early design work. A planning application was submitted to the local planning authority in August 2012 (the **Original Planning Application**).
46. The **Original Planning Application** was withdrawn following KCTMO's request for changes to the design (see section D2 below) and re-submitted in October 2012 (the **Resubmitted Planning Application**). The principal changes were:
- 46.1 The new stair and lift from ground to Walkway were moved from the south west comer to the south east comer. A new bridge was shown serving the walkway. The entrance became a triple height space;
 - 46.2 The boxing club was expanded to occupy the whole Walkway level, thereby achieving a dedicated entrance from Walkway level itself;
 - 46.3 3x3 **Bed** units at ground floor were changed to 3x2 bed and 1x1 bed;
 - 46.4 The existing garages to the south to be converted into offices were shown as two independent units with shared toilets;
 - 46.5 A community meeting room was created directly above the bins and transformers on the east side of the core; and
 - 46.6 One of the units on the Walkway +1 was converted from a four bedroom flat to a three bedroom wheelchair accessible flat.
47. Following presentation to the KCTMO Architecture Appraisal Panel (the **AAP**, see further section E2 below) in November 2012 several changes were considered, principally the removal of the low level canopy, the elaboration of

the Crown and more ambitious use of colour on the elevations. Increasing the size of the windows was also mentioned. These suggestions were explored with Planning and KCTMO over the following months.

48. Following the departure of Mark Anderson as director at KCTMO in early 2013, and as KCTMO had been unable to agree a price with Leadbitter/Bouygues for the Project, the Project effectively went on hold for several months. When the new director, Peter Maddison, was established, KCTMO requested further changes and a "reinvigoration" submission was made by IBI and Studio E on behalf of KCTMO in July 2013 (the **Amended Planning Application**). The principal changes were:

- 48.1 Removal of new lift and bridge connecting Walkway deck to the south.
- 48.2 Removal of existing bridge connection at Walkway level (this turned out to not be feasible).
- 48.3 Conversion of garages into offices abandoned. One garage allocated to bike storage and another to recycling bin.
- 48.4 Area to boxing club reduced and three storey office accommodation created on Ground to Walkway on south-west corner with a dedicated stair connecting three levels.
- 48.5 Subdued colour scheme with light infill panels between windows and graduations of grey cladding at Ground, Mezzanine and Walkway levels. Subdued Crown detail.

- 48.6 Canopy omitted.

49. During 2013 there were several conversations with KCTMO and the design team on how costs could be reduced.

- 49.1 Leadbitter put forward several options for consideration in early 2013 and several would be adopted by KCTMO: for example, tilt-and-turn windows, omission of the link bridge at Walkway level and a reduced scope of work beyond the Tower itself.

- 49.2 One suggestion was to re-use the existing concrete escape stair from Ground floor to Walkway (levels 0-2) in the south-east corner. With the omission of the new lift it was possible to remove the existing flight from Walkway to Walkway +1 (levels 2-3) and keep the rest of the stair from Ground to Walkway Level. The existing free standing stair would be enclosed to protect from the weather and would continue to function as the main fire escape exit from the Tower.
- 49.3 Several omissions were made to the Mechanical & Electrical (**M&E**) package, the most significant being the proposed heat pumps on the roof which were omitted in favour of replacement gas-fired boilers in the basement.
50. The finalisation of the tender documentation at the end of 2013 was a significant milestone.
51. The tender and evaluation period was December 2013 to March 2014. Rydon was confirmed as the successful tenderer on 19 March 2014. I believe the KCTMO Appointment may have been transferred to Rydon at or around this point. I understand that KCTMO appointed Rydon under the JCT Design and Build Contract 2011, which is a common standard form of contract {BS1/2}.
52. Planning Approval was received on 10 January 2014, with 11 conditions, which I felt was relatively few. Conditions 3 and 4 related to the external facing materials and window details. Rydon, as design and build contractor, was responsible for discharging these conditions and Studio E and other consultants assisted as / when requested by Rydon.
53. Soon after the appointment of Rydon, Artelia sought advice from IBI regarding Rydon's proposed value engineering proposals {SEA00010698}. These included:
- 53.1 Face fixed aluminium cladding. We understood this to be rivet-fixed Aluminium Composite Material (ACM). From conversations with Simon Lawrence (Rydon, contracts manager) I knew Harley were Rydon's preferred subcontractor and had seen pictures of the Chalcott Estate

refurbishment where they had employed this system also. Rydon were the main contractor on that project as well.

53.2 Remove or scale back the crown. The proposed new cladding did not extend much higher than the existing so this was not really an option without exposing the existing concrete beams. This proposal was not taken forward.

54. KCTMO requested further changes to the Podium layouts around May 2014. We submitted a change of use application on 12 June 2014 on behalf of KCTMO, not Rydon (the **Change of Use Application**). The changes were:

54.1 The offices on the Mezzanine and Walkway levels (level 1 & 2), south-west corner, were converted to two 2 bedroom residential units.

54.2 The remaining office space at ground floor was for the concierge, two meeting rooms and a toilet.

55. Studio E assisted in submitting details to discharge Planning condition 3 (external facing materials) and condition 4 (window details) on 30 June 2014. To support our application a mock-up was prepared on site and Planning visited the Chalcott Estate in Camden. We received approval on 30 September 2014. There were ongoing conversations during this period but ultimately the agreed changes were:

55.1 Cladding generally: the submission on behalf of Rydon was for face-fixed ACM, Reynobond "*Brushed Aluminium H9103S*" finish, later changed to "*Smoke Silver Metallic E9107S*" after discussion with Planning. Planning rejected the visible fixings in favour of fabricated cassettes which are hung on lugs and achieve a neater appearance.

55.2 Metal Technology System 17 high-rise curtain walling. As for the windows Studio E's tender specification had been for Wicona Wictec 50 and Harley / Rydon proposed the Metal Technology System.

- 55.3 Stainless Steel cladding to pilasters at low level. This was later changed back to the Glass Reinforced Concrete (GRC) originally specified as it did not realise a saving.
- 55.4 Omit the louvre screen to the smaller opening window.
56. In / around October 2014, KCTMO queried the size of the proposed window openings. We had set out to maintain the free area of glass and ventilation by widening the windows to compensate for the encroachment of increased window frame thicknesses, the increase in width of the pilasters in each bay and the shading of the proposed louvre in front of each purge vent. The kitchen windows were also to accommodate a new extract fan, reducing the overall daylight available in the kitchens. The wider windows had been shown on our planning and tender drawings. I knew it was feasible to widen the windows because the existing solid infill sections were not structural. In the tender documents Studio E had specified new birch faced ply surrounds to finish off around the internal window reveals and cills {SEA00002576} (clause P20/240A {SEA00000169_0249}), which was similar in appearance to the existing linings. KCTMO were unhappy that the wider windows would result in all residents having to renew their curtains / blinds, and that KCTMO would have to pay for them. Rydon proposed instead leaving the existing outer window frames in place, and fitting smaller windows in the remaining opening. It simplified the work and meant that Rydon needed to spend less time in each flat. Planning did not object and agreed that this was a minor amendment. A non-material Amendment was submitted by IBI in November 2014 (the **Window NMA**). The proposed changes were:
- 56.1 Reduced width of windows to all floors. 1279-SK112 Rev 02, issued 19 November 2014 {SEA00012179} shows reduced standard window of 1325mm wide. Tender drawings show window of 1660mm width.
- 56.2 Ground floor: KCTMO had decided to remove the concierge altogether. The community meeting room was increased, a kitchenette, more toilet facilities and an IT hub room were added.

57. Having set out the Project overview in this section, I now go back to the beginning of Studio E's involvement in the Project and cover the major phases of the Project in more detail.

C FEBRUARY 2012 TO AUGUST 2012: ORIGINAL PLANNING APPLICATION

58. As discussed in more detail below, Studio E's first substantive involvement in the Project began in February 2012. During February 2012 to August 2012, my focus was on preparing the architectural documents and coordinating other members of the design team to support KCTMO's planning application for the Project. My understanding was that KCTMO were keen to get planning approval as soon as possible, so that works on the Project could take place in parallel with Leadbitter's works on KALC.

59. In this section I describe:

59.1 Receiving the brief for the Project in February 2012;

59.2 An overview of what I and/or Studio E was involved in during the period February 2012 to August 2012; and

59.3 An overview of the Original Planning Application dated August 2012.

C1 My impressions on receiving the brief

60. Prior to February 2012, I had been involved with Studio E's successful bid for, and some initial design work on, KALC. The KALC public realm encircled the Tower and we felt it was sorely in need of investment because, for example, the KALC paving and planting would have been in stark contrast to the lower levels of the Tower and Estate (eg. see photographs at {SEA00008054_0016} and {SEA00008054_0017}). They would have looked neglected compared to the KALC regeneration. We made this point in meetings with RBKC, before we were aware of the more ambitious plan to refurbish the whole Tower.

61. I received the principal objectives for the Project in an email from Mark Anderson (director of assets & regeneration (KCTMO)) on 29 February 2012, which were:

"To improve the public realm links around the base of the Tower (as provided for in the SPD [that is developing new connections across the site and linking with the upgrades being undertaken as part of the KALC project])

To rationalise the ground floor arrangements

To improve the office space provision

To enclose the open corner of the Tower

To convert the 3rd (2nd by current numbering) to residential

To rearrange the fire exit routes allowing for the removal of the external staircases

To overclad the Tower providing for significant energy efficiency (including the windows)

To consider the roof level options

To rationalise the heating and hot water systems to the Tower and the Estate (this is currently provided via central plant)" {SEA00000007}

62. Before receiving this email, I knew very little about this potential project / brief, although may have discussed it in passing with Andrzej around the time of his initial meeting in December 2011.

63. I commented on this in an email to Andrzej {SEA00003567}. I also referred to Mark's reference to an Official Journal of the European Union (OJEU) limit for the Project. I understood that this limit was the maximum contract value permissible under EU procurement regulations, above which KCTMO would have to follow a compliant procurement process in selecting consultants. Such a process might involve advertising and tendering the opportunity publicly or using consultants from an approved framework list. The reason that I felt his email did not add up was that I believed the overall fee to deliver the Project would be higher than the OJEU threshold, and Studio E may not be able to qualify in a bid process. I felt it did not make sense to expose ourselves by working at risk for any length of time.
64. In the internal email I expressed my view that I felt Studio E was "*a little green on process and technicality*", because Studio E, as a practice, had not previously been involved in high-rise residential, heating renewal nor the overcladding of occupied buildings. I said I would speak to Max Fordham to develop my understanding of the process. I learnt that they had indeed been involved in similar projects before, and despite my initial uncertainty, I was comfortable that Studio E had the experience and expertise to take on the work being discussed at this stage.
65. Mark Anderson's (KCTMO) (email referred to a desire to "*maximise any opportunities that may arise from joint procurement and construction*"). I believe this means exploiting the benefits of the same design team and the same contractor. Access to the site was tight and congested and the KALC team had acquired extensive knowledge of the site. The logistical and cost benefits of having only one contractor on site gave KCTMO the best opportunity to complete the refurbishment early. I believe RBKC wanted to hand over KALC and the Project simultaneously. The knowledge that Leadbitter / Bouygues, a large design and build contractor, would be engaged on the Project was reassuring as we could expect specialist subcontractors to be involved from the outset. We felt more than able to take on the lead designer role as we had on KALC. I believe that KCTMO did later enter into some form of agreement with Leadbitter / Bouygues, the selected framework contractor for KALC, with a

view to them undertaking the refurbishment of the Tower as well, although this did not progress.

66. On 2 March 2012, I forwarded a copy of the brief to Curtins (structural / civil engineers), Max Fordham (environmental and building services) and Churchman (landscaping architect) {SEA00003573}. Mark Anderson (KCTMO) had asked Studio E for "~~fee~~proposals'from Studio E and its sub-consultants". I believe that the reason Mark Anderson had used this wording is because he thought Studio E would appoint subconsultants as we had done on KALC.
67. I met with Mark Anderson (KCTMO) and viewed inside the Tower on 6 March 2012, together with Tony O'Hanlon from Curtins. I often took photographs when visiting the site, as can be seen from Studio E's disclosure to the Inquiry, so for example on this day I took photographs including of the existing nursery entrance {SEA00003600}, a lift lobby on the Upper Floors {SEA00003604}, dry riser access point {SEA00003605}, stairway {SEA00003609} and smoke vent {SEA00003608}. I would generally take photographs as a record for Studio E to assist in the design process, particularly for areas that were not accessible or where access was controlled.
68. On any project there is a priority at the outset to assemble whatever existing drawings and information are available. Mark Anderson (KCTMO) provided us with scans of microfiche plans from the original construction {SEA00001068} {SEA00001069} {SEA00001070} {SEA00001071} {SEA00001072} {SEA00001073} {SEA00001074} {SEA00001075} {SEA00001076} {SEA00001077} {SEA00001078} {SEA00001079} {SEA00001080} {SEA00001081} {SEA00001082} which we used to develop our drawings. Mark was sensitive about me directly contacting KCTMO staff {SEA00003591}, as he wished to manage the dissemination of information about the potential Project. We also received drawings of the alterations to the Podium which were made around 1991 to 1992 {BS1/27} {BS1/28} {BS1/29}. We would have used existing drawings to develop our initial drawings for the Project {SEA00003910}. We also have a record of some drawings of proposals for the Podium developed in December 2011 by a firm of architects called

Hunters, which I think must have come from KCTMO {SEA00001042}
{SEA00001043} {SEA00001044} {SEA00001045}.

C2 Client Meeting on 28 March 2012

69. On 28 March 2012, I attended a meeting with Mark Anderson (KCTMO) and Bill Watts (Max Fordham) to discuss the Project further {BS1/30-31}. Studio E's minutes of the meeting state that the Project was subject to RBKC Cabinet approval, consultants would be appointed directly to KCTMO (ie. not as subconsultants to Studio E), and there is a post-meeting note where I flag that "*fire safety advice may be required*". I believe that I would have flagged this because Grenfell was a high-rise tower, that would remain occupied during the Project, and due to its age was not likely to be compliant with current regulations, and as a result any works proposed were not likely to fall within the standard guidance, which would require expert input.
70. Following the meeting, and during April 2012, I began to seek advice in relation to the cladding and fire strategy for the Tower. I informed Leadbitter that we were approaching specialists and that I would appreciate a discussion about how best to coordinate Leadbitter's input during the design stage {SEA00003962}. I wanted to avoid abortive work if Leadbitter already had views on who they wished to work with in the future.
71. After some searching online I approached CEP Architectural Facades Limited (CEP) (a cladding products supplier) with a view to meeting to discuss the project. As I recall CEP had experience in overcladding residential towers, particularly in the midlands where they were based. My recollection is that Geoff Blades (CEP) may have met one of my colleagues, possibly Markus Kiefer, on site in April and I met him at our office a week or so later, perhaps on 11 April 2012 {SEA00003965}. Geoff emailed me detail drawings for a project called Stretford House on 5 April 2012. They showed a multi-storey brick building with new windows, external insulation and ACM cladding {SEA00003941}.
72. Around this time, I was being assisted on the Project by my colleague Markus Kiefer, an experienced senior architect who had run his own practice in Germany before he came to Britain. My impression from working with him is that he was systematic, reliable and competent. Among other things, he assisted me in developing drawings.

73. On 10 April 2012, Markus emailed James Lee and Terry Ashton (both Exova) with a number of the initial drawings and requested an "*initial assessment regarding the fire escape strategies*" {SEA00003957}. We approached Exova on the back of the KALC project, which Exova was working on as a subconsultant to Studio E.

C3 Design team meeting 1

74. On 19 April 2012, I chaired the first design team meeting for the Project, together with Markus Kiefer and Blaine Cagney of Studio E and representatives from KCTMO, Max Fordham, Churchman, Artelia, Exova, Leadbitter and a cladding company called Weatherwise. I believe that Weatherwise would have been invited by Leadbitter. According to the minutes, among other things, at the meeting Mark Anderson (KCTMO) said that an objective of the Project was "*improving the thermal efficiency and visual appearance of the facade*" {BS1/32-36} and that he required from Artelia a breakdown which should include "*cost of cladding*" {BS1/32-36}. I note that Exova were sent a copy of these minutes {SEA00004058}. These meetings would be held monthly to fortnightly as a means of reviewing progress with the client.
75. After, on 20 April 2012, I met with Edward George and James Masini from the planning department for RBKC (**Planning**), in order to seek advice from them before we started on the planning application for the Project. I wrote to Mark Anderson (KCTMO) following the meeting noting that "*both Ed and George [I believe I meant James] were uncomfortable with the suggestion of aluminium cladding - plastic and Croyden [sic] were words that were used*" {SEA00004051}. I understand that their objection to aluminium cladding was aesthetic.
76. Although it was more closely related to our work on KALC, on 24 April 2012 I emailed Exova to ask for their written commitment to both projects {SEA00004053}.
77. On 4 May 2012, Mark Anderson (KCTMO) emailed the consultants currently working on the Project, which included Max Fordham, Churchman, Exova, Curtins, IBI and Artelia, to confirm that the RBKC Cabinet had approved the funding for the Project, and it was "*now officially live*" {SEA00004136}.
78. On 9 May 2012, Exova emailed me a fee proposal for providing fire engineering consultancy services on the Project {SEA00000018}, following my request {SEA00004117}. The fee proposal totalled £8,600 + VAT, and comprised work at RIBA Stages C and D/E, including a fire safety strategy for the building

comprising means of escape, assessment of the fire safety systems requirements, recommendations regarding any smoke ventilation requirements, determination of any external fire spread issues that there may be and the impact this may have on the architectural design, recommendations of compartmentation and structural fire protection standards, and assessment of the access and facilities for the fire service. In addition, work done at RIBA Stage F would be charged at Exova's standard hourly rate. On 11 June 2012, I forwarded the quote to Artelia, who was employer's agent and project manager for KCTMO, as I understood the intention was for Exova to be directly appointed by KCTMO and not a subconsultant of Studio E, and suggested Artelia should contact Exova {SEA00004542}. I understand, because I was copied into an email, that six months later Exova was still not sure whether this fee proposal had been accepted by KCTMO {SEA00000074}, although they had been working on the Project since May 2012 and James Lee (Exova) may have visited site on 29 May 2012 {SEA00004312}.

79. On 21 May 2012, I emailed Exova {SEA00004242} seeking their input on some drawings (proposed floor plans Ground floor, Mezzanine and Walkway levels and which also showed a typical existing residential floor {BS1/37}, sections and elevations for the whole Tower {SEA00001252} and showing the existing floor plans for comparison {SEA00004896}) to establish the feasibility of the proposals {SEA00004242}. Terry Ashton of Exova responded the next day, stating "*the proposed alterations to the building must not adversely affect it in relation to compliance with the requirements of Part B (fire safety)*", and commenting on the layout of the proposed floor plans from a fire safety perspective {SEA00000020}.

C4 Design team meeting 2

80. On 24 May 2012, I chaired design team meeting 2 with representatives from KCTMO, Max Fordham, Curtins and Artelia. The distribution list for the meeting states that IBI, Exova, Leadbitter and Churchman also received copies of the minutes {SEA00004295}.

Environmental criteria

81. The minutes state that the design team needed environmental criteria such as U-values to progress the cladding design {SEA00004295_0002}. This was an action for Max Fordham, as I believe their design of the heating system was based in part on the performance of the external envelope of the building.

Fire

82. The minutes state Exova was not present at this meeting, but on the distribution list. Among other things, the minutes state that "*there is no existing fire strategy for the building. Exova will need to prepare one as part of the upgrade works*" and Ricky Sams (KCTMO) "*to forward proposals for upgrading smoke extract*" including "*comments from LFB [the London Fire Brigade]*".
83. My understanding is that it was Exova who had originally commented that there was no existing fire strategy, and that the proposals for upgrading the smoke extraction had arisen from a review of the fire safety after a previous fire in the Tower in April 2010. Later, in September 2012, KCTMO confirmed that there were no written comments from the LFB, and outlined the background to the existing proposals for upgrading the smoke extract {SEA00000059}.
84. Also on 29 May 2012, I emailed KCTMO seeking to arrange access for Exova to visit the site {SEA00004308}. The next day, on 30 May 2012, James Lee (Exova) emailed me and Markus with comments on the proposed floor plan {SEA00000022}. Among other things, he made comments regarding the Upper Floors including {BS1/38-41}:
- 84.1 "*The evacuation strategy for residential flats is defend in place ie. only occupants in the flat of fire origin are expected to evacuate. This strategy*

is acceptable due to the high degree of compartmentation provided throughout the building.";

84.2 *"Ventilation should discharge into a vertical smoke shaft minimum cross sectional area of 1.5sqm and the minimum free vent area of the vent from the corridor into the shaft and at the opening at the head of the shaft should be at least 1sqm."; and*

84.3 *"The common corridors should be provided with smoke detectors that will be linked to the corridor ventilation".*

85. I replied to James Lee (Exova) the same day, asking whether he was aware of the smoke extraction safety review I understood had been carried out by the LFB, which I had heard about at design team meeting 2. I said that it seemed to me that if the existing smoke extract system was being upgraded, then the system should deal with the new lobbies {SEA00004323}. I chased up a copy of the report from KCTMO {SEA00004421}, and believe the report referred to at design team meeting 2 was the AECOM report dated October 2011. I should note that Studio E was not party to discussions with the maintenance contractor regarding the smoke ventilation system.

Residents' consultations

86. On 29 May 2012, I presented an overview of the Project at an evening meeting with residents. The meeting was opened by someone from the Estates Management Board (EMB). It was not entirely clear to me how the EMB interacted with KCTMO. I believe the EMB was a body which directly represented residents' interests. The meeting was open to residents for them to provide feedback {SEA00004433}. There was a sign-in sheet which shows the residents who signed in to the meeting {SEA00004434}. I showed some boards at the meeting {SEA00004327}, including:

86.1 An overcladding sheet, showing an isometric diagram of a cladding system and a number of window and rainscreen options {SEA00004328};

86.2 A 'before' and proposed 'after' sheet of the low levels of the Tower
{SEA00004329}; and

86.3 A sheet to show the proposed changes to the Podium {SEA00004330}.

C5 Design team meeting 3

87. On 7 June 2012, I chaired design team meeting 3 {SEA00004648}. Amongst other things, the minutes of the meeting state that there had been discussion of the initial cost plan for the Project. Artelia, who were the employer's agent and project manager, had prepared a budget cost estimate of £7,800,000 {BS1/42-45}.
88. Following the meeting, on 12 June 2012, I emailed KCTMO attaching Studio E's then proposed fee and draft appointment documents {SEA00004561}. It was unusual for Studio E to propose its own appointment terms on a local authority project. We usually find ourselves negotiating against a client's standard terms but I believe KCTMO and Artelia did not have preferred terms they wanted us to use. The other consultants had referenced their own professional bodies standard terms in their fee proposals so in the interests of clarifying our role and responsibilities I had prepared a draft RIBA Standard Form of Appointment 2010 and forwarded to the client. At this stage, KCTMO had not yet decided the timing for the novation of SELLP's appointment with KCTMO to the appointed contractor, whoever that would ultimately be.
89. I felt the various fee quotes that were being circulated by the design team around this time "*could have been more coordinated*" by Artelia {SEA00004536}. As to being more coordinated, Mark Anderson (KCTMO) had originally asked for fee quotes to come through Studio E, but to me this was something that fell within Artelia's role, which appeared to be the case {SEA00004716}.
90. I used the budget estimate provided by Artelia to approach Building Control {SEA00000023}, to get information on the Building Control fee for Artelia's budget estimates {SEA00004472}, but also to confirm that Building Control would have been happy to have pre-application discussions in order to provide guidance at any early stage, which Building Control agreed {SEA00004471} {SEA00004480}.
91. As Building Control would ultimately be responsible for signing the building off, I wanted early Building Control guidance because this would mitigate the risk of Building Control requiring changes later on in the Project, when these

changes could potentially be very difficult and costly to make. In my experience, early consultation is good practice, especially when the proposed works are to an existing building. My understanding is that works to an existing building do not require that the entire building be upgraded to comply with the current regulations, instead the works should not leave the altered building less compliant than when the works were started. As a consequence, it is not always clear which aspects of the proposed works need to comply with current requirements and which do not. Although we had Exova to advise on some such points, my understanding was that the ultimate decision as to whether something complied with the Building Regulations 2010 (**Building Regulations**) was with Building Control.

92. Two examples of issues where the design team wanted early input from Building Control are discussed in the minutes for this design team meeting, that is the interpretation of Part L (thermal performance) and the requirement for new cooker hoods (kitchen extract). An alternative that was discussed around this time was the possibility of discussing the design team's early Building Regulation queries with an approved inspector {SEA00004648}.
93. My recollection is that Mark Anderson (KCTMO) thought that the local Building Control was to be used for the Project and this was later confirmed. In my experience, it is common for council inspectors to be used on council related projects. I am not aware if Leadbitter approached Building Control or any approved inspectors at or around this stage of the Project.
94. In terms of considering the fire safety for the design of the Project in June 2012, I am aware that Churchman was in contact with Exova regarding fire strategy considerations for the public realm surrounding the Tower {SEA00004592} {SEA00004789} {SEA00004790}. On 12 June 2012, Exova emailed me {SEA00004638} with a fee proposal for producing a fire strategy for the (then) existing condition of the Tower (the EFSS) {BS1/46-57}. I forwarded it to Paul Dunkerton (KCTMO) as I assumed he would be the one to instruct Exova {SEA00004572}, however he said Mark Anderson (KCTMO) was responsible for providing all instructions {SEA00004633} so I forwarded it to him {SEA00004638}. In the meantime, on 18 June 2012 Exova emailed me to ask

whether its fee proposal of 9 May 2012 (for the OFSS) had been accepted {SEA00000030}, which I forwarded to Artelia as I was not dealing with it {SEA00004704} {SEA00004708}.

95. Studio E also continued to gather information to develop the initial designs in June 2012. For example:

95.1 On 13 June 2012, I emailed Leadbitter and asked Colin Chiles to put me into contact with someone at Leadbitter to discuss window solution suppliers, to "*get a little feel as to their relative cost, robustness and how reliable they are as suppliers*" {SEA00004677}. Colin replied that he had a number of options, including an in-house specialist, but would prefer to bring in subcontractors, but to do this would need KCTMO to put in place a pre-construction services agreement with Leadbitter {SEA00004677}. On 3 July 2012, I said I had asked SAPA and Velfac, two window suppliers, for technical input on windows {SEA00004854}, which Colin Chiles said he was very happy with {SEA00004869} and I believe he also provided me with literature regarding Metal Technology Windows in hard copy binders which he passed to me. I believe we no longer have these binders.

95.2 On 18 June 2012, Max Fordham emailed me and said "*do you have an idea on the likely wall/cladding build-up yet? What U-value are you targeting?*" {SEA00004737}. In response, Blaine Cagney (Studio E) emailed Max Fordham a study drawing for the likely cladding build up {SEA00001283}. My understanding from design team meeting 2 was that Max Fordham were to set the target U-value {SEA00004295_0002}.

C6 Design team meeting 4

96. The minutes of design team meeting 4 on 25 June 2012, record that Max Fordham recommended, among other things, a target U-value for walls and windows. I discussed this further from paragraph 43.7 above. The notes of the meeting also state that Max Fordham recommended the provision of a kitchen extract for the existing flats. The notes of the meeting state the extract was not a Building Control requirement for existing properties, but would address the humidity and heat build-up that would occur when the building was sealed up with new windows {SEA00004864}.
97. Around this time, Studio E was continuing to work on the cladding proposals, for example by carrying out colour studies of materials. Our intention was to stay in keeping with the original design intent by emphasising the distinction between the vertical and horizontal elements of the Tower.
98. On 27 June 2012, Marc Watterson (IBI) emailed me and said he had met Edward George (Planning) who had *"seemed pleased with the proposals to date"* but *"wasn't so keen on the rainscreen panel image but liked the zinc, render and particle board in particular. The top hung casement windows weren't favoured but I suspect that might be the image more than the product itself"* and would be deciding whether the application would constitute a major application or not {SEA00004825}.
99. In July 2012, we continued to focus on how the building envelope would be designed, and in particular the window options, cladding material and insulation:
- 99.1 In early July 2012 we were continuing to look at potential window options {SEA00004857}. Blaine Cagney received information from SAPA regarding opening details for fully reversible windows {SEA00004921} {SEA00004984}, and Alcoa regarding its window options {SEA00005047}.
- 99.2 In terms of resident engagement, I am aware that KCTMO conducted a number of feedback meetings. I met with the boxing club and nursery because they would be affected by changes to the Podium and I am aware

that KCTMO kept residents up to date through a newsletter. For example, on 12 July 2012 I attended a residents' consultation meeting. According to an email I sent the next day, it was a quiet evening. I believe that the boards that were exhibited at the meeting included boards SK23 {SEA00001358} & SK24 {SEA00001359}, showing different window configurations and the maximum area of ventilation possible with each. At the same engagement event we presented diagrams of the heating options that Max Fordham had explored ({SEA00001357} containing a graph showing the approximate tenant energy costs instead of a table as I did not want KCTMO to appear to be overselling the potential energy savings to tenants, which was all that my reference to "*manipulated*" in {SEA00005135} means), together with a graph showing possible energy savings for each option, which tenants would benefit from, and proposed Podium floor plans {SEA00005143}. I do not recall that any residents had concerns about cladding the building at the meetings.

99.3 KCTMO also asked Studio E to carry out a window survey on the flats of leaseholders at the Tower. This was essentially a condition survey and the purpose, as I understood it, was to provide KCTMO with the information it needed to decide whether there would be financial implications for the leaseholders arising from the replacement of the windows.

100. Regarding the design of the building envelope and Max Fordham's work on the heating options:

100.1 On 4 July 2012, Andrew McQuatt (Max Fordham) emailed Artelia, copying in me and KCTMO, providing information regarding potential heating options for the Tower {SEA00004923}. The strategy and recommendation on the heating strategy was led by Max Fordham. We were glad that the option C, individual gas combi-boilers for each flat, was discounted because of the difficulties in accommodating flues on the elevation and routing new gas supplies, but otherwise we held no strong views.

- 100.2 On 5 July 2012, I emailed the Technical Queries address at Rockwool, attaching a drawing showing the proposed facade build up and asked whether Rockwool could advise on the "*appropriate insulation type and thickness for this application and to achieve the desired U-value*" {SEA00004967}. Studio E also sent an enquiry to Kingspan but I have not found a copy of that email, possibly it was submitted via a web form {SEA00004973}.
- 100.3 Later on 5 July 2012, Max Fordham replied to me and said that a 45cm depth of Rockwool seemed "*a bit high*", that Max Fordham expected to achieve a U-value of 0.15 with approx. 180mm of insulation and "*a phenolic foam insulation would give greater insulation for the depth. Hopefully the response from Kingspan may be closer to the target*" {SEA00004978}.
- 100.4 On 6 July 2012, I emailed Max Fordham and said that Kingspan had "*come back with 200mm phenolic to achieve a 0.15 U-value*" {SEA00004986}. I attached a copy of Kingspan's U-value calculator which referred to Kingspan Kooltherm K15 {SEA00001338}. I also attached a product sheet for a glass fibre insulation product called Superglass Cladding Mat 37 which we did not consider further because it was less efficient than phenolic products {SEA00001337}. I note that Studio E holds a copy of an information sheet for Kingspan Kooltherm K15 {SEA00001009}.
- 100.5 On 11 July 2012, Edward George (RBKC) had confirmed that the Project triggered policy CE1 of the RBKC "*Core Strategy*", and that the BREEAM Eco-homes rating of "*very good*" should be "*aimed for*", by which he clarified that we needed to justify why certain sustainability targets would not be met if they would be missed {SEA00005077}. BREEAM, stands for Building Research Establishment Environmental Assessment Method, and is a sustainability assessment method which aims to ensure that buildings meet the quality and performance standards of the scheme, to improve the sustainability of the building.

101. As to fire advice:

101.1 Regarding the EFSS: On 3 July 2012 I emailed James Lee (Exova) to ask whether he was any closer to preparing a fire strategy for the Tower as existing {SEA00004860} because Exova had not yet prepared the EFSS.

101.2 On 12 July 2012, Paul Dunkerton (KCTMO) emailed me and Max Fordham a copy of the AECOM smoke extract documents, which I forwarded to Exova {SEA00005129}. While this was primarily a document relating to M&E, and therefore of particular interest to Max Fordham, by this stage of the Project I had been working with KCTMO, and in particular Paul Dunkerton, for a period of time, and I was probably better known to him than others, such as Artelia, who had less contact with him, which is maybe why he sent it to me.

C7 Design team meeting 5

102. On 18 July 2012, I chaired design team meeting 5. Among other things, the minutes indicate {SEA00005254}:

102.1 The outline proposal was for Leadbitter to start on site in February 2013;

102.2 Zinc was emerging as a "*front runner*" for cladding and that a VMZinc composite panel "*may be most cost effective for true zinc finish*";

102.3 Despite verbally confirming appointments, KCTMO now wanted to appoint consultants through Studio E, with part of the fees deferred until Stage D, except for IBI and Artelia who would remain direct appointees of KCTMO;

102.4 After Stage D, appointments were to be novated to Leadbitter, and Leadbitter proposed appointing each consultant directly (ie. not through Studio E);

102.5 Fire access was not required to four sides of the Tower;

102.6 Windows remained under review; and

102.7 Max Fordham and Exova were to review upgrading the smoke extract system.

103. I understand that James Lee left Exova on 20 July 2012 and that Terry Ashton of Exova took on responsibility for his projects {SEA00000035}. At this stage, Exova had attended one meeting on the Project and provided a very preliminary mark-up of the plans {SEA00005302}, although I note that KCTMO had not yet approved its quote dated 9 May 2012 {SEA00005277}.

104. By 23 July 2012, after the meeting, Studio E had narrowed down three possible window opening types: the Kawneer AA3110, SAPA Dualframe Si 75 Tilt/Turn and the Velfac Reversible Modern 200 {SEA00005210} {BS1/58}.

105. On 24 July 2012, I received an email from an Ian Pritchard of Rockwool in response to my enquiry of 5 July 2012. He said that whilst Rockwool would

usually recommend Rainscreen Duoslab for this type of construction, due to the 0.15 U-value the thickness of Rainscreen Duoslab needed would be "*exceptionally high*" and "*probably beyond the point of sensible building practice*" {SEA00005271}. I forwarded Rockwool's email to Max Fordham {SEA00005276}.

106. Andrew McQuatt (Max Fordham) also said that the BREEAM Eco-homes standard that we were required to consider had recently expired {SEA00005099}. Subsequently, on 25 July 2012, Marc Watterson (IBI) confirmed that the design team should instead aim for "*very good*" on the BREEAM Domestic Refurbishment assessment {SEA00005297}. Later in August 2012, Syntegra was appointed as BREEAM assessor for the Project {SEA00005739}.

C8 Design team meeting 6

107. On 26 July 2012, I chaired design team meeting 6 {SEA00005606}. Among other things, the minutes indicate:
- 107.1 The proposal for Studio E to appoint the other consultants as subconsultants, as on KALC, had not been resolved;
- 107.2 Leadbitter was to prepare the cladding programme for construction;
- 107.3 Resident consultations had been poorly attended; and
- 107.4 Studio E had lined up potential window suppliers to provide mock-ups, but felt that the selected window option should be clearer before asking the suppliers to proceed.
108. Exova attended the design team meeting on 26 July 2012, the minutes of which refer to overcladding {SEA00005606}. After the meeting, on 30 July 2012, I emailed Clare Barker of Exova and thanked her for attending the meeting. I said that I didn't expect to need another meeting with Exova before submitting to Planning, and then possibly not again until we entered negotiations with Building Control {SEA00005344}. This email was prompted by my having pressed for Exova to attend. My recollection is that Clare was covering for others and had had to travel some distance and had little to contribute for much of the meeting. Despite this I felt it was important Exova were represented given the importance of fire safety.
109. On 30 July 2012, Clare Barker (Exova) emailed me and said, regarding resourcing, she was happy to work on the report for the existing fire strategy but that it might be better if Terry Ashton worked on the fire strategy for the proposed refurbishment {SEA00000037}. Around this time, Exova's invoices were presumably being sent to and paid by KCTMO {SEA00005343}.
110. During July 2012, Studio E's contractual position was still not resolved {SEA00005145}. On 12 July 2012, I emailed Leadbitter as I was concerned that the design team had not yet had a full team meeting, and the lack of participation meant there might be delays to the Project {SEA00005107}. On 18 July 2012,

Artelia said it was reviewing how to formalise consultant appointments {SEA00005165}. I emailed Artelia to say that if Studio E was to appoint the design team as subconsultants, then we would expect to add a management fee {SEA00005269}. Given the difficulty in negotiating many subconsultant agreements on KALC, and the time required to manage the invoicing and payments to multiple subcontractors, Studio E preferred to avoid subconsultant arrangements.

111. On 27 July 2012, Paul Dunkerton (KCTMO) emailed me and asked for information for the residents' newsletter regarding the proposals {SEA00005319}. The same day, Blaine Cagney emailed him attaching images for the newsletter {SEA00005320}, including one for VMZ Composite which said it had a "*polyethylene core FR (fire retardancy)*" {SEA00005330}. I recall that we were still researching cladding options at this stage. I note that in an August 2012 version of the KCTMO Project newsletter, the cladding with the most favourable reception from the residents' consultation was a zinc cladding system, illustrated as "*VMZ Composite*" with a "*polyethylene core FR (fire retardancy)*".
112. The upcoming milestone that we were working towards was submitting the planning application before 3 September 2012 so it would be before the planning committee on 13 November 2012 {SEA00004970}. By the end of July 2012, Planning had confirmed that the application would be treated as a minor application according to IBI {SEA00005447}.

C9 Design team meeting 7

113. I chaired design team meeting 7 on 9 August 2012 {BS1/120-122}. During August 2012, my focus was on working on the information that would support the planning application. At this stage, Max Fordham and Studio E had a lot of material that needed to be pulled together, as fire strategy, for example, had not been developed. Marc Watterson (IBI) was coordinating the planning process and he circulated a list of planning deliverables showing who was responsible for what information {SEA00005802}.
114. On 7 August 2012, I attended a meeting with Edward George (of Planning) and Marc Watterson (IBI) {SEA00005602}. This was one of a number of meetings to obtain pre-application advice from Planning, to get an early indication of Planning's view of the proposals and reduce the likelihood that the application would be rejected. Before the meeting, I had been aware from his email that Marc was of the view that the planning application process with RBKC was more complicated than any other local planning authority he had worked with {SEA00005523}. Among other things, we discussed the materials for the Project. At this stage, the proposal was for a zinc cladding material, which Planning was comfortable with {SEA00005597}. I have discussed factors relevant to the choice of cladding at Section B above, however essentially we wanted an attractive, preferably natural material which would not look too plastic/artificial, and would retain its visual appeal with age. In terms of Building Control compliance, at this stage I don't believe anyone then would have highlighted this as being of particular relevance to cladding selection. We all believed we were choosing cladding products that had been used many times before.
115. We had a further meeting with Planning on 16 August 2012, and among other things discussed the appearance of the purge window louvre that was being considered {SEA00005843}. Marc Watterson's (IBI) notes of the second pre-application meeting do not refer to cladding or insulation.
116. In terms of other various areas of the Project:

116.1 Windows. We had been trying to find a type of window that met the somewhat conflicting needs for safety (eg. preventing people and items from falling from the window), generous openable area for ventilation and a method of cleaning the glass from the inside. Max Fordham's Overheating Report (30 July 2012) presented the results of the thermal analysis of several alternative options and recommended a window divided between a horizontal pivoting sash and a smaller inward opening 'purge' sash ventilator to cope with the hottest days of the summer. Both panels assumed solar glass {BS1/59-72}. The pivot window offered nominally better results than a tilt-and-turn window because I believe it is aerodynamically more effective in directing warm air out and cool air in. However my feeling was that a pivot window should be avoided because they are relatively unusual, are prone to leaking and need to be rotated 180° for cleaning. I was concerned about this level of movement because objects or people could be caught in the path of the window and be knocked out of the window. I was equally concerned about the reversible mechanisms, some of which require the user to reach out quite far to reverse a window front-to-back. On 2 August 2012 we emailed window suppliers including SAPA, Alcoa and Window Technology to request further information about how their pivot windows operated {SEA00005510} {SEA00005509} {SEA00005508}.

116.2 Insulation. I was aware that Syntegra needed information about the Project including elevations, U-values and M&E information in order to carry out their BREEAM assessment work, so on 15 August 2012 I wrote to Max Fordham to say that we needed to discuss U-values and the insulation specification {SEA00005818}. I did not want to be in a position where Max Fordham had told Syntegra we were achieving a U-value that was not practically achievable. The next day, Andrew McQuatt (Max Fordham) emailed me to say he had done calculations to work the thickness of insulation needed to achieve the 0.15 U-value, and that Celotex FR5000 was the only type of product that he thought would give the required performance (although he said Kingspan also did a version of this) {SEA00005840}. He also attached the product datasheet for

Celotex FR5000 {SEA00005841}. I do not recall what I noted from the datasheet at the time, but I now note that it states Celotex FR5000 *"Has Class O fire performance throughout the entire product in accordance with BS 476"*. None of Max Fordham, CEP, Exova or any other specialist I had discussed the Project with had raised this as a technical design issue.

116.3 Fire. On 7 August 2012, I emailed Clare Barker (Exova) and asked for confirmation that it had reviewed the scheme, had no significant comments, and to ensure the design team was aware of any implications arising from the strategy for fire safety {SEA00005595}. On 9 August 2012, Cate Cooney (Exova) came back seeking further information regarding the existing dry riser, lifts, riser doors and the pressurisation of the lobbies serving the Upper Floors {SEA00000038}. I replied to the queries with the information I had, copying in KCTMO and Max Fordham so they were aware of the queries {SEA00005651}. On 13 August 2012, I also provided Cate Cooney with contact details for KCTMO and Max Fordham, so Exova could liaise directly with them on these or further points {SEA00005686}. I am aware, because Cate Cooney and Paul Dunkerton copied me into their email chain, that Exova asked KCTMO for a copy of the fire risk assessment for the Tower {SEA00005688}. On 16 August 2012, Exova sent me a first draft of the EFSS for the Tower in its then current configuration {BS1/73-88}, which I forwarded to Max Fordham and KCTMO {SEA00005848}. I later said that I thought some of the recommendations in the draft EFSS were unrealistic, given it was an interim strategy {SEA00000048}. I do not specifically recall what I meant by realistic, but I think I would have been referring to the likelihood that KCTMO would not wish to carry out extensive upgrade works in the interim if an extensive refurbishment project was due to start soon after.

116.4 I replied to Exova, copying Max Fordham, asking that Exova comment on the stair and escape provisions and the introduction of residential units on the Mezzanine level. Cate Cooney replied saying she would take a look at the plans that I had sent through and give me a call to discuss

{SEA00000043}, although I do not recall what was discussed. I am not aware of whether Exova finalised the EFSS, as the only version we received was stamped draft. On re-reading the EFSS in order to prepare this statement, I understand that Exova flagged three key issues: (i) the performance of the existing smoke ventilation system; (ii) fire separation of the risers directly off the firefighting shaft; and (iii) separation of the residential and non-residential space in the Podium. I believe that these concerns were addressed in the OFSS and with Building Control in due course. I should note that, although I do not recall specifically when I became first aware of it, Studio E was aware that there was a Regulatory Reform Order (RRO) fire safety risk assessment in place for the Tower, although I believe Studio E was not provided a copy of it until December 2014. My understanding was that the preparation and management of a RRO Fire Risk Assessment (FRA) is an obligation on employers and building owners and not the responsibility of the architect/designer. I do not recall being alerted to any actions in the FRA for Studio E to consider.

117. KCTMO had not yet settled the design team's appointments at this stage, despite our attempts to progress the appointment documentation. One proposal was that the appointments for the Project were to be based on the appointments for KALC, although this would have required a significant amount of rewriting {SEA00005502}. My view at this stage was that the issue of the contractual arrangements was for KCTMO, and I assume its representative, Artelia, and Leadbitter to resolve {SEA00005507}.

C10 Original Planning Application

118. The planning application was sent on 24 August 2012. I believe that copies of the planning documents are available on the RBKC Planning Portal website. For the application, Studio E put together the Design and Access Statement (the DAS) {SEA00006015} and supporting drawings {SEA00008021}, and collated the submissions of the rest of the design team to send to KCMTO and Planning, although IBI was managing the process {BS1/89}.
119. The format of the DAS was based on the CABE guidance (2006/7), which I believe is widely used. The purpose of a DAS is to provide a background to and explanation of a project. It is not generally cited in the planning approval, whereas drawings usually are. In a protracted approvals process (such as for the Project), there can be numerous changes to the drawings, but it is not normal to then revise and update the DAS.
120. The cladding design brief and materials indicated at this stage are set out at page 13 of the DAS {SEA00006015_0014}. Our design for the overcladding of the Upper Floors intended to reflect the visual language of the existing Tower, being comprised of modular elements. We intended to reflect the original concrete frame in the zinc cladding: the horizontal spandrels beneath the windows in a darker colour and the vertical diamond columns were in a lighter colour. The aluminium framed windows with smooth green panels were to read as distinct elements within the frame {SEA00006015_0013}.
121. The descriptions of materials provided at the planning stage were indicative. If Planning wants to retain control over final details, it will usually grant permission subject to "*reserved conditions*" (on which further formal submissions will be made in due course). So, by referring to "*zinc composite rainscreen cladding*" {SEA00006015_0014}, Studio E was simply indicating a quality and type of material which would ultimately be agreed at a later date.

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122. After submission, the planning application would be validated by **Planning**, which is where the planning authority confirms it has received all the documents and the fee. I understood that there would be a three week consultation period where things would be fairly quiet, and then **IBI** would meet with **Planning** to discuss any comments {SEA00006078}.

123. In this section, I describe:

123.1 An overview of the tasks that Studio E was carrying out following submission of the planning application;

123.2 Background to and tasks arising from the decision by **KCTMO** to request the relocation of the new fire stair from the south-west to south-east corner around mid-September 2012; and

123.3 An overview of Studio E's understanding of its contractual position during this period.

D1 Following submission of the planning application in August 2012

124. In early September 2012, my colleague Adrian Jess began to assist me with Studio E's work on the Project {SEA00006061}. Adrian was a senior architect who had worked on several other projects under another Studio E director, sometimes as project architect.
125. My focus at this stage was on preparing the Stage C report. This is a report intended to summarise the project development at the end of RIBA work stage C, so usually includes information about the concept design including outline proposals for structural and building services systems, outline specifications and preliminary cost plans. The client's agreement to the contents of the stage report is the usual way we proceed to the next stage, both in terms of the level of detail and our fee agreement.
126. Therefore, Studio E was gathering the information it needed to put together the outline proposals, such as for the windows and cladding options. On 11 September 2012, Blaine Cagney emailed SAPA and Technal, which are window suppliers, to ask if they could prepare a mock-up of the proposed window system {SEA00006098} {SEA00006102}. As shown in Studio E's documents, we were continuing to consider cladding options at this stage. Our email to Umicore (a materials company) of 4 September 2012 shows we were interested in VMZ Composite {SEA00006125}.
127. At the same time, other designers were working on their Stage C reports which we would compile into a single document. So for example, I was aware that Mark Anderson (KCTMO) emailed the design team and asked them to consider and provide guidance on the potential environmental improvements that could be incorporated into the Project such as photovoltaic cells / solar power, rainwater / greywater harvesting and wind power {BS1/90-93}, which was about sustainable use of resources / building service issues, which Max Fordham were best placed to comment on in terms of feasibility / payback / regulation. Another example is that Max Fordham contacted Building Control directly with a query relating to Part L of the Building Regulations (regarding fuel and power) {SEA00006018} {SEA00000046}. I am also aware that Max Fordham liaised

directly with KCTMO on having access to the Tower to "*have a good look at the risers in the main circulation areas*" {SEA00006059}, this would ultimately feed into Studio E's work in coordinating the design as new routes were needed through the Tower for new services.

128. One of the sections of the Stage C report was for input from the fire consultant, and I have set out below the steps I took in this period to get that input:

128.1 I emailed Cate Cooney (Exova) on 28 August 2012 because I felt the fire strategy for the Project proposals was somewhat embryonic and I wanted Exova to provide input by commenting on the drawings {SEA00000045}. However she was on annual leave so on 30 August 2012 I emailed Terry Ashton (Exova) saying that we needed comments on the plans (of 16 August 2012) for the proposals and that we needed to go through the fire strategy for the existing Tower, and that it would probably be a good time to make contact with the local fire officer to discuss the Project {SEA00000048} as Building Control and then the LFB have the final say on what is or isn't acceptable in terms of Building Regulations.

128.2 On 3 September 2012, Terry Ashton proposed meeting me to discuss the fire strategy issues {SEA00000054} and I forwarded him a link to the planning drawings {SEA00000055}.

128.3 I note that according to the minutes of the design team meeting on 6 September 2012 {SEA00006157}, Terry Ashton (Exova) was an attendee and overcladding was referred to during the meeting. As I have stated above, the overcladding was closely linked to the proposal to upgrade the heating at the Tower. The minutes to the meeting state that "*Exova need to understand the existing situation and whether LFB do test the system twice a year, and what was behind the proposed upgrade works to the smoke exhaust/fire. The statutory position on the design needs to be established as it is not possible for Building Control to insist on enhancements*".

- 128.4 On 10 September 2012, I met Terry Ashton at our offices {SEA00000058}. I do not recall what was discussed, although note that the minutes for the design team meeting on 6 September state "*draft fire strategy needs detail interrogation and a meeting was arranged with SE early next week to review*". At or after the meeting, I emailed KCTMO requesting further information on whether the LFB provided written concerns about the existing smoke ventilation system, and how the AECOM specification had been prepared {SEA00006095}. KTCMO responded the next day {SEA00000059}.
- 128.5 On 12 September 2012, Jean Watt (Exova) emailed me {SEA00000061} attaching Exova's Design Note 1 ({SEA00006171_0003} to {SEA00006171_0006}). The note provided an outline fire safety strategy for the proposed refurbishment of the Tower. It focused on means of escape and access/facilities for the fire service, which reflected our conversations with Exova. As a result, I would have believed these were the most significant issues that needed to be addressed at this point.
- 128.6 On 13 September 2012, I emailed Artelia copying in others from the design team and forwarded a copy of Exova's Design Note 1 {SEA00006114}. In my opinion, in the note Exova "*did not identify any fundamental problems*" in terms of the fire strategy for the refurbished Tower, but I said that liaison with Building Control was essential because in my opinion "*they set their own standards*". By this, I meant Building Control, with the essential input of the LFB, hold the ultimate authority for interpreting the requirements of the Building Regulations and achieving a safe building.
- 128.7 After circulating Exova's Design Note 1, I discussed the position of the dry riser with Churchman {SEA00006119} and Artelia asked if Exova would be liaising with Building Control {SEA00006116}. I note that on 14 September 2012, I emailed Artelia, in response to the latter request, and said "*Fire and BREEAM, whilst important are detail discussions that can be resolved once we have sign-off on the proposed scope*"

{SEA00006121}. This reflected the fact that the Project was not yet at a detailed design stage.

129. Looking back over my email correspondence, by the middle of September 2012 there were discussions about costs of the Project. Artelia's costs plans for the Project showed it was over budget {SEA00006089} {SEA00006112} {SEA00006124}, and therefore I anticipated we would be asked to identify potential savings. According to an email from Adrian Jess (Studio E) to Churchman at the time, Artelia had asked us to look for potential costs savings {SEA00006278}. On 19 September 2012, I emailed Adrian Jess and Blaine Cagney (both Studio E) and said that we needed to be ready to discuss value engineering proposals at the review meeting on 21 September {SEA00006162}. Adrian Jess emailed me later that day to say that he had discussed parts of the cost plan with Max Fordham and his view was that whilst there may have been opportunities for capital savings, the savings may have an impact on the programme for the Project {SEA00006178}. In that email, he also attached a list of items on the cost plan that "*jumped out*" (as potential value engineering opportunities), which did not include the cladding.
130. I should also note that Studio E has an internal technical review process, which involves a design review and a technical review by Studio E employees not otherwise involved in the Project. Internal reviews are part of our ISO 9001 Quality Assurance process. They are conducted at key stages in the project and are intended to be a peer review of the work in progress, to share thoughts and cross check that all relevant issues are being considered. I carried out a technical review for the Project after Neil became involved. This is discussed further below.
131. In late August 2012, Andrzej had emailed David Lloyd Jones, Cathrin Beerman, Garry Stewart and Mark Phillips (all of Studio E) regarding holding reviews for "*KALC/Grenfell*" {SEA00006055}. Based on our quality management system, I believe that our internal design and technical reviews for the Project took place in February 2013 and October 2015 respectively, however there was likely to have been some discussion of the Project at the KALC design and technical reviews held on 5 September 2012 and 7 September 2012 respectively. For

example, I asked Adrian and Blaine to prepare Project drawings for the design review on 5 September 2012 {SEA00006065}. I do not have a record of what was discussed on 5 September 2012, and in any event it would have been too early for a technical review of the Project as it was not yet at the technical design stage.

D2 Staircase relocation

132. Although the planning application had been submitted, on 17 September 2012, Mark Anderson (KCTMO) asked us to review the proposed location of the staircase and lift in the Podium {SEA00006126}, and wanted a first draft of revised proposals by the end of the week.
133. In response, I circulated the options for the Podium layout that we had prepared previously {SEA00006126}. Following input from Curtins (eg. {SEA00006144}), I emailed Mark Anderson (KCTMO) my interpretation of what he was seeking for the revised layout on 18 September 2012 {SEA00006155} {BS1/98} and 20 September 2012 {SEA00007777}.
134. We discussed this at the design, cost and BREEAM review meeting on 21 September 2012.
135. Following the meeting, Artelia emailed all attendees with action points {SEA00006229} (misdated). Mark Anderson (KCTMO) agreed to the option I had emailed on 20 September 2012 {BS1/99-103}, which created more space on the Walkway level by moving the staircase to the south-east corner. IBI liaised with Planning and confirmed the current planning application needed to be withdrawn and replaced (called the "Resubmitted Planning Application") {SEA00000064}.
136. After the meeting, Studio E and the design team updated the drawings for the revised layout, and:
- 136.1 Design team meeting 9 was held on 4 October 2012 {SEA00006448}. The minutes state that Studio E reported on consultation with Exova on the proposed draft fire strategy as sufficient to proceed subject to comments from Building Control / the LFB and that Studio E / Exova were to arrange a meeting with Building Control following sign off of Stage C. I believe it would have been premature to have met with Building Control until KCTMO had agreed the Stage C report (which was due by the end of this month), because the design could still change.

- 136.2 Artelia continued to put together a full Project cost plan {SEA00006227}, and was to set up a date for a risk workshop {BS1/104-105}. Artelia emailed Studio E {SEA00006317} a copy of its stage C reports on 3 October 2012 {SEA00006318}, which included a cost plan {SEA00006319} and programme.
- 136.3 There was a renewed interest in tilt and turn windows (instead of horizontal pivot windows) as it was thought they may be cheaper. Further to our previous conversations with window suppliers, including Alcoa's electronic mock-up of the proposed horizontal pivot {SEA00006248}, Blaine Cagney emailed Hydro {SEA00006251}, Alcoa {SEA00006252} and SAPA {SEA00006253} to indicate there had been a potential change of direction regarding the window under consideration for the Project and that we may need some further information. We were hesitant to procure full samples until Leadbitter had directly engaged with the potential suppliers, to avoid wasted effort {SEA00006332}.
- 136.4 On 12 October 2012, I met with Mark Anderson (KCTMO) to discuss and agree proposed changes to the Podium {SEA00006360}. My emailed note of the meeting states we had discussed cladding materials, specifically "*Rheinzinc colours preferred over VMZinc. Silver anodised or darker PPC to window frames*" {SEA00002013}.
- 136.5 Max Fordham continued to work on M&E issues including the smoke extract strategy, with Exova (eg. see {SEA00006351}).
- 136.6 On 9 October 2012, Geof Blades (CEP) emailed me regarding a meeting to discuss the rainscreen materials {SEA00006344}. I have no record of why he called me but my recollection is that he thought we may be interested in a zinc composite panel that Reynobond offered. I recall that I met Geof and Debbie French of Reynobond, and our office calendar records it as having happened on 16 October 2012 at SELLP's office. Whilst I do not recall much of the detail of the meeting, in these sort of product representative meetings usually I would have talked them through the drawings and then they would discuss finishes, sizes, fixings

and details. My recollection is that Geof and / or Debbie brought product samples to the meeting, including, I think, a paint effect Zinc ACM, amongst other metal effects Reynobond offered. (It is possible that the product they came to show is Zinc Patina D9120M. I have a picture of a sample of this material from April 2014: in {SEA00010804} it is the larger sample top right and in {SEA00010817} you can see the back). I do not recall CEP or Reynobond discussing the plastic core of the panels nor providing any recommendations for buildings over 18m in height. Reynobond's name would continue to come up in the next stage in conversations with contractors. However we never approached them directly for advice, nor Alucobond whom I had been aware of since I was a student.

136.7 Regarding vehicle access, Marc Watterson of IBI advised me and others that the RBKC transport officer had raised an objection to the Application because of perceived loss of parking {BS1/106-109}. Adrian emailed Curtins to ask whether there had been any testing carried out on the road base / vehicle movement, and gave an example of a fire engine on the eastern side of the Tower {BS1/110-111}. There was some discussion regarding vehicle movement in and around the Tower site {BS1/112-113} and Curtins stated that there was a risk that access to the Tower was tricky {BS1/114-115}. Later, we advised KCTMO to obtain specialist advice on the approach for vehicle management at the site, which I discuss further below.

136.8 Syntegra continued to develop the BREEAM pre-assessment, producing a revision B draft on 17 October 2012. Shortly before this, Adrian Jess (Studio E) had emailed Syntegra attaching the current elevations and details drawings for the proposed cladding {SEA00006300}. The draft BREEAM pre-assessment stated that the Project could achieve the standard of "Good".

137. On 18 October 2012, Marc Watterson (IBI) wrote to Planning to withdraw and resubmit the planning application.

138. In late October 2012, following design team meeting 10 {SEA00006447}, Studio E issued the Stage C report {SEA00006429}.

D3 Studio E's appointment

139. In terms of appointments, there was little progress to resolve the uncertainty during September and October 2012, save for a meeting on 19 September 2012 between Artelia, Leadbitter and myself {SEA00006161}. I understand that Artelia was putting together an overall Project cost plan for KCTMO {SEA00006227} and "*managing the governance aspects*" of the Project for KCTMO at this stage, although I am not sure precisely what the latter would have involved {BS1/123}.

**E NOVEMBER 2012 TO APRIL 2013: PROJECT EFFECTIVELY ON
HOLD**

140. In this section I describe:

140.1 My background to the general ongoing tasks during the early part of this period, before the AAP meeting;

140.2 Studio E's first meeting with Building Control, and the fire safety issues being discussed around this time;

140.3 The progress of the planning application, including the presentation to the AAP and the considerations arising from the AAP's comments;

140.4 My understanding of the position of Leadbitter by January 2013;

140.5 The status of Studio E's appointment; and

140.6 My understanding of KCTMO's concerns about the costs of the Project, and the work that arose from this.

E1 Background to general ongoing tasks

141. Shortly after the resubmission of the planning application, there was a design team meeting {SEA00006447}. I note from the minutes that Leadbitter / Bouygues had approached EAG to advise on the installation of cladding. I do not recall meeting EAG and I was unaware of the input they gave to Leadbitter on the Project. The minutes also state that Studio E was to liaise with window suppliers for a full mock-up sample of an individual window. On 22 October 2012, CEP emailed us a window specification information regarding tilt and turn windows {BS1/124-125}. However, by early November 2012 my understanding was that replacing the pivot windows with tilt and turn windows was no longer a potential area for value engineering and the cost plan continued to provide for a pivot window {SEA00006502}.
142. Regarding the way in which the Project was being procured, it was my understanding that the pre-construction services agreement between KCTMO and Leadbitter was to be agreed imminently {SEA00006708}. I believe it was Leadbitter's understanding that after we had completed the Stage D report, that report would form the basis of the Employer's Requirements and the Project would move to the next phase with the design teams' appointments novated to Leadbitter. This would mirror what had happened on KALC {SEA00006708}. By early December 2012, Leadbitter had not contacted me regarding SELLP working on the remainder of the Project {SEA00006818}.
143. Leadbitter was involved in the Project during late 2012. For example, representatives of Leadbitter attended a risk workshop meeting on 18 October 2012. The risk workshop was held in the morning and the design team meeting in the afternoon and hosted by Artelia. The main output from the meeting was a risk register (which was updated by Artelia from time to time (eg. {SEA00006707} of 26 November 2012). One action arising from the risk workshop was "*Leadbitter to begin liaison with Building Control*" {BS1/126}. I am not aware whether Leadbitter raised any questions with Building Control. However item 35 of the Project Risk Register is titled "*Transfer of Building Control Responsibility from Design Team to Contractor*" {SEA00006707}. On 25 October 2012, David Hale (Artelia) said Mark Anderson (KCTMO)

confirmed that Building Control must be used, and not an approved inspector
{BS1/126}.

E2 First meeting with Building Control and fire safety issues

144. There was a workshop on 25 October 2012, organised by Adrian Jess (Studio E), involving Max Fordham, Curtins, Exova and Studio E, partly in order to "*have a brief discussion on respective design issues to highlight areas for further coordination, with a particular focus on allowing [Exova] to make contact with RBKC Building Control as soon as possible*" {SEA00006394}. I do not believe I have a note of this meeting. The office calendar shows I was at the Hounslow planning department that morning but I do not recall if I got back for the meeting in the afternoon. Having discussed this meeting with Adrian Jess for the purpose of preparing this witness statement, he says he remembers discussing sequences and building services with Exova and Leadbitter.
145. I note that, on 6 November 2012, Adrian Jess (Studio E) attended a meeting with Terry Ashton (Exova) and John Allen and Dave Gammon (both of Building Control) {SEA00006526}. I believe that the purpose of a meeting at this stage would have been to get an initial idea of Building Control's thoughts on the Project to ensure that the current proposals and fire strategy were broadly in line with Building Control's requirements and to avoid any late changes to the Project. Adrian's summary of the meeting states that Building Control was "*reasonably comfortable*" with the current layouts but had some concerns about the dry riser and smoke extract system {SEA00006505}. These are primarily M&E issues, which is why we passed the information on to Max Fordham. I note that, in a paragraph dealing with the smoke extract system, Adrian Jess wrote "*there were concerns raised about fire containment*".
146. My reading of this is that Building Control would have had concerns about how the smoke ventilation system would contain a fire on the 'fire floor' while ventilating smoke to atmosphere. They may have also have been concerned about the protection of the risers, stores and cupboards within the lobbies. (This exact point was raised a year later in the mark-up to the proposed fire strategy prepared by Paul Hanson (Building Control) "*Risers accessed from common lobbies*"). My understanding from the note is that Building Control did not express any concern about the proposed cladding to the Tower, or the detail thereof, which I believe at that stage would have been based on Celotex FR 5000

and VMZinc composite, and Building Control "*generally accepted*" the proposed means of escape strategy, which included that "*existing residential to remain in flats and evacuated on instruction by LFB*" {SEA00006526}.

147. Before the meeting with Building Control on 6 November 2012, on 31 October 2012, Terry Ashton (Exova) had emailed Adrian Jess (Studio E) to say that Exova had finished the OFSS, a report on the applicable statutory controls in respect of fire safety, containing an outline fire safety strategy for compliance with these statutory controls {BS1/127-135}. Adrian responded to Terry agreeing that Exova should issue the document directly to Building Control {SEA00006440}, which Exova did {SEA00006443}. Adrian forwarded this to Max Fordham the next day {BS1/136-137}. Studio E was not responsible for paying Exova's invoices for this work {BS1/138-140}, as it was retained directly by KCTMO.
148. In version 1 of the OFSS {BS1/127-135}, Exova addressed, among other things, compliance with Part B of Schedule 1 to the Building Regulations 2010, with regard to Part B4, which concerns the external spread of fire, by stating "*it is considered that the proposed changes will have no adverse effect on the building in relation to external fire spread but this will be confirmed by an analysis in a future issue of this report*" {BS1/127-135}.
149. I do not recall when I read the section regarding Part B4 of the OFSS, however on re-reading it, I note that Exova did not identify that the proposed overcladding works would present any specific problems or difficulties in respect of requirement B4 of the Building Regulations, therefore there was nothing that suggested to me there would have been a risk in this regard.
150. Throughout November 2012, there were discussions regarding a number of other fire related issues:
- 150.1 Exova considered fire-fighting access, following a query from Colin Chiles of Leadbitter who I understand had been prompted by a resident {SEA00006493}. The query concerned access arrangements for a pumping appliance and the dry riser {SEA00006498}. I believe Exova took this query to Building Control at the meeting on 6 November

{SEA00000078}. I also note that the issue of fire fighting access had been raised by Churchmans in the context of KALC during June 2012 (eg. {SEA00004801}).

150.2 Max Fordham continued to develop its understanding of the existing smoke extract system and proposals for the new system {SEA00006536} {SEA00006543} {SEA00006552}.

150.3 In response to proposed changes to the layout of the new floor Walkway + 1, specifically an issue relating to travel distance from one of the new units, Exova said that an automatic fire suppression system, comprising water mist / sprinklers, would *"add an extra factor of safety but we don't want to offer this at this stage"* {SEA00006742}. My understanding is that this comment related to the new floors only, and not the Upper Floors above.

150.4 Max Fordham stated that if there were to be refuge areas in lobbies, then there should be a refuge telephone system between fire refuge and reception. Adrian Jess (Studio E) explained that mass evacuation was not part of the existing fire strategy and we were not departing from this, *"generally people stay in their flat unless their flat is on fire"* {SEA00006551}.

151. From a planning perspective, although we remained in contact with Planning generally around this time {SEA00006503}, the most significant moment in late 2012 was the presentation of the planning application to the AAP on 15 November 2012. According to the RBKC website, the AAP considers and advises RBKC upon major development proposals in the area and its remit includes to *"evaluate and advise on the architectural and urban design merits of key development proposals, streetscape and other public realm projects"*, *"promote and publicise high quality architecture and urban design in the Royal Borough"* and *"make representations to the Planning Inspectorate where necessary"*. Andrzej Kuszell (Studio E) was a regular panel member on the AAP but architects are not invited to appraise their own firm's projects and I presented on behalf of Studio E.

152. Before, and in preparation for the AAP meeting, I reviewed the slides and presentation boards that we were to present with Andrzej Kuszell (Studio E) and David Lloyd Jones (who was a partner at SELLP and is a director at SEAL) {BS1/141}.
153. The AAP considers a number of proposals at each sitting. The format of the evening was that each team presented its projects to the panel and audience, which would have included councillors and representatives from Planning, and then the presenting team leaves the room for the panel to discuss the scheme amongst themselves, with reference to the boards pinned up on the wall. The team is invited back after approximately 20 minutes and the chair relays a summary of the comments raised. It is not a debate and we are not given an opportunity to respond. A few weeks later a formal summary is issued back to the presenting teams via Planning. The comments are for the benefit of Planning and it is their prerogative if they wish to use them. I presented 11 slides {SEA00006660}. My own notes of the feedback refer to the panel stating "*it looks dull*", "*more colour*", "*needs to be bolder*", "*why not make the windows bigger*", "*opportunity to do something with the top of the building*" {SEA00006663}. In short, we were encouraged to increase the window openings, reconsider the cladding aesthetics, omit the canopy which had been designed for the base of the Tower, and explore elaborate ideas for the Crown.
154. Following the AAP meeting, we attended further planning application progress meetings with Edward George and Richard Craig (both of Planning), KCTMO and IBI, including on 20 November 2012 {SEA00006697}{SEA00006675} and 27 November 2012 {SEA00006724} to address the AAP comments. Among other things, we:
- 154.1 Modified the internal configuration of the Mezzanine level. We had written to Exova about these changes, from a fire safety and evacuation perspective {SEA00006705};
- 154.2 Omitted the canopy, which was essentially a skirt to the Podium, which has been discussed above (the panel did not think this was justified);

- 154.3 Increased the height and elaborated the design of the Crown to the Tower;
- 154.4 Developed the options for the external cladding, by making the windows slightly larger. We had discussed the suggestion of making the windows bigger with Max Fordham {SEA00006671}, who responded that it would lead to more heating required in winter and more overheating in summer {SEA00006674}. However I wasn't sure what window sizes its original thermal studies were based on and wasn't sure of the accuracy of this comment; and
- 154.5 Although we were comfortable with the proposals we presented to the AAP, we felt we had no choice but to continue to explore colour palette options, including a yellow and orange {SEA00006721} and pink-yellow gradient {SEA00006722}. Mark Anderson (KCTMO) said the yellow / orange / red palette was not well supported by KCTMO {BS1/142}. I asked Michael Cabaj, a former employee of Studio E, to assist in preparing images of different colour options.
155. On 16 November 2012, Adrian Jess (Studio E) emailed Max Fordham, Churchman, Curtins, Exova, Artelia, IBI and KCTMO and said that all current drawings had been added to the Studio E File Transfer Protocol site {SEA00006666}.
156. On 22 November 2012, I attended a project meeting with KCTMO to address the progress of the Project and the planning issues {SEA00006708}. One of the items discussed was "*alterations to vehicle management around the service yard and garages*". Previously, I had emailed KCTMO as I believed, following the SELLP internal review of slides before the AAP meeting, that a traffic engineer needed to review vehicle movements and comment on pedestrian safety in the yard area {SEA00006533} {SEA00006662}. Curtins had traffic engineers who had worked on KALC and another project in the office so I had put them forward. Curtins was to provide advice directly to KCTMO {SEA00006725} {BS1/143-145}.

157. I understand that IBI had arranged a planning performance agreement between KCTMO and RBKC which would extend the time for Planning to determine the application beyond eight weeks {BS1/146} and meant we would have greater access to Planning officers to discuss the application.
158. On 6 December 2012, Marc Watterson (IBI) sent me his summary of the feedback after attending a further meeting with Planning {SEA00006807}. In short, the message from Planning was "*stick to high quality materials that will lighten the appearance of the tower but this doesn't have to be through a bold colour*" and that Planning was keen to get the application progressed. I had also recently spoken to Edward George (Planning) and given that the canopy was being removed and the Crown enhanced, "*they were less concerned about the need for a bold colourful statement*" {SEA00006818}.
159. In mid-December 2012, Studio E, IBI and KCTMO continued to discuss cladding {BS1/147-149} {SEA00006942} {SEA00006965} {SEA00006972}, and also Crown options {BS1/150-152} {BS1/153-157} {BS1/158-160}. The focus was on the appearance of the Tower and developing proposals that KCTMO and Planning would be comfortable with.
160. On 18 December 2012, Marc Watterson (IBI) asked us what material we were proposing to use for the cladding {SEA00006979}. On 18 December 2012, Adrian Jess (Studio E) responded stating, among other things "*on the existing residential floors we are proposing zinc composite rain screen spandrels to match the columns, grey PPC window frames to control the overall effect of the grid set up by the windows and HPL coloured infill panels within the window banding*" {SEA00006981}. HPL stands for high pressure laminate and an example of an HPL manufacturer is Trespa. I believe I was on holiday at the time, however in my mind the zinc composite rainscreen was just an option at this stage, not a proposal. We had not yet found a supplier for zinc panels of the preferred colour.
161. On 19 December 2012, Adrian Jess (Studio E) and Marc Watterson (IBI) continued to discuss the revised planning drawings {SEA00006991} {SEA00006993}. Adrian Jess emailed Marc Watterson attaching electronic

copies of the amended planning drawings, which he said had been dispatched to Planning by post the same day {SEA00006997}. The drawings show a green / yellow / grey colour palette (eg. {SEA00001918}). On 20 December 2012, Marc Watterson emailed Planning attaching the revised planning drawings for consideration, in anticipation of a formal submission to Planning in January 2013 {SEA00007007}. The next day, Mark Anderson (KCTMO) emailed to say that the proposed colour scheme was "*not liked*" {SEA00007016}.

162. Also on 20 December 2012, Mark Anderson (KCTMO) emailed me and other members of the design team suggesting further changes to the Podium layout {SEA00007003}. At this stage, Studio E was working at risk (albeit mainly on elevation options) because we were not invoicing because we had reached the OJEU threshold {SEA00006739}. I did not think these latest proposals were well considered and I raised my concern with Andrzej Kuszell (Studio E) {SEA00007014}. In addition the Project was projected to be well over budget and I felt we were far from reaching agreement on the appearance of the Tower following the comments from the AAP.
163. On 21 January 2013, I emailed IBI and asked if he had heard anything back from Planning {SEA00007165}. Marc Watterson (IBI) replied saying he had chased them {SEA00007166}.
164. By 1 February 2013, I had received feedback from Planning regarding the green and yellow cladding proposal {SEA00007266}. In short, contrary to the AAP's comments, Planning wanted the colours to be "*calmer and more muted*", and the preference was for natural colours including greys and blacks. In terms of materials, the preference was for metallic materials, textured materials, or materials with some surface interest. I said we would retain the zinc. On 4 February 2013, Richard Craig (Planning) emailed me and said "*we would welcome exploring the use of metal finishes (eg bronze or copper) which is about colour, but could also be about the texture*" {SEA00007275}.
165. As Planning was not happy with the current cladding proposals, Marc Watterson (IBI) said it may be prudent to put the planning application on hold before formally submitting any further proposals to Planning {SEA00007301}.

{SEA00007316}. On 7 February 2013, IBI said it had explained the position to Planning and that KCTMO wished to pause the current planning application **{SEA00007331}**.

166. In my opinion, this meant that Studio E was essentially being stood down because with the planning negotiations at such an impasse we could not proceed without further instruction from the client **{SEA00007315}**.

E3 Position of Leadbitter in January 2013

167. In early January 2013, Leadbitter was still involved in the Project.
168. Artelia circulated a draft of Leadbitter's Buildability Report {SEA00007018} on 2 January 2013 {SEA00007018}. Buildability is a term used to describe how practical it is to build the proposed design, and what problems and what solutions the contractor has identified. Around this time, Leadbitter was requesting further information on various issues which I believe were connected to buildability considerations, such as a request for a copy of the FRA {SEA00007036} to which Adrian Jess (Studio E) responded {SEA00007041}, and a Stage D report from Studio E, which Adrian Jess said Studio E would finalise after finalising the revised planning application {SEA00007046} and I also replied to {SEA00007062}.
169. One of the questions Leadbitter asked around this time was whether we had checked with Building Control regarding the use of expanded polystyrene insulation on a rainscreen cladding system {SEA00007167}. Adrian Jess (Studio E) responded stating that the reference to expanded polystyrene behind the pre-cast concrete overcladding at the Podium levels was incorrect. I think it refers to the original foam-backed plasterboard linings to the external walls in the existing flats.
170. I believe that Leadbitter had identified a potential £300,000 saving by switching the cladding from zinc to aluminium, but do not recall seeing any actual subcontractor proposals {SEA00007298}.

E4 Studio E's appointment

171. On 8 January 2013, Leadbitter asked Studio E to provide draft appointment documentation {SEA00007058}. Around this time, our understanding was that KCTMO and Leadbitter were imminently to enter into a pre-construction services agreement {SEA00007080}.
172. On or around 15 January 2013, I had a telephone conversation with Colin Chiles of Leadbitter regarding Studio E's appointment. After the call, I emailed him explaining that our outstanding fee was around £46,000 (that we hoped to invoice via Leadbitter as soon as possible) and that our fee to the end of the Project from this point was £308,750 {SEA00007114}.
173. On or about 16 January 2013, I spoke with Grant Starling of Leadbitter who said that Leadbitter wanted to appoint the design team (such as Max Fordham and Curtins) through (ie. as sub-consultants to) Studio E {SEA00007121} {SEA00007128}, which Leadbitter said had been agreed (in principle) on 17 January 2013 {SEA00007144}. This would have been a different arrangement to the novation which had been planned.
174. Inconsistent with this agreement in principle, on 21 January 2013 Artelia emailed me attaching appointment documentation for Studio E's appointment to KCTMO which appeared to envisage a novation taking place {SEA00007169}. I raised this inconsistency with Artelia {SEA00007179}. In response, Alun Dawson of Artelia said he thought that Leadbitter wanted to appoint each consultant directly, and not via Studio E {SEA00007183}.
175. Throughout January and February 2013, there was a lot of correspondence between Studio E, Leadbitter {SEA00007223}, KCTMO {SEA00007214} and Artelia {SEA00007220} regarding how to formalise the appointments. By the end of January 2013, Artelia had asked Studio E to confirm whether it would enter into a retrospective appointment (ie. covering the work already carried out) where Curtins and Max Fordham were sub-consultants to Studio E {SEA00007228} (the **Umbrella Appointment**).

176. Although Artelia continued to push for Studio E's agreement in principle to enter into the Umbrella Appointment, as I discussed below, by 5 February 2013 IBI had recommended putting the planning application on hold {SEA00007301}. In my opinion, this meant that Studio E were "*in effect being stood down*", so I asked if it would be possible for Artelia to arrange for the release of Studio E's outstanding fee and to permit further design work {SEA00007315}. Artelia replied saying that the only way to facilitate the payments was for Studio E to enter the Umbrella Appointment {SEA00007317}. I felt it was unreasonable for Artelia / KCTMO to indefinitely delay any further payments to Studio E.
177. I also believed that a landscape architect, fire consultancy and acoustic advisors should also be included in the post-novation team, which I stated in an email to Artelia copying in Paul Dunkerton of KCTMO and Peter Maddison of KCTMO {SEA00007318}.
178. However, on the basis that Exova's appointment might be transferred to Studio E from Stage E onwards, I emailed Exova to ask what its outstanding fees would be {SEA00007327}. Exova said that "*due to the uncertainty about the amount of input that would be needed*", such work would be at an hourly rate {SEA00000095}. On the same day, I received comments on the draft schedule of design deliverables relating to RIBA Stages E - K from Curtins {SEA00007352}.
179. On 13 February 2013, together with Andrzej Kuszell (Studio E), I met Peter Maddison (KCTMO) to discuss the Project. After the meeting, my impression was that the Project was not likely to move quickly over the next few months {SEA00007368}.
180. Following the meeting, I forwarded Studio E's appointment related documents to Peter Maddison (KCTMO), along with a chronology {SEA00007372}. I said that the planning delay and the delay in the transfer of our appointment to the contractor had exposed us to a far greater extent (of costs) than we could have anticipated. From the agreed programme and early engagements with Leadbitter we had expected to be novated in November / December 2012 and had agreed to defer 50% of our Stage D on this basis. I considered that we had completed

Stage D work, with only the protracted planning negotiations having delayed the finalisation of the Stage D report. The delay to the contractor appointment meanwhile was completely out of our control. I therefore noted that we would like to invoice for our outstanding Stage D fee by 22 February 2013.

181. On 21 March 2013, Studio E sent its invoice for the outstanding Stage D fee to KCTMO, valuing the work as being 90% complete, because of the incomplete final negotiations with Planning {SEA00007411}.

E5 KCTMO's concerns about the cost of the Project

182. Despite Leadbitter's continued involvement, I note that KCTMO was concerned that Leadbitter's views on the build costs for the Project were "*unacceptable*" and Mark Anderson (KCTMO) had asked Artelia to review KCTMO's procurement options for the Project {SEA00007022}. I acknowledged Mark Anderson's email as I had been copied in on it, and said that I thought "*a delay is inevitable*" {SEA00007038}. I was aware that Leadbitter was looking at potential value engineering options around this time {SEA00007092} and had asked us about the cladding rates Studio E had used {SEA00007114}.
183. Around mid-January 2013, Mark Anderson (KCTMO) left KCTMO. Whilst I understood Mark Anderson's position to be temporary, his departure was unexpected to me. His replacement, Peter Maddison, was due to take up his post on 21 January 2013 {SEA00007107}.
184. By late January 2013, my understanding was that Leadbitter had indicated that the Project needed "*significant value engineering in order to be affordable*" {SEA00007214}. Around late February 2013, there were various discussions in relation to value engineering and cladding.
185. On 26 February 2013, I received an email from Artelia which said that there was "*a significant deficit between the approved cost plan/budget and the initial figures coming back from Leadbitter - not least of which on the external facade and general fit-out*" which were "*as much as £483k and £1.24m apart respectively*" {SEA00007413}. Artelia asked Studio E to "*come back to us with a radical re-think of the scope/spec (whilst still meeting the original brief)*".
186. I replied the same day stating that it was not possible to undertake a radical re-think without sight of the figures (I had not seen the current versions of Leadbitter's or Artelia's costs plans and had not been party to the costs discussions), a discussion with KCTMO and the involvement of Max Fordham {SEA00007414}. However, I identified obvious targets for savings as follows:

"Omit Garages/Baseline/Undercroft work

Change Zinc cladding material to something cheaper. I think Planning will need a sweetener to swallow this, perhaps copper, ceramic, terracotta or more glass at low level.

Scale back crown. This will be also be Planning sensitive

Change pivot windows for tilt and turn.

Omit flats at mezzanine level. Leave floor slabs as they are.

Defer work specified internally eg kitchen extracts, smoke exhaust, bathroom exhaust."

187. Attempts to reconcile Artelia and Leadbitter's figures continued towards the end of February 2013, when I had sight of the detailed cost plans and differentials. I recall that Artelia viewed our savings targets as downgrading the specification, as opposed to value engineering {SEA00007415}. Artelia wanted to explore the options put forward by Max Fordham in more detail and to revisit the BREEAM requirements {SEA00007420}. At this point, according to Artelia, the focus was on working together to get the scheme deliverable back within budget to avoid KCTMO looking at more drastic options in terms of procuring the works {SEA00007420}.
188. In March 2013, Studio E continued to investigate value engineering options. The focus was on coordinating with the rest of the design team to develop the Project.
189. Artelia was due to meet with KCTMO early in March 2013, so requested my input on the various value engineering options {SEA00007440}. My view was that the magnitude of the overspend meant that the interpretation of value engineering needed to be quite broad. I noted that changing the M&E would have various implications, for instance reducing the U-value of the external envelope, which may in turn lead to comments coming back from Planning in relation to sustainability credentials {SEA00007442}.
190. On 4 March 2013, CEP came into Studio E to discuss the cheaper ACM cladding option and various other value engineering options {SEA00007442}.

191. The schedule of deliverables had still not been agreed between Leadbitter and the design team {SEA00007445}.
192. Studio E continued to investigate cladding systems and products for fixing rainscreen cladding panels and a number of options were discussed internally {SEA00007446} {SEA00007448}.
193. Consideration was also given to value engineering for heating options. Mark Palmer (Max Fordham) put together three alternative mechanical design options to reduce costs {SEA00007485}.
194. Following Artelia's meeting with KCTMO, I was made aware of further value engineering options being proposed by KCTMO {SEA00007489}.
195. I contacted Max Fordham to ask whether it had had any contact with Planning in relation to BREEAM value engineering {SEA00007492}. My understanding, which I communicated to Artelia, was that the requirement from Planning to reach 'very good' was policy driven, but I was not sure if BREEAM was ever discussed with a sustainability officer at RBKC. I considered that that assessment would be somewhat inappropriate given the nature of the proposed work and that it may be possible to value engineer the points {SEA00007494}. The planning consultant, Marc Watterson (IBI), confirmed to me his interpretation that anything below 'good' would raise serious concerns {SEA00007496}.
196. Studio E sent various value engineering options to Artelia in mid-March; however these did not directly address cladding {SEA00007506}.
197. The various discussions culminated in a design review meeting on 26 March 2013.
198. In terms of the contractual position, there was ongoing confusion as to which consultants had been paid and which fees were outstanding {SEA00007518}.
199. We continued to investigate cladding products in April 2013 in the hope that the Project would resume, although we were not actively working on the drawings for the Project.

200. Over the following weeks, Studio E corresponded with CEP in relation to four Reynobond products in different colours and finishes {SEA00007527}.
201. For the reasons discussed further at paragraph 208, the planning application was to be withdrawn, but that had not yet happened, and IBI was keen to know when the revised scheme might be ready for submission {SEA00007531}. My position was that an imminent set of drawings was unlikely given further meetings had been arranged to discuss how the scope might be scaled back further. I was concerned that previous discussions in relation to BREEAM and sustainability issues would be rendered abortive; however I considered that the discussion on the appearance of the overcladding would remain relevant and would be carried over {SEA00007532}.
202. I attended a site visit along with KCTMO on 15 April 2013. Following the meeting I noted that the value engineering proposals forwarded on 18 March 2013 ("*Option 2*") probably represented KCTMO's objectives. It was clear to me that something more than the bare minimum to insulate the building (such as an insulated render) would be necessary to satisfy Planning as to the appearance of the Tower {SEA00007563}. I therefore circulated the samples we had been collecting of alternative cladding options to zinc 1 to 8 (different types of ACM and 9 to 11 (cement particle board) {SEA00007568}.
203. While it appeared that the Project was now progressing again, Studio E's outstanding fees remained unpaid (despite Studio E continuing to carry out additional work in relation to the planning variations) {SEA00007557}.
204. I am aware that Artelia had been asked to put together a report for KCTMO in relation to the Project, because Robert Powell (Artelia) asked me to contribute to it by providing information on the current design and planning submission {SEA00007578}. It was also my understanding from Robert Powell that Artelia and Leadbitter were making progress in their negotiations on cost {SEA00007579}.
205. As before, the uncertain contractual position continued to be discussed. In my response to Robert Powell (Artelia), I stressed the importance of resolving the contractual position to achieve the envisaged sub-consultant agreements with

Studio E as lead consultant {SEA00007580}. Ultimately however, as set out below, each consultant was appointed directly by KCTMO, rather than as sub-consultants of Studio E.

206. In relation to the cladding, Planning had at some point suggested copper, which would have been prohibitively costly and I didn't think that cost could be justified; however, I believed that they may accept something other than zinc on the condition that it was not plastic in appearance and was articulated to a similar degree to the existing pre-cast concrete panels, and I thought aluminium was an option, not least because it was lightweight and had limited risk of corrosion. The change in material at the lowest levels still needed to be agreed, while the earlier discussions on colour with Planning had not reached a definitive conclusion. The last communication was "*calmer and more muted*", "*metallic, textured or materials with surface interest*" {SEA00007266}.
207. Further to the above issues and apparent requirements of Planning, I raised the idea of using Alucobond (a supplier of ACM panels), on the basis that it had been suggested to me by numerous parties and there were various colour options with this product {SEA00007588}. In preparing this witness statement I am reminded that Harley in fact later said that in its experience clients tend to adopt the cheapest cladding option due to budget constraints {SEA00008790} and I believe that Geof Blades (CEP) also indicated something similar to me at some point. I had therefore been advised by various entities, including Harley, that ACM was effectively the most common material to use for overladding of residential tower blocks. On 19 April 2013, Marc Watterson (IBI) agreed Alucobond was worth a try, pending receipt of the samples {SEA00007589}.
208. In relation to the possible revisions required to the Project proposals following Mark Anderson's (KCTMO) email of 20 December 2012, as well as the need to address the cladding following the AAP meeting, Marc Watterson (IBI) noted that it would be too different from the existing application and would therefore require withdrawal and resubmission of the fresh application. Marc Watterson communicated to me what he considered Planning's position on the revised scheme would be. In relation to the cladding, this would be a material that "*does not look manufactured*" and "*colour that is not too bold*" {SEA00007591}.

209. On 22 April 2013 I met with Jason Tisbury of CGL Systems (CGL), a façade designer and manufacturer, in our office to discuss another project. Following the meeting, Studio E ordered samples of Alucobond Spectra and Metallic colours and requested further information on cladding pricing and subcontractors. I had asked Jason Tisbury to provide me with contact details for appropriate subcontractors which we might approach to discuss the detail of the cladding on the Project. By this time I understood that CEP were a fabricator rather than an installer and could only give limited comment on actual costs and details. The names were Conneely Facades, Harley, Kovara Projects Ltd and Paneltec Ltd (**Paneltec**). It was several months before I followed up any of these contacts. Jason also provided indicative rate comparisons as follows {SEA00007602}:

209.1 Folded Zinc, mill finished – approx. £90 per metre;

209.2 Folded aluminium (pre-painted PVDF, probably Euramax) approx. £65 per metre;

209.3 ACM – Spectra Alucobond approx. £90 per metre; and

209.4 ACM – Reynobond / Alucobond approx. £85 per metre.

210. Further to the above meeting, Studio E made enquiries with cladding supplier 3A Composites GmbH in relation to Alucobond, requesting samples, relative costs per square metre compared to other similar products on the market and details of installation and life expectancy. Studio E requested samples for five Metallic colours and 11 Spectra & Sparkling colours {SEA00007598}. In relation to installation, Blaine Cagney (Studio E) confirmed that we had been looking at the flat sheet panel rather than the cassette approach {SEA00007598}.

211. Harley must have been notified separately by Jason Tisbury (CGL) as it contacted me to confirm its interest in the proposed overcladding scheme for the Tower and that they had experience of overcladding tower blocks in London, stating "*Over-cladding tower blocks is very much what we do...*" and attached pdfs relating to three of its residential tower block projects in London (Castlemain, Chalcot and Clements) {SEA00007603}. In preparing this

statement, I note that the five tower blocks at the Chalcot and Clements projects referred to in this correspondence are stated to have incorporated ACM.

212. On 26 April 2013, I attended a meeting with Peter Maddison, David Gibson, Paul Dunkerton (all of KCTMO), Robert Powell (Artelia) and Mark Palmer (Max Fordham). The purpose of the meeting was to review the design options for the Project {SEA00007627}.
213. Following the meeting, Artelia emailed KCTMO and stated, among other things, in order to meet a construction budget of £8.5M and to incorporate the "*advised requirement for a decent homes document*", then "*this will have a material impact on the treatment of the external envelope of the building and possible the scope of works around the base of the tower*" {SEA00007617}. On 30 April 2013, KCTMO agreed to halt the planning application {SEA00007618}.

F MAY 2013 TO AUGUST 2013: PROJECT REINVIGORATED

214. In this section, I:

214.1 Provide an overview of the work I was involved in around May 2013 whilst Artelia and KCTMO considered the draft revised brief for the Project;

214.2 Provide an overview of the work I was involved in during June and July 2013, following the revised brief; and

214.3 Provide an overview of any other issues that might be relevant during this period.

F1 Considering the draft revised brief

215. On 3 May 2013, Artelia emailed KCTMO, Max Fordham, Curtins, IBI and Studio E about setting up a design review, value engineering and design meeting {SEA00007625}. On 8 May 2013, Artelia circulated (also including Leadbitter) {SEA00007638} a draft revised brief for the Project {SEA00007639}, near term action plan and an agenda for a "*VE and Project Review Meeting*" {SEA00007641}.
216. Among other things, the draft revised brief stated:
- 216.1 That the principal contractor (Leadbitter) had proposed some value engineering items including "*change from aluminium frame windows to UPVC windows*" and "*change from aluminium cladding and Schuco curtain wall and windows to Insulated Render and standard Aluminium frame windows*"; and
- 216.2 The target criteria for the Project had not changed and were to achieve modern-day standards for the flats, reduce overheating and improve thermal efficiency, increase the number of units contained within the Tower and create a "*'legacy' project for the borough*".
217. My handwritten note indicates that the meeting may have taken place on 9 May 2013 {SEA00007642}. One of the proposals arising from the meeting was to use uPVC windows (instead of aluminium) and insulated render (instead of aluminium cladding) {SEA00007652}. There were further emails and lists which captured some of the outputs from this meeting {SEA00007651}, including on 16 May 2013 a document from KCTMO with a summary of the value engineering process {SEA00007659}. I note this document did not specifically refer to changes to cladding but did identify a saving from removing the proposed Crown to the Tower {BS1/161-167}.
218. I considered that the insulated render was highly unlikely to be accepted by Planning. Although they had even once mentioned it, I believed that Planning would reject render because it is not sufficiently durable. The landlord, KCTMO, would not be able to maintain a render over the long term - the

building is too tall to gain easy access for necessary pressure washing and repairs. In any event, on 13 May 2013, IBI forwarded an email from Planning which said that insulated render would not be supported if put forward as a proposal for the Project {SEA00007649}. Another issue discussed at the meetings was the proposal to reconfigure the Podium floor plans {SEA00007647}.

219. On 22 May 2013, Robert Powell (Artelia) emailed IBI and Studio E and reported back on a meeting he had with KCTMO. He said that his *"perception is that if we retain the planned external envelope treatment, alloy windows and only reduce the scale of the crown, then we are not departing too wildly from the existing planning application"* and that the *"upshot of all of this is that; at present we should carry on with the existing application for consent"* {SEA00007672}. KCTMO had not yet signed off the revised brief. According to Robert Powell, the programme was now to be *"subordinate to questions of value for money"*.

220. Regarding Studio E's appointment, I would also note that:

220.1 The draft revised brief stated that the overall professional fee position was to be assessed and that the various consultants would be invited to resubmit fee proposals once the extent of revision of the scope of work had been confirmed. Previous plans to novate all designers to the principal contractor were to be reviewed. It was also noted that the procurement and appointment of the professional team and the principal contractor were to be reviewed, with Artelia taking on a full project management / employer's agent role in addition to their quantity surveyor responsibilities and fulfilling the lead consultant role {SEA00007639}.

220.2 At this point Studio E's outstanding fees remained unpaid and I expressed my view to Artelia that dedicating ongoing resource to the Project whilst in this position and without an anticipated time frame for restarting work and the follow-on stages would not be justified {SEA00007654}.

220.3 On 24 May 2013, Artelia emailed KCTMO, recommending payment of our outstanding fees to completion of Stage D in the sum of £39,900.

Following this, there was some negotiation about the level of fees, particularly given the fact that Studio E had been reworking the planning application to incorporate the various client variations {SEA00007689}. On 3 June 2013, KCTMO wrote to Studio E {BS1/168-169} and said among other things "*we are seeking confirmation that you will warrant your design work completed to date*" and I replied "*any warranty won't be a problem*" {SEA00007714}. Our invoices were processed for payment on 5 June 2013 {SEA00007716}.

F2 Revised brief

221. By 10 June 2013, Philip Booth (Artelia) emailed me a document which he said was the revised brief {SEA00007721}. The brief stated, among other things, that the primary project driver was "value for money" {SEA00007722}. In the covering email, he also said "TMO have yet to advise Leadbitter of their intention to go to the market to demonstrate and deliver best value for money".
222. The revised brief necessitated a further reconfiguration of the Podium layout. On 19 June 2013, I emailed Peter Madison and Paul Dunkerton (KCTMO) regarding three alternative options for the Podium layout {SEA00007766} and others that Studio E had looked at over the last 12 months {SEA00007771}. There was a meeting with Planner on 24 June 2013 {SEA00007796} {BS1/170-171}. Following the meeting, on 2 July 2013 I emailed KCTMO showing more advanced drawings to reflect the proposed new Podium layout {SEA00007803}.
223. A description of the changes to the application can be found at {BS1/172-177}:

"The coloured infill panels at the podium and between the windows have been substituted for a graded series of monochrome panels. At the upper level these will be white. The proposed zinc over-cladding to the majority of the elevation is unchanged.

The extension to the cladding at the top of the tower has been reduced in height and now consists of an alternating series of zinc and white panels without colour.

The conversion of 5no.garages opposite the entrance to the tower into offices is omitted and two bays are to be converted to secure cycle storage and space for recycling bins. Similarly the alterations to

EMB/RA office unit under Barandon [sic] Walk has been omitted.

The internal arrangement to the podium has been changed so that the residents' entrance and new fire escape stair are separate. The new stair will become the primary means of access to the boxing club. A second

door at ground level will permit the boxing club to control this stair while it continues serve as a fire escape for the whole the tower.

The estate office now extends over three floors and has its own dedicated accommodation stair.

The proposed bridge to the walkway is omitted, as is the existing bridge connection which is currently unused."

224. On 29 July 2013, IBI asked me to submit all plans that I had revised to Planning {SEA00007858} and IBI provided a covering letter to Planning {SEA00002077}.

F3 Other points

225. In relation to cladding:

225.1 During June 2013, I put together a colour study of various cladding options {SEA00007786}. At the meeting Planning on 24 June 2013, we discussed elevations and that "*materials would still be subject to condition, but working on the basis of zinc (or similar)*" {SEA00007796}.

225.2 Councillor Feilding-Mellen was also interested in the cladding {SEA00007836}. We met with Councillor Feilding-Mellen on or around 10 July 2013 regarding the proposals {SEA00007822}. This was the first of perhaps only two or three conversations I had with Councillor Feilding-Mellen on the proposed cladding. I prepared a document describing the options being considered {SEA00002067} and I believe I took samples of zinc and possibly ACM to the meeting. I thought Councillor Feilding-Mellen was supportive of the proposed zinc. I do not recall that budget or affordability was discussed.

226. In relation to Studio E's appointment:

226.1 Paul Dunkerton (KCTMO) also confirmed that that Project would be re-mobilised following the re-briefing exercise, with a reasonable uplift in fees to reflect the additional input required to develop the revised scheme and formal contract arrangements would be set in place {BS1/178-179}.

226.2 I sent our proposed fee to Peter Maddison (KCTMO) on 3 July 2013 {SEA00007808}. My letter included a proposed fee for reinvigorating the Project and fees to completion and a summary of Studio E's position regarding the Stage D fee.

226.3 After submitting our revised drawings to Planning I emailed Artelia to check whether there had been further discussions with KCTMO regarding progressing the next stage of the Project {SEA00007866}, which was tender.

- 226.4 I then received an email from Philip Booth (Artelia), whose understanding was that the lead consultant role would be undertaken by Artelia {SEA00007867}. I sought to clarify the position as it was not clear whether Studio E would be sub-consulted to Artelia and / or would remain lead designer {SEA00007880}.
- 226.5 In relation to Studio E's fees, Artelia verbally confirmed that our fees for Stage E (£54k), F1 (54k), F2 (£36k) and construction (£90k) were accepted {SEA00007891}.
227. I would also note that:
- 227.1 On 4 June 2013, Paul Dunkerton (KCTMO) emailed me regarding some electrical issues at the Tower in May 2013 {SEA00007715}. I forwarded this email to Max Fordham on 18 August 2013, as it was the M&E consultant {SEA00008036}.
- 227.2 Throughout June 2013, there were discussions regarding the proposal to remove an existing Walkway access stair as part of the KALC works. I believe this arose from concerns raised by the Grenfell Action Group {SEA00007757}. The stairs {SEA00005666} {SEA00007760} had been locked at least since Studio E's involvement on KALC and I did not understand that they were required for fire escape from the Tower {SEA00007758}. On 18 June 2013, I emailed Leadbitter regarding the position with the assistance of a picture of the stairs showing that the gate was clearly chained and was therefore not an active fire escape {SEA00007759}. The primary escape route for residents exiting the fire stair at Walkway level was via a door on the north side of the core, and then via the open gallery to the concrete stair on the south-east corner. The stair in question was removed by Bouygues as part of KALC.
- 227.3 In relation to the Crown, on 4 July 2013, I received an email from Marc Watterson (IBI) reporting that Planning preferred a mid-height roof Crown {SEA00007817}.

**G AUGUST 2013 TO NOVEMBER 2013: TECHNICAL DESIGN AND
PREPARATION OF EMPLOYER'S REQUIREMENTS**

228. In this section, I:

- 228.1 Provide background to explain the significance of the Stage E in the design process;
- 228.2 Describe the drawings, schedules and specification that Studio E finalised for KCTMO to issue for tender;
- 228.3 Provide some background on the progress of the Project, Studio E's appointment and the Podium layout;
- 228.4 Describe the NBS specification prepared by Studio E regarding the Tower envelope in this period, including regarding the cladding, windows and kitchen extract fan;
- 228.5 Provide an overview of the M&E works that Studio E was aware of as ongoing, including the smoke ventilation system;
- 228.6 Outline the interactions we had with Building Control in terms of the preliminary submission; and
- 228.7 Illustrate a selection of other issues that occurred during the Stage E period.

G1 The significance of the Stage E design in the design process

229. In the RIBA Outline Plan of Work 2007, Stage E refers to "technical design", coming after Stage D (Design Development) and before Stage F (Production Information). To quote the RIBA Plan of Work: Stage E was intended "*to co-ordinate components and elements of the project*" and "*for statutory standards and construction safety*".
230. I proposed that the design team develop the design to an intermediate stage - RIBA Stage E - and I believe that Artelia / KCTMO agreed. I believed it was necessary for us to develop the design beyond the planning stage, or RIBA Stage D, because the scope of the refurbishment was complicated, particularly the alterations and additions to the Podium, and to accurately price the work it needed to be clearly defined and coordinated. I thought that Max Fordham's M&E packages needed to be developed and coordinated further or we would be at risk of contractors not being able to price the work at all, which could result in these packages being included as provisional sums, and thereby expose the client to a significant financial risk.
231. Therefore, during this period the design team, including Studio E, prepared the Stage E Employer's Requirements so that KCTMO could then invite tenders for the Project from potential contractors. This period of Studio E's engagement on the Project lasted from around August 2013 to December 2013. Studio E's role in preparing the Employer's Requirements was to develop the architectural drawings, specifications and schedules to a sufficient level of detail to coordinate with the other designer's input to enable KCTMO to tender the Project.
232. Other members of the design team were responsible for preparing drawings, specifications and schedules relating to their design packages, such as M&E (Max Fordham), structural engineering (Curtins), fire safety (Exova), landscaping (Churchman), etc. However, to the extent the packages had interfaces with each other (such as where the route of a duct needed to be checked to avoid clashes with beams, walls and ceilings), I understood that Studio E was lead designer and that we had the primary coordination role.

233. By way of background, around or shortly before the start of the Stage E process:
- 233.1 A design review meeting was arranged for 12 August 2013, the purpose of which, according to Philip Booth (Artelia), was to reach "*an agreed programme for designing up to tender documentation*" and "*an agreed plan for additional surveys*" {SEA00007921}. Before the meeting, on 9 August 2013, I had emailed Sasha Kulidzan (KCTMO) {SEA00007927} with a link to the full set of planning drawings {SEA00002093};
- 233.2 On 20 August 2013 I emailed Philip Booth (Artelia) and Peter Madison and others at KCTMO, copying in individuals at Max Fordham, Curtins and Appleyards, providing a link to the completed Stage D report. I noted at that time that "*Exova's Fire Safety report from January is included, as is the updated BREEAM pre-assessment and Artelia's programme and revised cost estimate*" {SEA00008052}; and
- 233.3 On 20 August 2013, I emailed Philip Booth (Artelia) to confirm that I had issued the updated Stage D report electronically {SEA00008147}. An email from Philip Booth on the same date confirmed that the OJEU notice had been published with the pre-qualification questionnaire (PQQ) return date of 20 September.

G2 Drawings and schedules and specification that Studio E finalised for issue for tender

Drawings

234. A list of the drawings that we prepared during the tender is at {SEA00002663}.
235. I was assisted in the preparation of Studio E's drawings during this period by several colleagues but predominantly Tomas Rek and Paddy Glennon (both of Studio E). Tomas helped mainly with the detailing and preparing the specifications while Paddy helped mainly with the Revit model from which the plans, sections, elevations and schedules were derived {SEA00009455}. From time to time, we sought advice from third parties about these drawings (eg. from Max Fordham regarding thermal bridging around the Crown element {SEA00009012}).

Specification

236. A specification is a text document that supplements the drawings and provides a description of the materials and products to be used in a building. The NBS, which is a product produced by an entity owned by RIBA, began as a standard template for the specification of workmanship, products and design, and has been developed into a full digital authoring application. It is widely used by architects to prepare construction documentation in the UK. The NBS is broken down into sections that align approximately with the trades one typically finds on site. The engineers and the landscape architect have sections for the elements that tend to fall in their scope of work and the final NBS is meant to be a single definitive document, albeit easily broken down to circulate to subcontractors. The NBS is a core part of the Employer's Requirements. The tenderers then use the Employer's Requirements to come up with their proposals (ie. the Contractor's Proposals) for delivering the Employer's Requirements, and pricing up the various aspects of the Project. Under a design and build procurement the main contractor / its specialist subcontractors would have a discretion to propose alternative products and materials. On the Project, Studio E used the NBS software to prepare the specification.

237. Artelia managed the tender process, whereby all tender documents were uploaded to a sharepoint site and the shortlisted contractors were given access. Studio E's list of Employer's Requirements is as per the Document Register and Issue Advice {SEA00002663}, on the column dated 29 November 2013 and includes the NBS. We uploaded our documents directly to the sharepoint site about a week earlier and Artelia formally issued the tender on 29 November 2013. An updated version of the NBS was provided to tenderers on or around 30 January 2014 {SEA00000169}. To the best of my recollection, the only material change between the two versions of the NBS Specification was that, in the latter version, clause L20 (doors) had been revised. Specifically, the specified timber door supplier, Leaderflush Shapland, was substituted for David Smith St Ives Ltd. This followed a tender query received which claimed that Leaderflush was not prepared to price the specification provided ({SEA00010370})
238. In the final version of the NBS, the main elements of the cladding package were as follows:
- 238.1 For the rainscreen cladding to the Existing Floors (levels 4-24 and pilasters): Proteus HR honeycomb panels manufactured by KME Architectural Solutions for the columns (clause H92/120 {SEA00000169_0065}) and spandrel panels (clause H92/123 {SEA00000169_0066}), with the option for contractors to price alternatives;
- 238.2 For the insulation behind the rainscreen: Celotex FR5000 (H92/776 {SEA00000169_0073}), with the option for contractors to price alternatives; and
- 238.3 For the windows: Wicono UK aluminium tilt and turn windows (L10/331 {SEA00000169_0144}) and Wicono UK fixed aluminium infill panels (L10/332 {SEA00000169_0145}), with the option for contractors to price alternatives.
239. Studio E introduced a change in colour and panel size for the rainscreen cladding to the Podium, to differentiate it from the mass above: including CGL Wallplank for the aluminium rainscreen (H92/125 {SEA00000169_0067}), Wicono UK

WICTEC 50 for the curtain walling (HI1/110 {SEA00000169_0043}) and Glass Reinforced Concrete for the column cladding (H40/130 {SEA00000169_0056}). I understand that the cladding of the Podium is not a particular focus of the Inquiry, therefore I do not focus on it in this witness statement, however I would be happy to discuss this further if this would be of assistance.

240. I also note that on 1 November 2013, Curtins emailed Artelia attaching structural specifications, presumably to be included as part of the Employer's Requirements {SEA00009561}. One of the documents was titled "*Structural Performance Specification For the Design, Supply and Application Of Overcladding Systems to Grenfell Tower*". On reading this document in preparation of this witness statement, paragraph 7.1.13 states "*The system should comply fully with the recommendations of the BRE document "Fire Performance of External Thermal Insulation for Walls of Multi Storey Buildings", second edition, 2003*" {SEA00002368}.

241. Whilst Studio E had undertaken to prepare a RIBA Stage E tender package I believe what we produced was closer to RIBA Stage F1, albeit many aspects of the specification were expressly envisaged to be subject to the successful contractor proposing alternatives. The full NBS, schedules and detail drawings of internal areas meant that the contractor had clarity on the scope of work they were being asked to price.

G3 Project progress, appointments and the Podium layout

242. From around September 2013, Claire Williams became our main contact at KCTMO {SEA00008465}. On 18 September 2013, Paddy Glennon (Studio E) emailed Claire Williams some before and after images which showed the changes the Project would have on the Tower {SEA00008473} {SEA00008477}. On 19 September 2013, Claire Williams asked if she could speak with me about the Project to help her get to grips with it {SEA00008509}. I imagine we did meet to discuss the Project, although I do not recall a specific meeting. I believe Claire told me that she had an architectural background and had previous experience in a similar project manager role, possibly with Peter Maddison (KCTMO) as well.

243. At this stage, Planning had not confirmed its recommendations regarding the Application. For example, on 24 September 2013, Marc Watterson (IBI) emailed me, KCTMO and Artelia stating Planning had indicated that the scheme was going forward as submitted, but that there were some outstanding issues relating to Section 106 agreements {SEA00008638}. Section 106 agreements are a mechanism under the Town and Country Planning Act to allow planning authorities to mitigate the impact of a development. This was not something I had much involvement in as it was more of an issue for IBI than Studio E {SEA00009091}. According to Marc Watterson, as at 3 October 2013 there had been fewer than four objections to the planning application {SEA00008970}.
244. The cost plan that Artelia had prepared for KCTMO showed that, as at 23 August 2013, there was a difference between the overall Project funding secured by KCTMO and the estimated Project cost of £273,000 {BS1/180-182}, which represented an uplift of approximately 2.8%. This suggested that looking for large savings at this stage was not warranted.
245. In terms of monitoring risk, at the design team meeting on 24 September 2013, Artelia intended to discuss a *"very draft"* risk register {SEA00008564}{SEA00008568}. My understanding is that Artelia's risk register represented risks to the delivery of the Project (the risks were scored for *"likelihood"*, *"cost impact"* and *"programme impact"* (eg. time delay)) rather than risks once the Project was completed. Therefore, although the risk register refers to the smoke ventilation system and fire strategy as risks of causing delays or additional costs, I have not discussed Artelia's risk register further in this witness statement, as I do not consider that they are particularly relevant to the Request.
246. Studio E also had its own risk assessment under the CDM Regulations {SEA00009350}.
247. Although the tender documents were due to be ready by 1 November 2013 {SEA00009175}, by 18 October 2013 I felt that this deadline was unlikely to be achievable because we were still awaiting information from KCTMO to our list of queries and an instruction to appoint a landscape architect to prepare the

external works package, layouts for the Podium had not been fixed and I felt further coordination was needed {SEA00009228}.

Studio E's appointment

248. On 8 August 2013 I emailed Philip Booth (Artelia) requesting additional clarification in relation to updating the draft appointment {SEA00007902}.
249. In reply to my email, on 23 October 2013, Philip Booth (Artelia) emailed me and KCTMO regarding SELLP's contract for the Project, proposing that a number of changes were made to the fee schedule, payment terms and scope of services {SEA00009355}. He asked KCTMO how it would like to execute the contract. The same day, Artelia asked Curtins to amend its appointment and requested alterations, for example to make clear that Artelia were the lead consultant, quantity surveyor and employer's agent {SEA00009356}.
250. The documents that Philip Booth (Artelia) attached to his email to me were:
- 250.1 A draft unsigned memorandum of agreement {SEA00007910};
 - 250.2 The RIBA Standard Conditions of Appointment for a Consultant 2010 {BS1/183-197};
 - 250.3 The RIBA amendment 1 to the RIBA Standard Conditions of Appointment {SEA00004553};
 - 250.4 Appendix A, titled "*Project Data 2010*" {SEA00007912};
 - 250.5 Appendix B, titled "*Services 2010*" {SEA00007906};
 - 250.6 Appendix C, titled "*Fee and Expenses Schedule 2010*" {SEA00007913};
 - 250.7 Appendix D, titled "*Project Brief*" {SEA00007914};
 - 250.8 Appendix E, titled "*Public Authority Supplement 2010*"; and
 - 250.9 A fee schedule {SEA00007903}.

251. The next day, on 24 October 2013, I emailed Andrzej Kuszell (Studio E) regarding Artelia's proposed amendments to SELLP's proposed appointment {SEA00009421}.
252. On 8 November 2013, Peter Blythe (Artelia) emailed me to follow up on the wording of the appointment. He said "*we need to get this confirmed quickly so that we can prepare to go out for tender*" {SEA00009783}. I believe this was because KCTMO needed to finalise our appointment so they had something to novate to the successful contractor, and presumably for their own internal record keeping.
253. On 11 November 2013, I emailed Peter Blythe and Philip Booth (both Artelia) and said among other things that I had run through the contract details but that I thought there were outstanding issues regarding the form of novation and collateral warranty that would need to be entered into after the novation {SEA00009820}.
254. The documents that I attached to my email were:
- 254.1 A covering letter addressed to KCTMO {SEA00009821};
 - 254.2 A draft unsigned memorandum of agreement {SEA00009830} which referred to the Standard Conditions of Appointment for an Architect 2010;
 - 254.3 The RIBA amendment 1 to the RIBA Standard Conditions of Appointment {SEA00009822};
 - 254.4 Appendix A, titled "*Project Data 2010*" {SEA00009823};
 - 254.5 Appendix B, titled "*Services 2010*" {SEA00009824};
 - 254.6 Appendix C, titled "*Fee and Expenses Schedule 2010*" {SEA00009825};
 - 254.7 Appendix D, titled "*Project Brief*" {SEA00009826};
 - 254.8 Appendix E, titled "*Public Authority Supplement 2010*";
 - 254.9 An asbestos and toxic mould exclusion {SEA00009828};

- 254.10 A draft CIC form of novation agreement {SEA00009829}; and
- 254.11 An insurance certificate.
255. On 13 November 2013, Philip Booth responded attaching:
- 255.1 A proposed form of novation agreement {SEA00009906}; and
- 255.2 A proposed form of collateral warranty {SEA00009905}.
256. Studio E, Artelia and KCTMO continued to discuss Studio E's appointment document and various amendments including on 18 November 2013 {SEA00009958}, when Philip Booth (Artelia) sent me, copied to KCTMO:
- 256.1 A covering letter addressed to KCTMO {SEA00009821};
- 256.2 A draft unsigned memorandum of agreement {SEA00009830} which referred to the Standard Conditions of Appointment for an Architect 2010;
- 256.3 The RIBA amendment 1 to the RIBA Standard Conditions of Appointment {SEA00009822};
- 256.4 Appendix A, titled "*Project Data 2010*" {SEA00009823};
- 256.5 Appendix B, titled "*Services 2010*" {SEA00009824};
- 256.6 Appendix C, titled "*Fee and Expenses Schedule 2010*" {SEA00009825};
- 256.7 Appendix D, titled "*Project Brief*" {SEA00009826};
- 256.8 An asbestos and toxic mould exclusion {SEA00009828};
- 256.9 A draft CIC form of novation agreement {SEA00009829}; and
- 256.10 An insurance certificate.
257. On 20 November 2013 {SEA00009993} Artelia stated to KCTMO that "*Studio E appear ready to sign their contract*" and asked KCTMO if it was happy for Studio E to prepare two signed copies of it for signature.

258. To the best of my knowledge, Studio E does not hold a copy of a response to this email, or a copy of any signed contractual documentation arising from the negotiations referred to above. Similarly, neither I nor my directors, Andrzej Kuszell and David Lloyd Jones (both of Studio E), recall whether Studio E executed any contractual documentation arising from the negotiations referred to above.

Podium layout

259. There was a lot of correspondence during October to November 2013 regarding the layout of the Podium and the fire strategy implications of various permutations of the layout, principally between Max Fordham, Studio E, Curtins and Exova. I have not provided much detail about this as the layout of the Podium was altered again in early 2014 at KCTMO's request, as discussed further below.
260. Much of the correspondence during this period discussed the Automatic Opening Vent (AOV) requirements for the ventilation of lobbies, and at this stage this primarily related to proposed lobbies in the Podium rather than the Upper Floors residential lobbies {SEA00008385} {SEA00008951} {SEA00008957} {SEA00008961} {SEA00009033} {SEA00009142} {SEA00009342}. We received advice from Exova as to the consequences of the rearranged Podium from a fire strategy perspective (eg. {SEA00000109} {SEA00000112} {SEA00000113} {SEA00000114}).
261. On 18 October 2013, I emailed Curtins, Max Fordham, Exova and David Bonnett (access consultancy) regarding structures, clearances and the smoke ventilation for revised options for the Podium {SEA00009242}. I had proposed to satisfy the requirement to provide a smoke vent to the proposed new internal stair to the offices via a duct which was routed at high level at Walkway, instead of directly via a window. I asked Exova to confirm whether it agreed this was a good starting point for discussions with Building Control, which Exova agreed {SEA00000115} (the office layout later changed and the new stair and requirement for an AOV in that location was omitted).

262. Tom Ashton left Curtins around the end of 2013, and Stefano Strazzullo was to continue as Curtins' lead associate on the Project {SEA00010178}.
263. I understand that the design of the Podium is not the primary focus of the Inquiry, therefore I do not propose to comment on the Employer's Requirements for this item of works here. Should the Inquiry require further input from me on this aspect I will assist insofar as I am able.

G4 NBS prepared by Studio E regarding the Tower envelope in this period

Cladding

264. Before September 2013, our proposal had been to clad the Tower with a zinc product. This was because we wanted to select a robust, durable cladding which would weather well over many years. Whilst aluminium and zinc both develop a natural resistance to oxidation when they are exposed to the elements, aluminium is usually installed as a coated product cladding. (Raw aluminium, left to weather naturally goes an unfortunate dull grey. A pre-oxidised or anodised aluminium would have been too expensive for us to consider). The coatings offered for aluminium, of which there are many, eventually degrade under UV light and after, say, 20 years, look tired and in want of renewal. Pre-patinated Zinc, which I had experience of using in cassette form on a leisure centre project which we completed in Watford in 2008, could be expected to weather well over 50 years and like brick can look better over time.

265. As I felt that the Project was now moving again, in September 2013 I got in touch with representatives from Paneltec, SIG and Harley, the subcontractors recommended to me by CGL earlier in the year. This was to further develop my understanding of the options, costs and technical details. I anticipated that the sequence of installation and method of access would have a strong influence on what was viable.

The typical bay drawing

266. To facilitate the conversation with the cladding suppliers, I asked Tomas Rek (Studio E) to update Studio E drawing (06) 110 {SEA00002499} (the **Typical Bay Drawing**). This drawing, in an updated form, was eventually part of the Employer's Requirements. It is likely that I would have reviewed it from time to time, I recall that my focus was on the location of the joints on the drawing, primarily with Blaine Cagney (Studio E) before autumn 2013, as this was the architectural focus of this element of the Project for Studio E.

267. I have no recollection of how the judgement as to the placement of cavity barriers on the **Typical Bay Drawing** was arrived at. I note that cavity barriers

are not shown on the draft Typical Bay Drawing dated 24 September 2013 {SEA00002155}, which states "*provision of cavity fire barrier TBC*", but they are present on the version dated 25 September 2013 {SEA00002163}. Given the level of detail on the latter drawing, such as the reference to the 25mm gap on the horizontal barrier being consistent with the Siderise cavity barriers that I believe were installed, I believe that the location of the cavity barriers must have been determined with specialist input.

Paneltec

268. Paneltec had initially got in touch with me by email in April 2013, having been passed my details by Jason Tisbury (CGL) {SEA00007608}, after I asked him to suggest some cladding subcontractors (we did not approach Kovara, as I felt we had obtained sufficient input by that stage from the others) {SEA00007602}. After I got in touch with Paneltec on 11 September 2013 {SEA00008374}, the business development manager (Graham Kent-Jackson) suggested a meeting with me {SEA00008377}, which took place on or around 17 September 2013 {BS1/198}. Given it took place over five years ago I have limited recollection of the meeting. However I remember being concerned at its proposal to adhere the panels with a SIKA adhesive rather than mechanically rivet or screw. The advantage of an adhesive is the absence of visible fixings which provides a much cleaner overall appearance. After the meeting I emailed him with further information on the draft elevations, details, wind load calculations and U-value targets {SEA00008664}{SEA00008683} and also asked a query about drilling / fixing methods {SEA00008718}. On 27 September 2013, I said that Paneltec was preparing budget costs, however I do not have on file any further correspondence from Paneltec and I believe I did not follow up as I was not convinced by the proposal to glue panels on a high-rise tower.

Harley

269. Mark Harris (Harley) had also initially got in touch with me by email in April 2013, having also been passed my details by Jason Tisbury {SEA00007603}, stating "*over-cladding tower blocks is very much what we do, and specifically in London, hence our keen interest in Grenfell*" {SEA00007603}. He attached

sheets showing work that Harley had carried out previously, including on the Chalcot Estate in Camden {SEA00007605} (Rydon was the main contractor for this project), Clements Court in Harlow {SEA00007606} and Castlemaine Tower in Wandsworth{SEA00007604}).

270. I got in touch with Harley on 11 September 2013 {SEA00008375} and we arranged to meet on 27 September 2013 {SEA00008382}. We arranged to meet near London Bridge station, and the meeting took place at a coffee shop in Hays Galleria {SEA00008713}. It was Ray Bailey, Mark Harris (both Harley), Tomas Rek (Studio E) and me. Before the meeting, Tomas Rek emailed Mark draft elevations, details, wind load calculations and U-value targets {SEA00008692}.
271. I was of the understanding that PIR products were generally safe to use in cavities. This was based on my general awareness that it had been widely used in the construction industry in the last 20 years, during which time I had not heard it constituted a fire hazard (my understanding was that it would only char when subjected to a flame), and it had also been marketed with certification from the Loss Prevention Certification Board as part of steel composite panels which are very widely used. When I met Harley I believe I had a lingering uncertainty about PIR because this was a high-rise and I had not been involved in a high-rise before. I believe, but I cannot say for sure, that I asked Ray Bailey a question about the acceptability of using rigid foam insulation on a high-rise building, probably at the end of the meeting. If I did, I don't recall he provided a definitive response.
272. I emailed Artelia, KCTMO and Max Fordham a summary of the meeting {SEA00008790}. Amongst other things, I noted that Harley *"are very keen and have been tracking the project for some time", "are specialists in this type of project"* and had *"pointed to Ferrier Point as being very similar to Grenfell"* (a project I understood Harley had worked on with Rydon which was a 23 storey tower block in Canning Town and that Harley had discussed at the meeting and shown Tomas and I pictures of). I think they believed the strategy adopted on that project was applicable to the Project: large purpose-made aluminium rails were mounted at the head and cill of the window and these were used to mount the new windows and the vertical cladding rails. The new windows were set well

forward of the existing, within the new insulation zone which I understood was optimum to avoid thermal bridges, or cold spots, around the windows. I recall that we had a detailed conversation about the method and sequence of construction and Harley handed me some drawings and pictures at the meeting which SEAL no longer holds. I remember KCTMO later confirming its agreement to the approach to Harley.

273. Whilst we had been primarily considering a zinc panel at this stage, Harley's experience was that clients tended to eventually adopt "*the cheapest cladding option*" which was face-fixed ACM {SEA00008790}. I believe we also discussed a zinc composite panel at the meeting {SEA00008809}. At the meeting, Harley gave a "*back of fag packet*" budget of around £3,000,000 for the cladding works, which I believe was based on zinc.
274. In early October 2013, we provided Harley with more detailed measurements of the Tower {SEA00008985} so they could provide a more accurate budget {SEA00008811}. I also asked Harley to come back with budget costs for Nedzink Nova Composite versus a metallic or faux-zinc Reynobond panel (ie. ACM) {SEA00008985}, as Peter Maddison (KCTMO) had requested a comparison budget price for aluminium {SEA00008837}.
275. On 18 October 2013, Mark Harris (Harley) emailed me a budget spreadsheet based on using Reynobond Natural Zinc fabricated into cassettes as a starting point, together with three other options including Reynobond natural zinc face fixed, Reynobond standard aluminium cassette and Reynobond standard aluminium face fixed {SEA00002275}. In the covering email, he said the natural zinc cassettes were the starting point, but if standard face fixed ACM was used, the saving could be over £500,000 {SEA00009229}.
276. I do not recall if I noticed it at the time, but on rereading the budget spreadsheet I note that it states "*no allowance for fire rated products*". I do not believe that Harley drew my attention to this point at any time before or after having prepared this spreadsheet and it was not mentioned in the covering email.
277. The same day, I emailed Mark Harris (Harley) and thanked him for the useful spreadsheet. I asked for him to provide a quote for NedZink NOVA Composite

(I now note the product sheet I attached said it had an "LD-PE" core, although at the time I would not have spent time analysing the datasheet and I had no experience with PE composites {SEA00001987}).

278. On 7 November 2013, Mark Harris (Harley) emailed me and said that KME, a cladding manufacturer, had provided a quote for Proteus HR composite in the sum of £282/m², but provided no further information {SEA00009736}. In the email, Mark said *"from a Harley selfish point of view, our preference would be to use ACM"*. He said ACM was *"... tried and tested (on many Harley projects), and we are confident in the cost base"*.
279. Whilst I acknowledged Harley's concerns about using Proteus HR because of KME's unreliability, I said that we had set out to do zinc and budget permitting a zinc finish would be a fantastic result {SEA00009764}. However, as I envisaged that KCTMO would want ACM options in the tender, I asked Mark Harris (Harley) to provide rates for various Reynobond and Alucobond colour finishes {SEA00009764}. Mark Harris (Harley) said he would look into this {SEA00009776}.
280. On 21 November 2013, Mark Harris (Harley) emailed me to state that he had only heard back from Reynobond, and highlighted that Harley did a lot of business with Reynobond. He said that the current standard rate for ACM cassettes was £232.50m² for the colour finishes I had asked about {SEA00009997}. I thanked Mark Harris and said that we were virtually finished preparing the tenders {SEA00010000}.

SIG

281. On 24 September 2013, Tomas Rek (Studio E) emailed Paul Cousins of SIG Roofing (SIG) to request a rough per m² estimate for using SIG's Naturel, Nova and Nova Structure materials as a cladding option {SEA00008644}. I understand that Tomas Rek met with Paul Cousins on 26 September 2013 to discuss this further {SEA00008703}. I do not recall attending this meeting. The next day, Tomas emailed Paul (copying me in) in order to summarise some of what they discussed {SEA00008806}. The email stated that Paul Cousins was going to advise on the feasibility of the detailing shown in the Typical Bay Drawing. He

also asked Paul about the price comparison between SIG's PE composites and KME's aluminium based mesh products, which I assume was something that came up in the meeting.

282. On 9 October 2013, Paul Cousins (SIG) replied to Tomas Rek (Studio E). I was not copied into the email, but I was subsequently copied into the chain {SEA00009019}. In the email, Paul provided indicative rates for Proteus HR NedZink Panel (£130-180/m²), NedZink Nova Composite (£90-150/m²) and NedZink Interlocking Panel (£70-120/m²). These were supply only prices, so did not include installation costs. Paul also said he believed Proteus HR *"is the most suitable for this application as this panel construction will offer a very high level of flatness as stability"* and that interlocking panels *"would not provide [the] flatness required"* {SEA00009019}. The reason that interlocking panels were not explored for the upper panels was that there was a limit on width of a linear panel in order to maintain stiffness and avoid oil canning, whereas ACM could be made into much wider panels, meaning fewer joints required and more flexibility in working around windows.
283. On 9 October 2013, Tomas Rek (Studio E) emailed Paul Cousins (SIG), copying me in, and asked a number of further questions of Paul Cousins. In particular, he asked *"can you confirm that the detailing depicted on the drawing we sent to you is appropriate for both single 1.5mm sheet and composite material"* {SEA00009019}. Paul responded on 15 October 2013, although I was not copied directly into it I was subsequently copied into the chain containing it {SEA00009240}. I do not recall whether I was aware of the response at the time, but on reading the email conversation in preparing this witness statement I note that Paul Cousins' response to Tomas Rek's detailing question was that the detailing Studio E had shown was appropriate in theory and subject to wind loadings, but this would *"have to be established by a suitably qualified engineer"* {SEA00009240}.
284. On 18 October 2013, Tomas Rek (Studio E) emailed Paul Cousins (SIG), copying me in, requesting a quote for the supply of Zinc NOVA Composite Panels and to chase up the supply of a KME honeycomb sample {SEA00009240}. In the email, Tomas referenced that we were under pressure

from the client regarding costs, that the client had flagged using aluminium, but that we would much rather use a zinc product. He also said that a zinc honeycomb would probably not be specified because of cost {SEA00009240}.

285. On 24 October 2013, Tomas Rek (Studio E) emailed Simon Walker (SIG). He requested costing details for a surface fixed NOVA Composite Panel {SEA00009414} and attached the 24 October 2013 version of the Typical Bay Drawing. The next day, Tomas emailed Simon to request that he copy the budget estimates for a number of options to Harley, who was an envelope installer, and putting together a budget cost for the entire building envelope {SEA00009435}, which Simon Walker agreed to do {SEA00009437}. Simon also said that Matthew Irving of KME would provide budgets to Harley for the panels under consideration {SEA00009437}.

Rainscreen Cladding

286. As a result of the enquiries above, Studio E prepared the specification for the rainscreen cladding, based on the input provided by the specialist cladding subcontractors it had consulted with, including Harley, using a KME Architectural Solutions PROTEUS HR honeycomb rainscreen panel (aluminium honeycomb core structurally bonded between two lightweight zinc skins) with NedZinc NOVA pre-weather finish, manufactured by NedZinc B.V. and supplied by SIG as the rainscreen cladding material for the envelope to the Upper Floors, at clause H92/120 (columns) and H92/123 (spandrel panels) of the NBS Specification ({SEA00000169_0065}).
287. With regard to the insulation, I refer you back to paragraphs 43.9 and 116.2 where I discuss how the insulation was selected by Max Fordham. The specification for the insulation in the Employer's Requirements was:

776 THERMAL INSULATION.

Material: Zero ODP rigid polyisocyanurate insulation board. BRE Green Guide rating 'A+.

Manufacturer: Celotex Ltd, Lady Lane Industrial Estate, Hadleigh Ipswich Suffolk IP7 6BA

T: 0901 996 0100,

Web: celotex.co.uk, Email: technical@celotex.co.uk.

Product reference: FR5000 aluminium foil faced both sides.

Conductivity: 0.021W/mk

Thickness: Not less than 150mm for spandrel panels and 80mm for columns. - Required performance: Refer to clause 430.

Recycled content: Manufacturer to confirm.

Fixing: Attached to the outer face or supported within the backing wall so as not to bulge, sag, delaminate or detach during installation or in situ during the life of the rainscreen cladding.

288. The performance specification for the Crown in the Employer's Requirements was at H92/130:

130 MAJOR NONSTANDARD COMPONENTS 'CROWN'

Manufacturer: TBC. - Product reference: TBC.

Material: TBC.

Finish: TBC.

Fixing: As recommended by panel manufacturer to suit environmental conditions; large wedge shaped elements fixed back to galvanized steel subframe to structural engineer's detail installed on top of existing RC columns.

Other requirements: Include products, fixings and interfaces necessary to complete the fabrication and installation.

289. The requirements for the cladding, insulation and the Crown in the Employer's Requirements afforded a discretion to the tendering contractors, specifically to propose alternative products. For instance, at H92, 210, the Employer's Requirements stated:

Submission of alternative proposals: Preliminary design drawings indicate intent. Other reasonable proposals will be considered.

290. In addition, the opening section of H92 of the Employer's Requirements stated that: *"The manufacturers noted within this specification are indicative and may be substituted with similar or equal alternatives."*
291. Further, because KCTMO had expressed an interest in alternative cladding options and an ongoing concern about affordability, at clause H92.11 Studio E expressly invited tenderers to submit quotes for alternative cladding materials, with the following statement:

11 INFORMATION TO BE PROVIDED WITH TENDER

In addition to the cladding specified in the below clauses 120 & 123 submit comparative supply and install costs per m2 of the whole cladding system for the following alternative materials:

Reynobond - Duragloss 5000:

Metallic std& non-std (Satin gloss)

Chameleon

Anodised Look (Satin gloss)

Alucobond:

Spectra, Sakura 917. Zinc:

QUARTZ ZINC composite polymer panel by VM Zinc

Note: Face fastened solutions permitted.

292. In inviting tenders to specify these alternatives, I was asking for a range of finishes from the two big suppliers which I thought would provide sufficient options should we have to later approach Planning to agree an aluminium product rather than zinc. 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. It was, in a way, an insurance against possible changes. At this stage, we would not go beyond addressing the issues raised by Building Control in the early meetings: specifically on 6 November 2012 which Adrian Jess (Studio E) attended {SEA00006526}, 17 September 2013 {SEA00000121}, Paul Hanson's (Building Control) comments received 31 December 2013 and the input from Exova regarding fire strategy. We would not usually seek to verify compliance of all materials and products prior to submitting a Building Control Full Plans Application.

293. In addition, it was expressly envisaged that the tendering contractors would carry out the detailed design of the rainscreen cladding system, and therefore, had discretion as to how to carry out that design. H92/210 of the NBS Employer's Requirements state:

210 DESIGN

Rainscreen cladding system and associated features: Complete detailed design in accordance with this specification and the preliminary design drawings and submit before commencement of fabrication.

Related works: Coordinate in detailed design.

294. The Employer's Requirements therefore gave the tendering contractor discretion as to which products and materials it selected, and how those products and materials would be incorporated into the detailed design, to ensure compliance with the NBS, which included:

220 SPECIFICATION

Compliance standards: The Centre for Window and Cladding Technology (CWCT) 'Standard for systemised building envelopes'.

Reference information: For the duration of the contract, keep available at the design office, workshop and on site copies of:

The Centre for Window and Cladding Technology (CWCT) 'Standard for systemised building envelopes'.

Publications invoked by the CWCT 'Standard for systemised building envelopes'.

295. Although I do not recall having read them at the time, the CWCT standards stated, amongst other things that, the *"envelope shall also comply with the Building Regulations or local building code"*.

296. Further, 230 stated:

230 INFORMATION TO BE PROVIDED DURING DETAILED DESIGN

Proposals to support outstanding applications for Building Regulation consents or relaxations.

297. 235 stated:

235 INFORMATION TO BE PROVIDED BEFORE COMMENCEMENT OF TESTING OR MANUFACTURE OF RAINSCREEN CLADDING SYSTEM

Submit the following cladding particulars:

Detailed drawings to fully describe fabrication and installation.

Detailed calculations to prove compliance with design/ performance requirements.

Project specific fabrication, handling and installation method statements.

Certification for incorporated components manufactured by others confirming their suitability for proposed locations in the rainscreen cladding.

Recommendations for spare parts for future repairs or replacements.

Recommendations for safe dismantling and recycling or disposal of products.

298. These aspects, amongst others, were the elements of the Employer's Requirements which applied to the components of the rainscreen cladding system described above. Although we did not see the final building contract I believe it to have been based on the JCT 2011 which includes an obligation on the main contractor regarding statutory compliance which would include Building Regulations:

Clause 2.1.1: The Contractor shall carry out and complete the Works in a proper and workmanlike manner and in compliance with the Contract Documents, the Construction Phase Plan and other Statutory Requirements and for that purpose shall complete the design of the Works including the selection of any specifications for the kinds and standards of materials, goods and workmanship to be used in the construction of the Works so far as not described or stated in the Employer's Requirements or Contractor's Proposals, and shall give all notices required by the Statutory Requirements.

Windows

299. In August 2013, we asked window manufacturers to comment on potential window options and specifications in order to prepare the NBS. The main three window suppliers that we liaised with were Senior Architectural, Hydro and Schueco.
300. I was assisted by my colleagues Paddy Glennon and Tomas Rek (both of Studio E) in investigating the appropriate windows to include in the NBS for the Project. Tomas was preparing the NBS document so he took over from Paddy in assembling information.
301. For example, I note that Paddy Glennon (Studio E) contacted Senior Architectural {SEA00007973}, Hydro (later Technal) and Schueco regarding appropriate window options. I note that the various window suppliers assisted Paddy, and later Tomas Rek (Studio E), with proposed drawings for the window

installations ({SEA00002104} {SEA00002110} {SEA00009429}
{SEA00009815} {SEA00002422} {SEA00009931} {SEA00002164}).

302. In the NBS, Studio E included a specification including the aluminium "*Wicono Wiclone 65 evo*" supplied by Hydro / Technal for windows in the Upper Floors (Clause L10.331 {SEA00000169_0144}), further to the input of Stuart Pollard of Hydro {SEA00009429}.

303. Both Tomas Rek (Studio E) and I discussed specifying treated plywood for the interior window cill and window reveal linings and sought advice on this from "*Specialised Panels*" {SEA00009876}. This was covered in our NBS clause P20/240A and drawing "*1279 SEA (05) 118 - Window Surrounds*" {SEA00002576} and was chosen to match the existing plywood linings in the flats.

304. However, these requirements were expressly stated to be with discretion afforded to the tendering contractors. For instance, the opening points to L10 stated:

"The manufacturers noted within this specification are indicative and may be substituted with similar or equal alternatives."

305. The prescribed elements of the Employer's Requirements, included that the Contractor's Proposals must:

110 EVIDENCE OF PERFORMANCE

Certification: Provide independently certified evidence that all incorporated components comply with specified performance requirements.

Kitchen extract fan (KEF)

306. Max Fordham advised that KEFs were installed to existing flats to avoid issues with condensation given the improvements that would be made to insulation and air tightness, although we understood that given the scope of refurbishment work proposed, KEFs were not a Building Regulations requirement {SEA00008805}.

The fans were potentially unsightly from inside and outside so Tomas Rek (Studio E) investigated potential KEF options, including the Vento Therm via Schueco {SEA00008803} {SEA00008812} {SEA00008992} and Vent Trex {SEA00008858}, but it was felt these would be too prohibitive and we could not request them. In the end, I do not believe that Studio E specified a KEF in the NBS, I believe that this was specified by Max Fordham.

G5 An overview of the M&E works that Studio E was aware of as ongoing, including regarding the smoke ventilation system

307. By early September 2013, my view was that M&E was the least progressed design element {SEA00008300}, relative to say the cladding, windows and fire strategy. There was a design team meeting on 10 September 2013 that was to focus on M&E issues, to bring M&E up to speed {SEA00008325} and Max Fordham had prepared a list of proposals / queries and discussion points to obtain feedback on various issues such as how resilient the boiler plant should be in the event of boiler failure {SEA00008327}. Max Fordham also attached a list of pre-tender M&E surveys {SEA00008328}. Around the same time, Max Fordham's work on the Project was transferred to its London office with Matt Smith and Duncan Campbell (both Max Fordham) becoming the main contacts (instead of Mark Palmer (Max Fordham)) {SEA00008318}.
308. Studio E had some involvement in assisting Max Fordham gather some of the information it needed to develop the M&E proposals. One example is that we helped Max Fordham develop its layout of the basement plant room, by making an initial drawing of the basement area {SEA00008329} (I also suggested a laser survey so Max Fordham would have more accurate measurements {SEA00008351}). Another example is that I also facilitated meetings with leaseholders so that Max Fordham could see the extent to which leaseholders had customised their flats so Max Fordham could identify whether the customisations would cause any issues for the heating upgrades {SEA00008399}. I would also have been interested in these as they may have had architectural implications.
309. I regarded an insight into the M&E as part of Studio E's role. Some issues were trivial, say for instance the locations of breakers or a pump specification, but I was always alert to any architectural implications from the M&E works. I therefore assisted Max Fordham where I could and it was relevant for me, as an architect, to do so. However, there were other elements of Max Fordham's work which I was not aware of or was copied in on without having an active role. One example is correspondence between Max Fordham and KCTMO regarding certifications for various M&E systems {SEA00008431}.

310. One issue that may be of relevance to the Inquiry's understanding of the M&E works is Max Fordham's proposal, in September 2013, to locate the proposed M&E riser in the alcove opposite the lifts on the Upper Floors {SEA00008409}. I understand Max Fordham's concern was that the previously proposed riser position was too tight and, for example, may have meant that the cold water pipes would have picked up heat from heating elements {SEA00008493}.
311. Max Fordham asked Curtins to comment on the proposal for the location of the floor penetrations required for the new heating and domestic cold water risers. I pointed out that there was a beam and stairs in the Podium that may cause clashes {SEA00008411}. However, I believed that the new riser position work from an architectural perspective. I asked whether Max Fordham would leave the existing dry riser in place {SEA00008501}, and continued to discuss this with Max Fordham, Exova and other members of the design team {SEA00008510} {SEA00008511} {SEA00000099} {SEA00008572} {SEA00000100} {SEA00008581} {SEA00008641} {SEA00009210}. To prevent overheating of the lobbies Max Fordham also proposed that the existing smoke ventilation system was used to provide ventilation to the lobbies.
312. By 25 September 2013, I had prepared an option for the Podium that showed the existing smoke vent extending from the Upper Floors through the Podium, which I emailed to Max Fordham and Exova {SEA00008686}. In the email, I flagged that the existing smoke vent ducts scaled to 600x400 mm (0.24m²) whilst my reading of section B1 paragraph 4.35 of ADB2 was that the smoke vent should be at least 0.4m² (say 800x500 mm) or protected from the ingress of smoke by a mechanical smoke control system. In response, Exova said that hopefully Building Control would be prepared to accept the lower sized ventilation shafts on the basis of reasonableness {SEA00000101}. As mentioned by Exova {SEA00000128} and later Paul Hanson {SEA00010369}, existing work does not need to comply with later Building Regulations whereas new work would need to comply. Building Control could take the view that the new flats in the Podium needed to be protected by smoke ventilation in accordance with the Building Regulations. I knew the requirement was problematic as we didn't have space to provide passive smoke ventilation. I was focussing on a

potential risk which could have significant consequences on the viability of the floor layout.

313. On 30 September 2013 I emailed Exova, Max Fordham and Curtins with another alternative layout for the Podium configuration, together with several queries, including the size of Automatic Opening Vents (AOV) to the new lobbies at Mezzanine and Walkway levels {SEA00008833}. Terry Ashton (Exova) responded the next day, attaching a mark-up of his comments on the proposed configuration {BS1/199} {SEA00000102}.
314. Throughout October 2013, Studio E continued to liaise with Exova, Max Fordham and others regarding the layout of the Podium, location of the smoke ventilation shaft and how to present the smoke ventilation shaft to Building Control {SEA00000104} {SEA00008862} {SEA00008990} {SEA00000108} {SEA00000116}. My input on these M&E decisions was limited to assisting with any architectural issues that arose.
315. I am also aware that KCTMO were investigating funding options for parts of the refurbishment work, such as with British Gas {SEA00008177}, as I was asked to provide information to assist KCTMO in their applications, however I do not recall being significantly involved in this aspect of the Project.

G6 Interactions we had with Building Control in terms of the preliminary submission

316. The action points from a design team meeting held on 10 September 2013 state that I was to speak with Exova to see if they were updating their report {BS1/200-209}, and that Philip Booth, of Artelia {BS1/200-209} was to "*investigate the Building Control application*". After this, on 11 September 2013, Philip Booth emailed me with contact details for John Allen (Building Control) {SEA00008373}.
317. My opinion at the time, as I emailed to Claire Williams (KCTMO), was that getting Building Control's approval of the fire strategy was one of the more critical aspects of the Project proposals {SEA00008394}. This was because without approval, KCTMO may be exposed (financially) if additional measures were required at a late stage in order to get Building Control sign off. I was seeking to organise a meeting with Building Control with a view to getting some comfort on the developing design.
318. Therefore, on 17 September 2013 I attended a meeting with Exova, Max Fordham and Building Control {SEA00000097}. I do not recall what was discussed at the meeting. On 18 September 2013, Terry Ashton (Exova) emailed me with annotated copies of certain drawings to show what Exova believed Building Control required in order to approve the design from a fire safety viewpoint, which I believe had arisen from the meeting. I saved a copy of the attachments to this email, which were versions of the lower three Podium floors (Ground {BS1/210}, Mezzanine {BS1/211} and Walkway {BS1/212}) with Exova's comments. Terry Ashton also said that he would "*provide some words regarding the smoke ventilation of the lobbies*", I believe this may have been because Building Control wanted more information about how the smoke ventilation system would work.
319. Further to the meeting on 17 September 2013 (not August as stated), on 25 October 2013 I emailed John Allen and Paul Hanson (Building Control) (copying in Max Fordham and Exova) {SEA00000121} attaching the proposed fire strategy {BS1/213}, fire access plan {BS1/214}, Exova's OFSS version 2

{BS1/215-224}, Max Fordham's Smoke Control Proposals document titled 25 October 2013 {BS1/225-226} and Studio E's drawing 1279 PL010 which is the Existing Floor plans at 1:200 scale {BS1/227}. Building Control later referred to this as Submission P1 (BC P1).

320. In the covering email for BC P1, I said that "*as discussed you will forward this to London Fire Brigade so that the TMO may receive a response as soon as possible*". My recollection is that this was because Building Control had highlighted their concerns about the smoke ventilation to the whole Tower and that they would need to refer the proposals to the LFB who held ultimate responsibility for confirming compliance. This was not something that I believed we could do directly with the LFB. The concerns related to the need to upgrade the fans and the controls, but in carrying out the upgrade it would not have been possible to achieve a smoke exhaust arrangement compliant with the current regulations. To achieve this would require extensive structural changes to the whole Tower and this went far beyond the scope of the Project. My recollection is that Building Control wanted us to demonstrate that we were not making the existing situation worse.
321. I followed up with Building Control on 28 October 2013 and also asked Claire Williams (KCTMO) whether she had any leverage with Building Control to encourage them to respond to BC P1 quickly {SEA00009482}. On 30 October 2013, Paul Hanson (Building Control) called me and said that he needed more information about Max Fordham's smoke ventilation proposals before he could forward the proposals to the LFB {SEA00009494}. I had prepared a diagram to illustrate my understanding, which is included with the email. {SEA00009500}{SEA00002339} I also let Artelia and KCTMO know about the feedback {SEA00009502}. I was copied into Max Fordham's response to Building Control on 7 November 2013 {SEA00009757}.
322. On 7 November 2013, Exova emailed me version 3 of the OFSS. To the best of my knowledge, this was the last version of the OFSS that Exova prepared for the Project (I note that Neil Crawford (Studio E) emailed a copy of this version on 29 September 2014, although they may have had a copy before {SEA00000215}). As with versions 1 and 2 of the OFSS, Exova addressed,

among other things, compliance with Part B of Schedule 1 to the Building Regulations 2010 (Part B4) by stating *"it is considered that the proposed changes will have no adverse effect on the building in relation to external fire spread but this will be confirmed by an analysis in a future issue of this report"*. I believe they would have been aware of the proposal to clad the Tower.

323. On 11 November 2013, John Allen (Building Control) emailed me, Exova and Max Fordham and said he did not think he had adequate information to enable an effective consultation with the LFB regarding the smoke extract system {SEA00009805}. My understanding from his email was that, essentially, he needed evidence that the new system was *"no worse"* than the existing smoke extract system but that evidence provided was not adequate. I forwarded the email to Artelia and KCTMO {SEA00000148}. I was frustrated that the principle of the fire strategy could not be agreed and remained a loose end before tender {SEA00009808}{SEA00009809}, and I wanted KCTMO to be aware given the *"magnitude of design risk associated with fire"*. Claire Williams (KCTMO) acknowledged it was a major part of the Project {SEA00009814}. Again, by design risk I meant the possible impact of late changes. In the email, I said that these were *"strictly M&E issues"*, by which I meant Building Control's concerns, if realised, were most likely to require mechanical solutions: fans, ducts and dampers. I was frustrated at the time that we had not been able to resolve this issue prior to issuing the tender. This had as much to do with my desire to be diligent, as it did with wanting to protect KCTMO from excessive costs {SEA00009398}. I think Claire and I believed that an appropriate solution to the smoke ventilation, and fire safety generally, would be agreed once we had lodged the Building Control Application and the LFB and Building Control were able to give it their full attention.
324. I do not recall if I had any interaction with Building Control between 11 November 2013 and 2 December 2013. On 3 December 2013, I emailed Paul Hanson (Building Control) attaching an updated copy of the fire strategy plans {SEA00000154} {SEA00002497} {SEA00000157} {SEA00002496}, which amongst other things show the fire ratings to internal walls and doors, escape travel distances, AOV's and fire appliance access {SEA00010100}.

325. Building Control provided feedback on BC P1 on 31 December 2013, which I discuss further from paragraph 339 below.

G7 Other issues

326. There was a small package of external landscaping included with the tender, for which KCTMO needed a landscape architect to develop Churchman's initial landscape proposals to RIBA Stage E. KCTMO agreed that the preparation of the landscaping tender documents could be handled by a sub-consultant to Studio E called Matthew Wigan {SEA00008864}. The landscaping was a small area around the Tower, plus Grenfell Road and the service area (which needed to be upgraded to tie in with KALC) for tender {SEA00009017}. After discussion with Matthew Wigan, KCTMO and Artelia {SEA00009145} {SEA00009184} {SEA00009194} {SEA00009220}, KCTMO agreed Matthew Wigan's fee proposal for landscape input for the tender {SEA00009222} {SEA00009145}, through Studio E. Matthew Wigan continued to work on the Project throughout late 2013 {SEA00010076} {SEA00010108}.

H DECEMBER 2013 TO MARCH 2014: TENDER PROCESS

327. In this section, I describe:

327.1 My understanding of Artelia's launch of the tender process, including the bidders' conference at the start of December 2013;

327.2 An overview of my involvement in the tenderers' queries process;

327.3 The extent of value engineering discussions I was involved in around December 2013;

327.4 My interactions with **B**uilding Control, including regarding fire safety and the smoke ventilation system, between December 2013 and March 2014;

327.5 The extent to which I was involved in the evaluation of tender returns; and

327.1 A number of other issues arising during this period, including regarding Studio E's appointment and invoicing, discussion of changes to the layout of the **P**odium and the granting of planning approval in January 2014.

HI My understanding of tender launch

328. On 29 November 2013, Phillip Booth (Artelia) confirmed Artelia had issued the invitation to tender for the construction of the Project to five shortlisted contractors {SEA00010081}. The contractors were selected via a PQQ, which is a document that sets out a series of questions for potential tenderers to answer regarding their level of experience, capacity and financial standing. I was not involved in the shortlisting of contractors. Artelia shared the tender documents pack on its SharePoint file sharing service {SEA00010083}. The tender deadline for responses was 31 January 2014.
329. Artelia invited the shortlisted contractors to a site visit and bidders' conference, the purpose of which was to provide an opportunity for the contractors and design team to visit the site, so the contractors could ask questions with the design team present. I understood Artelia's plan for the bidders' conference was for Studio E and Max Fordham to give an introduction to the proposed works and lead a tour of the Tower during which we would be able to answer any questions. Records of the answers given by client and consultants were to be circulated to all bidders in a similar fashion to tender queries. Curtins was not invited as Artelia did not anticipate many structural questions {SEA00010102}.
330. The bidders' conference was on 5 December 2013. The latest version of the slides I have found is a draft of 4 December 2013 at around 8pm, Artelia may have a copy of the final version {SEA00010124}. I do not recall anything particularly relevant about the bidders' conference.

H2 Overview of my involvement in the tenderers' queries process

331. After the bidders' conference, contractors had a number of queries that Artelia passed to the relevant members of the design team to answer.

332. Contractors' queries on which I responded (others were fielded by KCTMO {SEA00010134} and Max Fordham {SEA00010144}) included:

332.1 A query as to what was behind the window panels in the existing residential flats {SEA00010133}. My response {SEA00010135} was that we had provided detailed measured drawings of the existing facade as part of the tender drawings {SEA00002507} and I also sent a series of photographs {BS1/228-233}.

332.2 A direct query from Mark Harris of Harley as to whether Studio E would object to Harley providing an alternative window option in its tender option (he said either Schueco or Metal Technology, instead of Wincona) {SEA00010147}. I said this needed to be circulated through the proper channels (ie. via Artelia) {SEA00010148} {SEA00010149} and provided Artelia with wording for Artelia to respond to the query with {SEA00010152}. In short, the position was *"Suppliers of products that are equal in performance and appearance to those specified will be acceptable. It is important that contractors submit a compliant bid, and identify separately any alternatives they would like to put forward"*. This response was consistent with the Employer's Requirements. I am not sure why Harley contacted me directly. I suspect that Harley would have received enquiries from more than one main contractor tendering for the Project. However, in preparing this statement I see that Harley is referenced in L10/331 of the Employer's Requirements as a supplier / manufacturer for the supporting aluminium rails for the windows.

332.3 The various architectural questions on Artelia's sets of tender questions {SEA00010327} {SEA00010380} {SEA00010388} {SEA00010406} {SEA00010410} {SEA00010445} {SEA00010462}.

H3 Extent of value engineering discussions around December 2013

333. Following the bidders' conference, on 12 December 2013 Artelia emailed me, Max Fordham, Curtins and KCTMO regarding value engineering, as Peter Maddison (KCTMO) had asked Artelia to start thinking about value engineering options in case the tender returns are over budget. By 'value engineering' I understood Peter (KCTMO) to mean achieving the project objectives at less cost. At its simplest this means omitting unnecessary work. It can mean substituting cheaper but equivalent products. It can mean changing the method of construction. For instance if the speed of construction can be improved it can reduce the contractor's overheads. On 12 December 2013, Artelia asked the design team to have this in mind, in case we needed to *"bring the cost down whilst keeping the quality of the project high"* {SEA00010155}.
334. Also on 12 December 2013, Claire Williams (KCTMO) emailed me, Artelia, Max Fordham and Curtins and attached the current cost plan for the Project (showing the total estimated construction cost of £8.935M against a budget of £8.5M), and said her *"VE hit list"* included putting heating pipes within refuse chutes and reviewing the windows {SEA00010156}. She asked Peter Blythe (Artelia) to start a value engineering spreadsheet, which I understood was intended to record and tally all VE proposals.
335. On 13 December 2013, Peter Blythe (Artelia) emailed {SEA00010171} attaching a spreadsheet to keep track of potential value engineering options {SEA00010172}. It listed pipework and windows as potential value engineering areas. He chased Studio E and Max Fordham for value engineering options again on 18 December 2013 {SEA00010201}.
336. Also on 18 December 2013, Claire Williams (KCTMO) responded to Peter Blythe (Artelia) querying, from a value engineering perspective, the proposal for underfloor heating to the Ground floor entrance and boxing club staircase and the Crown element of the design {SEA00010205}. The budget in the cost plan for the Crown was £60,000 {SEA00010208}. Later that week, she confirmed that she wanted these added to the value engineering list {SEA00010221} and

Max Fordham also suggested adding some M&E value engineering options to the list {SEA00010220}.

337. My view, as I set out in an email to Artelia (copying in Max Fordham and KCTMO) on 6 January 2014 was that *"it is premature to start chopping the scheme, which is after all incomplete in a number of key respects"* {SEA00010263}. By this, I meant that Planning had not approved the appearance of the elevations, landscaping, smoke extracts and the service risers were also under consideration.
338. Nevertheless, the next day, on 7 January 2014, Artelia circulated a copy of the list of potential value engineering options it had compiled to date, and said to me that *"a simple list like Maxfordham [sic] and Claire have provided would be helpful"* {SEA00010267}.

H4 Building control, fire safety and smoke ventilation between December 2013 and March 2014

339. Building Control provided feedback on BC P1 on 31 December 2013 {SEA00010232}, including:

339.1 a document titled "*Form 53 - Memorandum - B1 - Means of Escape Observations*" from Paul Hanson (Building Control) dated 6 December 2013 {SEA00010369};

339.2 a copy of the fire strategy drawing with comments from Building Control in blue {SEA00002629}; and

339.3 a copy of the fire access plan with comments from Building Control in blue {SEA00002630}.

340. In short, I would summarise the feedback as:

340.1 Regarding the mechanical smoke vent to Upper Floors, no information had been provided on the existing system and there had been no justification that the proposed system was an improvement, or at least no worse than the existing;

340.2 Without the above information, Building Control was unable to submit the proposals to the Fire Authority; and

340.3 In addition, the existing lobby smoke extract / ventilation system should extend down to Mezzanine (Level 1) and service riser access directly onto the stair at Walkway (Level 2) should be avoided.

341. I was surprised by the level of detail and effort that Building Control had gone to, which in my experience was unusual. We had not yet made the formal application. Building Control's engagement gave me comfort that, from a fire perspective and on the level of detail provided, there was nothing that might pose a risk to the Project prior to the tender being awarded.

342. By the end of 2013 and as discussed in Section G, Building Control and the LFB had not yet clarified their requirements for any works to the existing smoke

extract system to the lobbies. The proposals were complicated by the recommendation from Max Fordham to use the exhaust ducts for general ventilation as well. They explained that the new heating pipes, although insulated, would raise temperatures in these areas. As before, I was concerned that KCTMO was exposed should additional measures be required to achieve Building Control sign off. Once the main contractor was appointed, the responsibility would pass on to it and its specialist subcontractor(s), to negotiate a solution, with input from Max Fordham.

343. At meetings I would have presented the proposals, including the zinc / metal cladding and insulation, but I do not recall anyone raising the issue of cladding not being compliant under Part B of the Building Regulations. The reasons I believe we did not investigate this are:

343.1 The specialist cladding subcontractor would hold responsibility for all aspects of their system and the successful contractor had the discretion to suggest alternative products / materials. My previous experience suggested that it was very likely that our tender specification would be changed.

343.2 Our research and consultations, including with Exova, had not revealed any specific concerns or fire risks associated with the proposals and nor the materials.

343.3 The location of the Tower did not trigger space separation requirements, in other words there was no need for the external walls to have a resistance to the break out of fire from within the Tower in order to protect neighbouring buildings. In reviewing the documents I note that this is confirmed in Exova's EFSS paragraph 6.3 {BS1/86}.

343.4 The Building Regulations are not straightforward to interpret and this was a complex Project. We had relied on specialist input for Parts B, E, F, L and M. The Part B advice was provided by Exova and various other parties.

344. In response to Building Control's comments, on 6 January 2014 I emailed Building Control and said that its comments on smoke ventilation would be dealt mainly by Max Fordham and on fire separation by Studio E {SEA00000159}. By fire separation, I was referring to Building Control's comments on compartmentation in the Podium. I also said that I thought consultation with the fire authority was a priority for KCTMO to eliminate the risk of significant design changes in future. Subsequently, I emailed Max Fordham and Exova and said I thought that the argument for the smoke vent needed to be formulated as soon as possible {SEA00010240}.
345. On 8 January 2014, John Hoban (Building Control) emailed me and said he was happy to pass on a question to the fire authority for the smoke vent system, and recommended among other things that we considered guidance in a Local Government Association guide regarding fire safety in purpose built blocks of flats {SEA00010274}. As mechanical smoke control was an M&E issue, I believe I did not download the guide document but I forwarded the email to Max Fordham, copying in Claire Williams (KCTMO), Artelia and Exova {SEA00010275}.
346. Related to the issue of fire safety, on 13 January 2014 Claire Williams (KCTMO) emailed me and Max Fordham (copying in Artelia) regarding a suggestion from KCTMO's health, safety & facilities manager that Claire Williams, and possibly we, meet Carl Stokes, KCTMO's fire consultant {SEA00010304}. In the meantime, from the Project correspondence I am aware that Max Fordham, Artelia, KCTMO and others continued to consider what sort of information would satisfy Building Control about the design of the new smoke ventilation system {SEA00010372} {SEA00010379}. I was aware from the Project correspondence that Max Fordham arranged for a representative of RGE Services Limited (RGE) to explain how the existing smoke ventilation system worked around this time {SEA00010408}, as Max Fordham wanted to get confirmation that the existing system was fully operational {SEA00010533}.
347. According to my handwritten notes, I attended a meeting with Janice Wray (KCTMO), Carl Stokes (KCTMO's fire consultant), Claire Williams (KCTMO) and Matt Smith (Max Fordham) on 23 January 2014 {SEA00010436}. Among

other things, my note of the meeting records that some of the history of the fire safety of the Tower was discussed, that fire detectors and dampers were upgraded a few years prior to 2014 and that the system was serviced by RGE. I do not recall much detail about this meeting, possibly because no actions arose for Studio E.

348. On 24 January 2014, Claire Williams emailed {SEA00010451} me and Max Fordham a copy of a "Record of Significant Findings and Action Plan" dated 20 November 2012 for the Tower {SEA00000167}. This document is the KCTMO's Fire Risk Assessment (FRA). The actions listed in the FRA were outside the scope of Studio E's work because they deal with operational issues and in any event, I do not believe they identified any issues that Studio E would have had to respond to. She also forwarded me and Max Fordham some of Carl Stokes' *thoughts* about fire alarm systems at the Tower {SEA00010457}.
349. On 27 January 2014, Paddy Glennon emailed Carl Stokes some fire drawings, floor plans and sections from the Employer's Requirements drawings {SEA00010468}. The drawings included the proposed basement plan {SEA00002590}, proposed Ground floor plan {SEA00002594}, proposed Mezzanine plan {SEA00002595}, proposed Walkway plan {SEA00002591}, proposed Walkway + 1 plan {SEA00002659}, proposed existing residential plan {BS1/234}, proposed roof plant plan {SEA00002561}, proposed roof plan {SEA00002593}, proposed sections (A {BS1/235}, B {BS1/236}, E {SEA00002556}, F {SEA00002557} and G {BS1/237} - essentially vertical cross sections of the Podium, first existing residential floor and basement), proposed fire access plan {SEA00002496} and proposed fire strategy {BS1/238}. I think we were asked to forward these drawings. It is normal that anyone reviewing fire safety strategy needs drawings to understand the building and record details and to pass on to others
350. I note that Studio E holds a number of documents dated on or around 29 January 2014 regarding the specification of FD30S fire doors for the new flats in the Podium. This may have been prompted by Carl Stokes' (KCTMO's fire consultant) email of 24 January suggesting the new flat entrance doors could be reduced to FD30S. I believe our final drawings show FD60S doors and this is

what Rydon eventually installed {SEA00010498} {SEA00010500} {SEA00010504}.

351. My notebook contains notes of a meeting dated 12 February 2014, which I believe was a meeting at Kensington Fire Station, just off Kensington High Street {SEA00010558}. The note says "Nick" and "Dan", who might have been the LFB attendees at the meeting. Claire Williams (KCTMO) attended {SEA00010559}. I recall very little about the meeting, but I believe that the main purpose was because KCTMO wanted to clarify any concerns the LFB may have had on fire safety and fire fighting issues and my role was to explain the design. I believe Claire's main concern was to reduce the risk to the Project, and that she had taken this direct approach, at least in part, because of the frustration we had had in obtaining any advice from the LFB via Building Control, on the smoke ventilation or fire fighting issues generally.
352. After the meeting, Claire Williams (KCTMO) emailed me and Max Fordham to say that a site visit with a Dan Hallissey and Matthew Ramsey (the latter she described as LFB's "*high rise man*") later in February 2014 had been arranged, and that Nick Comrey (LFB's regulatory safety team leader) would facilitate a chat with the engineers about the smoke ventilation system {SEA00010559}.
353. On 14 February 2014, I emailed Claire Williams the fire strategy drawings together with Building Control's P1 comments on them from the end of December 2013. I believe this was to facilitate the chat with the regulatory safety team. I said that I would "*hesitate*" about sending the P1 comments because I thought Building Control had taken a conservative line. By this, I was referring to the comment about upgrading all the existing riser and cupboard doors to the lobbies, and removing access to the risers at Walkway level which I thought may be problematic for the distribution of new services in the Tower. (See doors annotated "A" on "*RBKC MOE Plan Grenfell Tower, Grenfell Road (1279 SEA (08) 101) P2*" {SEA00002629}).
354. On 26 February 2014, Exova emailed me, Claire Williams (KCTMO) and Max Fordham with some comments on Building Control's P1 comments from December 2013 {SEA00000170}. I replied to Exova on 3 March 2014, stating

that the tender report was in preparation, and that Studio E would be appointed to the successful contractor. I hoped that work would commence soon after that so that we could follow up with Building Control, and unless KCTMO decided otherwise this would be under the control of the successful contractor {SEA00010637}.

355. On 3 March 2014, Claire Williams said that the purpose of the upcoming site visit was to discuss the fire strategy and that *"we are getting them to understand our strategy without the submission – apparently they have a chap who specialises in high rise blocks who will be meeting us"* {SEA00010633}.
356. On 12 March 2014, I met with Claire Williams (KCTMO) and Daniel Hallissey, Matthew Ramsey and Ben Lewis from LFB for a site visit. Following the meeting, both Claire {SEA00010645} and I {SEA00010651} circulated notes of the meeting. The notes state that the LFB were not happy with the state of the existing smoke ventilation system. Studio E has a photograph titled *"smoke ventilator remote control panel"* {SEA00010649}, which I believe was taken on or around the date of this meeting. Following my meeting notes, Claire said she would meet her internal team {SEA00010652} and Janice Wray (KCTMO, health, safety & facilities manager) said she would urgently instruct Carl Stokes (KCTMO's fire consultant) to carry out a fire risk assessment of the garage area (which was ultimately not part of the scope of the Project) {SEA00010653}.
357. During late March 2014, discussions with Max Fordham, KCTMO and Exova continued regarding the smoke ventilation system {SEA00010654} {SEA00010657}. For example, on 17 March 2014, Exova sent an email which I believe states that the Tower's smoke ventilation system may not comply with the relevant regulations when it was built {SEA00000172} and Max Fordham said that RBKC did not have any historical regulatory records regarding the smoke ventilation system {SEA00010660}. I understand Claire Williams (KCTMO) was in contact with LFB about the information it needed about the proposed smoke ventilation system upgrade {SEA00010678}. Max Fordham warned KCTMO that adapting the system to fix the dampers in the open position in the interim (ie. before the smoke ventilation system was upgraded as part of the Project) would allow smoke to spread from floor to floor {SEA00010680}.

358. By 17 March 2014, Rydon had been confirmed as the preferred bidder and I believe all parties assumed that it or its specialist sub-contractor would take over the lead role in getting agreement on the upgrade to the smoke ventilation. I had limited further involvement and I believe that Neil discusses Studio E's involvement in the smoke ventilation system further in his statement.

H5 Tender returns

359. On 17 February 2014, Artelia emailed me, Max Fordham, Curtins and KCTMO and circulated details of the tenders received, which were from Mulalley (£10.4M), Durkan (£9.9M) and Rydon (£9.2M) {SEA00010575}.
360. On 19 February 2014, Artelia emailed me, Max Fordham and Curtins and requested comments on the tenders received, for the Tender Report {SEA00010581}. He attached the "*Tender Qualification*" {SEA00010582} and "*Alternative Cost*" {SEA00010583} spreadsheets. In preparing this statement, I note that comments on Artelia's documents regarding the Rydon tender include "*Rydon's supply chain partners are advising that there are further significant cost savings that could be achieved*" and "*Rydon has priced the scheme as drawn and assume it complies with the Employer's special requirements*". In preparing this statement, I note that comments on Artelia's documents on the Mulalley tender include "*No offer on alternative design solution for Aluminium cladding*". In preparing this statement, I note that the alternative costs sheet show a value of -243,067.00 against the item "*New aluminium cladding*" for Rydon, -169,726.89 for Durkan and "*No offer*" for Mulalley.
361. Later on 19 February 2014, I emailed Artelia with comments on Rydon's tender {SEA00010586}. I had not at this stage commented on the other tender returns because the others seemed "*so far behind*". By this, I meant that the other two were so much more expensive. Regarding the further costs savings that Rydon said might be achievable (including cladding), I suggested that Artelia confirm that the cladding and window system specified had been priced by Rydon and not the savings mentioned in their return {SEA00010586}.
362. On 28 February 2014, I emailed Artelia with my responses to the architectural quality questions for the tender returns {SEA00010630} {SEA00010631}. I gave the following scores: Mulalley 32.5, Durkan 27, Rydon 35.
363. On 19 March 2014, Artelia emailed me, Max Fordham, Curtins and KCTMO and stated that Rydon were the preferred bidder and were in a ten day standstill period {SEA00010663}. I understand this is a mandatory period, set out in the EU procurement regulations, for unsuccessful bidders to challenge the result of

the tender process. The local authority client is not in contract and the bidder is not meant to start work.

H6 Other matters

Studio E's appointment and invoicing

364. In early December 2013, we were chasing KCTMO to pay our October 2013 invoice of £18,063 which it had not yet paid {SEA00010128} {SEA00010130}. I do not know if it was connected, but on 24 and 31 December 2013, Claire Williams (KCTMO) emailed me to ask if I had a copy of a letter from KCTMO confirming SELLP's appointment {SEA00010231} and requesting an explanation of how consultants were originally selected on the Project {SEA00010236} as she was doing some audit work. In response, I said that I thought I had forwarded on everything that I had on the appointment history {SEA00010237}. The next day, I emailed Claire Williams and in the email stated "*the novation document was protracted. I'm not even sure the documents have been signed although we signed ours a year ago*" - I believe this was in relation to KALC and not the Project {SEA00010239}. She also asked me how the original consultants were selected because at that point Studio E was the "*longest standing consultant on the scheme*" (although Curtins, Max Fordham and Artelia would also have been involved in the Project for almost as long) {SEA00010236}. On 14 January 2014, I forwarded a short history of Studio E's appointment up to 13 February 2013, which I had previously sent to Peter Maddison (KCTMO) {SEA00010333}, as I thought this might be adequate information for Claire's audit. In my opinion, Artelia should have been able to provide KCTMO with much of this information as my understanding is that it was their role to act as the project manager, and carry out these sorts of tasks.

Podium layout

365. On 16 December 2013, I attended a meeting with Claire Williams (KCTMO) (and likely others although I cannot recall whom). Three days after the meeting, Claire Williams (KCTMO) circulated her notes of the meeting and had a number of queries about the internal layout of the Podium, including querying the ceiling heights of the Mezzanine floor {SEA00010221}. I have not commented on this further as I understand it is not likely to be of relevance to the Inquiry.

366. I believe that around March 2014, KCTMO was still interested in potential changes to the Podium layout, as I emailed Claire regarding how additional residential accommodation could be accommodated on the Mezzanine and Walkway {SEA00010646}.

Planning approval granted

367. On 10 January 2014, I received an email from Marc Watterson (IBI) attaching the Planning approval for PP/12/04097, the application dated 18 October 2012 and revised on 30 July 2013 {BS1/239-245}. I forwarded the notice to other members of the design team {SEA00010301}. The permission was subject to conditions, condition 2 of which was that the Project must be carried out in accordance with details shown on certain plans and conditions 3 and 4 requiring that Planning must specifically approve the materials to be used on the external faces of the building and the windows and doors. The reasons that Planning gave for imposing these conditions indicated to me that they were motivated by aesthetic considerations. I subsequently received a copy of the covering letter from IBI to KCTMO which provided further details on the planning approval {BS1/246}.

I APRIL 2014 TO 2016: PRODUCTION INFORMATION AND CONSTRUCTION

368. In this section, I describe:

368.1 My initial experience with **Rydon** and their proposed substitution of the cladding materials;

368.2 The other areas of work I was aware of between April and June 2014;

368.3 The change in the level of my involvement in the **Project**, the Novation and the insolvency of **SELLP**;

368.4 Discussions regarding the Building Control fee in and around July 2014;

368.5 The materials submission in July 2014 and August 2014;

368.6 Contact with Building Control regarding the dry riser in August 2014;

368.7 Matters I was aware of in August and September 2014;

368.8 Matters I was aware of in **October** 2014;

368.9 Matters I was aware of in November and December 2014;

368.10 My involvement in Harley's Drawings;

368.11 The position regarding Studio E's invoicing during this period;

368.12 An overview of other issues I was involved with in 2015;

368.13 An overview of my understanding of the landscaping works; and

368.14 The photographs from the site on 5 March 2016.

II Initial experience (Rydon) and proposed substitution of cladding materials

369. Shortly after Rydon was confirmed as the preferred bidder, I sent an internal email to Andrzej, and others, saying that I was going to suggest a site visit to Ferrier Point, a recent residential recladding project carried out by Rydon and Harley {SEA00010664}. This was because both Harley and Rydon had discussed the similarities with the Tower, it was a recent and quite highly specific project and it was clad in ACM. I also invited Claire Williams (KCTMO), Peter Blythe (Artelia) and Matt Smith (Max Fordham), suggesting a visit to the Chalcot Estate as a closer alternative {SEA00010665}. The Chalcot Estate was also a Rydon and Harley project. Claire replied, stating "*I think the idea is to understand the options on the different types of cladding, for both appearance and cost*", and that hopefully a site visit could be agreed after KCTMO's standstill period expired on 28 March {SEA00010666}.
370. On or around 19 March 2014, Simon Lawrence (Rydon) and I spoke by telephone {SEA00010667}. I do not recall what was discussed, but afterwards I emailed Claire Williams (KCTMO) and said "*the conversation with Simon focussed quickly on VE*" (value engineering) and "*My previous experience is that D&B contractors keep the detail costs to themselves*" {SEA00010669}.
371. However, on or around 24 March 2014, I met with Simon Lawrence (Rydon) and my first impressions of Rydon were good. I emailed Claire Williams (KCTMO) afterwards and said Simon and I discussed points including the history of the Project, materials, value engineering and planning {SEA00010679}. I also said that Simon said he had been with Rydon for a long time, and that he had explained Rydon was not like other contractors because "*senior management can be inclined to sacrifice a bit of profit in the interests of a smooth experience*". I said this was "*music to [Claire's] and my ears*" and "*they seem very suited to the project*" because, my perception following the meeting was that Rydon were very experienced in working in occupied social housing, that they understood how to deal with residents and local authority clients and had a collaborative attitude. Also they had completed a number of overcladding projects on high-rise towers.

372. Around this time I believe I asked Simon Lawrence whether Rydon would extend Exova's appointment or appoint another fire consultant. Simon said that Rydon typically did not engage fire consultants on the basis that the strategy was established by the client's team and, as contractor, it was responsible for executing it. He regarded it as Building Control's responsibility to raise any concerns and satisfy themselves with the details of the submission.

373. On or around 1 April 2014, Philip Booth (Artelia) attended an introductory meeting with Rydon, which I did not attend. After the meeting, he emailed Marc Watterson (IBI), copying me, asking for his opinion on three of Rydon's ideas {SEA00010698}:

"1. Rydon are proposing a face fixed Aluminium cladding system in colours to mirror those submitted for planning. How do you advise presenting this to planners for discharge? Is a meeting required or simply supply materials proposed?"

2. It is proposed to remove the crown to the top of the building as for maintenance reasons it would be prudent to enable abseil access if ever required in the future.

3. The louvre panel proposed for the windows is proposed to be removed as has caused wind reverberations complaints and issues on alternative schemes."

374. Following this, on 6 April 2014, Marc Watterson (IBI) emailed stating the information planners would need to make a decision on accepting a substitution of cladding material {SEA00010720}. He said:

"I would recommend that a meeting with them to present early thoughts on materials, with physical samples, would be appropriate. I would suspect that they will have queries and issues and may well ask for alternatives to be explored for certain proposed materials / colours so I would also recommend exploring options for the cladding at this stage".

375. In and around April and May 2014, Studio E was involved in preparing materials to support the process outlined by Marc Watterson (IBI). Studio E was

not involved in all of the discussions about the potential change in cladding material. For example, I understand that there were conversations between Rydon, Harley and / or Reynobond which we were not party to {SEA00010755}. In my experience, it is usual for a main contractor to negotiate directly with the client, and involve designers such as architects only to the extent their specific input is required.

376. Studio E's input was principally providing input from an architectural perspective. I have outlined Studio E's involvement further below.

Studio E received technical information about Reynobond from Alcoa / Arconic

377. On 23 April 2014, Simon Lawrence (Rydon) forwarded me some information received from Deborah French of Alcoa (I understand that around November 2016, parts of Alcoa's business were moved to Arconic) {SEA00002686}. I filed the email attachments to a sub-folder in Studio E's project file. Having checked the sub-folder, it appears that the attachments to Rydon's email included:

377.1 Reynobond colour charts for the "*Standard*" {SEA00000858}, "*Effects*" {SEA00000869} and "*Brushed Look*" {SEA00002330} ranges;

377.2 A technical bulletin titled "Cleaning Recommendations for Alcoa Architectural Products aluminium panels" {SEA00000515};

377.3 A British Board of Agrément Certificate titled "*Product Sheet 1 - Reynobond Architecture Wall Cladding Panels*" dated 14 January 2008 {SEA00000516} (the BBA Certificate);

377.4 A Material Safety Data Sheet for "*Reynobond Aluminium Composite Material*" dated 2 November 2007 {SEA00000512}; and

377.5 A specimen warranty {SEA00000517}.

378. I also believe I had hard copies of these brochures in the office from Studio E's previous contact with Reynobond. I believe it is likely these would have been the same as the digital copies referred to above and do not believe Studio E still holds the hard copies.

379. The same day, Simon Lawrence also sent me some information to clarify the costings of various different Reynobond finishes {SEA00010775}.
380. I forwarded the technical details email to my colleague Kai Fabiunke, who was assisting me with sketchup visualisations of the cladding design at the time {BS1/247-248}. Kai is an experienced senior architect. Specifically, Kai assisted by preparing images of what Studio E hoped to achieve on the ACM rainscreen cladding panels {SEA00010900}, including considering the visible fixings {SEA00010779} and column cladding {SEA00010889}. The drawings he prepared were, although quite detailed, essentially visualizations for discussion with Planning (for example, see {BS1/249}, {BS1/250} and {SEA00010905}).
381. I would have read the Reynobond documents between 23 April 2014 and 15 May 2014 (as to the date range, see below). While I do not recall specifically what I noted from them at the time, I would have been reviewing them from an architectural perspective and would have been particularly interested in the colour charts, because the focus at the time was getting planning approval for the materials in an aesthetic sense. At this stage, neither Studio E nor Harley were carrying out detailed design, as can be seen from an email from Mark Harris (Harley) to Simon Lawrence (Rydon) dated 22 May 2014 where he says "*cladding detailing etc. will have to be dealt with as part of the main scheme design*" {SEA00010993}, although I do recall having early conversations with Daniel Anketell-Jones (a designer / draftsman at Harley) about certain details {SEA00010786}, perhaps how to form the 'birds-mouth' or recessed joint to the projecting corner of the columns {SEA00010782}.
382. Also around this time, Rydon were arranging for cladding samples to be ordered {SEA00010778} and liaising with Harley {SEA00010785}.
383. On 15 May 2014 I forwarded the British Board of Agrément (BBA) Certificate to Peter Blythe (Artelia), copying in others including Claire Williams (KCTMO), commenting on an extract regarding the service life of ACM, because I had identified that the service life of Reynobond was stated to be shorter than, say, a VMZinc product {SEA00010953}.

The BBA Certificate and behaviour of fire

384. On re-reading the BBA Certificate after the Fire I note that the Reynobond-clad building illustrated on the first page is a commercial building in excess of 6 storeys high and the cladding therefore probably extends more than 18m above ground and it states among other things that the certification includes "*factors relating to compliance with Building Regulations where applicable*" and "*design considerations*", and that a key factor assessed is "*behaviour in relation to fire*" where "*in relation to the Building Regulations for reaction to fire, the panels may be regarded as having a Class 0 surface in England and Wales, and a 'low risk' material in Scotland*" {SEA00000516_0001}.
385. With the benefit of hindsight and as a matter of completeness, I also note that the BBA Certificate contains further information about the behaviour of the product in relation to fire in the later pages {SEA00000516_0005}.
386. Although I do not recall whether I did, had I noted that the panels were designated as Class 0, I would have taken this to mean that the Reynobond product met the classification requirement identified in ADB2 vol 2, diagram 40. In short, there was nothing on the face of the BBA certificate that would have alarmed, warned, or concerned me regarding the proposal by Rydon to use the product as cladding on the Tower, particularly given my understanding that it had been used widely on similar projects.
387. As an architect responsible for specifying products, to me the BBA Certificate had a special status, which can be adequately described by quoting from the British Board of Agrément's own website: "*(We are) An independent non-profit distributing organisation, our ambition is to provide reassurance to the construction industry that manufacturer's products, systems and procedures are 'fit for purpose' (We are) Accredited by the United Kingdom Accreditation Service (UKAS)*". In my experience a BBA certificate showing independent testing data to the effect that it complies with the relevant Building Regulation is a way of satisfying Building Control that a product is appropriate for its application.
388. Although I was not aware of it at the time, following the Fire I became aware that Arconic had published a document titled "*Fire safety in high-rise buildings*"

{BS1/251-252}. The document is dated December 2016. It explains that Reynobond is available in different grades (PE, FR and A2), and that "*as soon as the building is higher than the firefighters' ladder, it has to be conceived with an incombustible material*" (which according to a diagram contained in it means FR or A2 grades are required). For the avoidance of doubt, no such information was contained in the literature provided by Alcoa that I received on 23 April 2014. I do not recall having seen any such information before the Fire. I do not know if Alcoa / Arconic had published such information before December 2016, and if they did not then I do not know what changed between April 2014 and December 2016 that caused Alcoa / Arconic's suite of product literature to be updated in this way. Prior to 2017 I did not know that Reynobond came with different core materials. The core had never been a topic of conversation.

Meeting with Planning

389. Rydon and IBI were tasked with organising a meeting with Planning at the Pre-Contract meeting on 9 April 2014 {SEA00010761}. One of the things we wanted to discuss with Planning was the potentially sensitive change in materials {SEA00010790}.
390. On 30 April 2014, in advance of this meeting, I emailed Claire Williams (KCTMO) and Simon Lawrence (Rydon) attaching a PDF showing several cladding materials samples we had collected over the preceding months {SEA00010820}. Claire replied suggesting that the cladding samples were organised in cost bands, with the most expensive samples "*out of our visual reach*" {SEA00010826}.
391. On 8 May 2014, I attended a meeting with Planning, Rydon, KCTMO and Artelia to discuss materials and potential alterations to the planning application. I presented sheets to Planning {SEA00010912}.
392. Artelia made notes of the meeting, among other things which state {SEA00010942}:
- 392.1 A flat panel ACM was proposed as the cladding material. Whilst the general appearance of the cladding design was a condition of the

approved planning scheme. A change in the cladding material and finish would be handled as a discharge of the planning condition;

392.2 Planning were shown samples of five Reynobond finishes. Planning said their preference was for a *"slight texture and glossy panel"*;

392.3 Regarding the Crown: *"The simple vertical configuration to the crown was preferred, but this was a marginal call."*

392.4 Rydon to provide detailed drawings of the windows as well as a sample of the window, window frame and infill, and a sample panel once colours decided.

393. According to an email from Claire Williams to IBI Taylor Young after the meeting, *"we did not say how much the change of panel was to the whole scheme, but in round terms it is about £220k - and makes a substantial difference to the viability of the scheme"* {SEA00010906}. She also said that Rydon was going to get a sample instructed.

394. On 9 May 2014, I emailed Rydon and said regarding the meeting that *"as expected the exposed fixings where [sic] targets for concern and the sample will be necessary to allay them"* and *"they took 5 or 6 samples and offered to come back with thoughts/comments by the end of next week"* {SEA00010913} (I believe I accidentally addressed this to a "Steve Sharkey" but meant to send this to Stephen Blake (Rydon)).

Planning remained unconvinced about ACM panels

395. After our meeting, between 8 May 2014 and 16 May 2014, Sarah Scannel (a planner at RBKC) had visited the Chalcot Estate in Camden {SEA00010964}, another project that Rydon and Harley were involved in as main contractor and subcontractor and held up as an example. Her impression was that ACM was *"flat, almost dull"* and therefore not suitable for such a high profile building {SEA00010959}.

396. After this, I worked with KCTMO and Rydon to prepare a large scale sample of what it would look like at the Tower {SEA00010964}. Simon Lawrence (Rydon)

said that he thought "*KCTMO are keen to emphasize the cost difference so can achieve maximum saving*" {SEA00011032}.

397. On 2 June 2014, Simon Lawrence (Rydon) emailed Artelia with an update on the progress with the cladding. He said that we had been working on selecting the type of cladding, which he indicated meant "*colour and texture*", that we felt would be in line with what Planning are after {SEA00011069}. Rydon had identified a property in Kilburn where the Reynobond Natural Brushed Aluminium had been used, and on 6 June 2014 Simon Lawrence emailed to say "*planners have responded reasonably positively about Kilburn sample but have requested bronze type sample also. Therefore the mockup will now need to consist of two colours*" and "*Bruce to send Harley dwg Autocad file of the mock up draft so Harley design team can turn in to working drawing. This is then to be approved by Bruce*" {SEA00011100}.
398. At this stage, which was not detailed design, the full detailing of the cladding was not being considered {SEA00010993}. However, I had prepared a sketch to establish a design intent for face-fixed ACM {SEA00011127}, which I shared with Rydon and Harley in DWG format to assist Harley in developing a working drawing {SEA00002730} {SEA00011101}. The plans and sections shown, based on the Typical Bay Drawing, were not updated and are not part of the mock-up sketch.
399. Harley proposed a simple drawing for the mock-up which was stated to be for visual purposes only, with no insulation and "*drawings will be deiailed once under contract*" {SEA00002736}, "*in order to not cause confusion at this stage*" {SEA00011156}, which I would probably have taken to mean he didn't want to distract from the material choice.
400. On 20 June 2014, Simon Lawrence (Rydon) emailed Claire Williams (KCTMO) and copied me in, stating "*we only need a certain amount of detail to satisfy the planners, they are really looking at the big overall picture*" {SEA00011192}.
401. I also note that Rydon said that they had not engaged with any of Reynobond's competitors "*so far and we don't intend to providing they give us service*" {SEA00010994}. This was a decision for Rydon, as main contractor.

402. I discuss the materials submission further in section I5 below.

12 **The other areas of work I was aware of between April and June 2014**

403. On 1 April 2014, Claire Williams emailed me and said that she wanted to get the fire strategy for the Tower on to the radar of the LFB, particularly to get an understanding of any issues they might have with smoke venting of the lobbies on the Upper Floors {SEA00010699}. The next day, I responded to her with a copy of the OFSS and Building Control's mark-ups of plans for the Project {SEA00010706}, although flagged it was likely the mark-up was to be superseded and not worth passing to the LFB at this stage. I was still concerned about the implications on the service risers discussed above. By stating that it was likely to be superseded, I meant that we were working on reconfiguring the Podium again, so the drawings that Building Control had marked up would no longer be current. Throughout the Project, I consider that Studio E consistently tried to push those parties with responsibility for designing the smoke extract system to find a solution to this issue. Claire and I exchanged further emails regarding whether she should approach the LFB with the current documents {SEA00010712} {SEA00010715}, but to the extent the discussions were about the smoke ventilation system then there was little Studio E could contribute as this would have been more of an issue for Max Fordham, Exova, Rydon and its sub-consultant(s).
404. On 27 May 2014 I emailed Rydon some value engineering suggestions {SEA00011053}. I do not recall what prompted this, perhaps a request from Rydon, and I said "*I don't want to undermine the scheme too much*".
405. On 5 June 2014, Claire Williams (KCMTO) confirmed that we should press ahead with a further planning application to replace the proposed office on the Mezzanine and Walkway levels with two further residential units {SEA00011087}. On 9 June 2014, I circulated the proposed plans for this application {SEA00011103}.

13 Change in the level of my involvement in the Project, the Novation and the insolvency of SELLP

406. Around July 2014, my colleague Neil Crawford began to take a role as Studio E's day to day contact on the Project. I continued to be copied into emails, for example to the Studio E email distribution list titled "Grenfell_List" which I was on. I knew Neil well and felt he was capable of being the principal point of contact on the project. He would refer any issues to Andrzej or me if he had concerns, and the clients – Rydon or KCTMO – knew they could contact me if required. In any case, Rydon had by now taken lead responsibility for delivering the Project, and our role had been changed.
407. Regarding the Novation, on 2 April 2014 Simon Lawrence (Rydon) said he would start looking at the Studio E's appointment, by which I think he would have meant Rydon's appointment of Studio E {SEA00010713}. He emailed me a proposed draft of a schedule of services on 17 April 2014 {SEA00010749} {SEA00010750}.
408. I do not recall the exact date when I first raised SELLP's potential insolvency with Simon Lawrence (Rydon). I recall that when I did mention it, I was surprised how quickly Simon accepted it and said he was happy to continue to work with SEAL. I had anticipated there might be complications. I emailed Andrzej and David Lloyd Jones (both Studio E) on 6 June 2014 and said that Rydon had agreed in principle to contract with SEAL {SEA00011095}.

14 **Building Control fees**

409. On 24 July 2014, I emailed John Allen (Building Control) asking him to get in touch with me so that we could discuss the Building Control fees for the Project. I confirmed that KCMTO's budget was £8.5M and that the application for Building Control approval would be made by Rydon, who were the design and build contractor, and that "*Studio E's appointment has been novated to Rydon and we will be leading on gaining approval*". I also made the point that "*The fire strategy was a tricky subject and we would like to engage on that as soon as possible*" {SEA00000175}.
410. On the same day, I emailed Simon Lawrence and Zak Maynard (both Rydon) to ask for a breakdown of the construction costs so that Building Control could confirm their fee. Building Control had advised which elements they considered should be used to calculate the fee. For example costs relating to demolition, landscaping and upgraded floor finishes could be excluded but cladding, heating and ceilings needed to be included. I confirmed that a lower project cost would result in a lower Building Control fee and asked Rydon to provide a summary of the costs so that we could liaise with Building Control {SEA00011348}.
411. On 25 July 2014, Zak Maynard (Rydon) responded to my request for a breakdown of the Project costs for the purpose of determining the Building Control fee, and confirmed costs totalling £2,201,000, of which £1.1M was for cladding {SEA00011356}.
412. On 29 July 2014, John Allen (Building Control) emailed me with the Building Control fee confirmed at £11,982.60 following his consideration of the project costs. This sum was broken down as £5,548.20 for a plan charge to accompany the application, and £6,434.40 for the inspection charge {SEA00011395}.
413. I prepared the Building Control Full Plans Application form around July 2014 which I passed on to Rydon for submission.

15 Materials submission

414. On the morning of 30 June 2014, Studio E delivered the materials submission (Conditions 3 and 4) to RBKC and spoke to the Planning officer, Sarah Scannell. I emailed Claire Williams (KCMTO) to confirm this {SEA00011261}.
415. I emailed Marc Watterson (IBI) and Simon Lawrence (Rydon) the same day to confirm that Sarah Scannell (Planning) was concerned that eight weeks was insufficient to negotiate the outstanding materials outlined in the planning conditions discharge. I suggested to Simon Lawrence that he arrange to prepare one pilaster and one spandrel in brushed aluminium and highlighted to Marc Watterson that Sarah Scannell's stance appeared unreasonable in light of the fact that the local authority client did not want to pay for zinc and had agreed to a programme of work. Marc Watterson responded confirming he too had reassured Sarah Scannell that eight weeks should be plenty of time to agree the outstanding items {SEA00011265}.
416. On 3 July 2014, Simon Lawrence (Rydon) emailed me to arrange a date for an initial design team meeting to take place in the week of 14 July 2014. {SEA00011271}. I ultimately attended the site with Neil Crawford (Studio E) on 15 July 2014 when we viewed the cladding mock-up in progress and had the first design team meeting with Rydon.
417. On 9 July 2014, Simon Lawrence (Rydon) emailed me to confirm that they had started to prepare a mock-up but *"it's had a few minor hiccups from Harley's point of view so is taking slightly longer than expected"*. He confirmed it would be good for me to take a look before the scaffolding was removed the following Monday in case *"there are any tweaks required"* {SEA00011298}. The mock-up included three standard ACM finishes from Reynobond: Smoke Silver Metallic, Champagne Metallic and Brushed Natural Aluminium. It also included a section of polyester powder coated (PPC) aluminium to represent the window colour and a white aluminium panel to represent the solid glazed panels. {SEA00011305} I had agreed this selection with Rydon, IBI and the client.
418. On 15 July 2014, I sent Councillor Feilding-Mellen a link to an album of pictures of a housing project in Kilburn which I had previously discussed with

him to help demonstrate the likely finish of the materials that were being proposed (the same, discussed in paragraph 397). That project had the same brushed aluminium finish as the sample which I was proposing. I confirmed that we would meet him on site on 17 July 2014 to meet with the Planning officer.

419. On 17 July 2014, I attended the site and took photographs of the mock-ups, control panels and the CCTV display {SEA00011307} {SEA00011308} {SEA00011309} {SEA00011310}. I recall meeting Councillor Feilding-Mellen, possibly on this Thursday, on the Walkway where we briefly discussed the samples. I recall his comments to be similar to those contained in the email discussed below.
420. On 18 July 2014, Councillor Feilding-Mellen responded to my email with the album of photographs from the Kilburn site and said he could "*appreciate the look that you are going for*". However, he commented "*I'm still not 100% sure that I prefer the brushed aluminium to the 'battle-ship grey' painted option, but that is very subjective, and I am quite relaxed about the choice in the end*". Peter Maddison (KCTMO) responded the same day to confirm that the Planning preference was for the champagne finish as opposed to the brushed aluminium and that they also preferred the "*cassette*" fixed approach over the "*face fixing*" for the cladding. Peter Maddison confirmed he had looked at the costs, and noted that face fixing would save around £80,000, and that a hybrid of face fixing above level 4 would save around £40,000. He concluded "*We have budgetted (sic) for cassette fixing, so this matter is not critical to delivery of the scheme. However, any savings would be a benefit in terms of value for money and risk management of the budget*" {SEA00011320}.
421. On the same day, Councillor Feilding-Mellen emailed back to confirm that he "*really didn't like the 'champagne'*" and stated "*Let me know if I need to speak to Planners*" {SEA00011321}. Peter Maddison (KCTMO) then sent me a separate email asking to speak to me about the position later the same day, which I do not recall. I think he wanted my view, which was that either the Champagne or the grey would be acceptable.

422. The issue of colour choice for the cladding was ongoing for a while. On 23 July 2014, Sarah Scannell (Planning) emailed Marc Watterson (IBI) and copied me in highlighting that *"Officers are reviewing these proposals in the knowledge that Grenfell Tower is highly visible from many points across the borough, and given its height, will be difficult to maintain and that the process of re-cladding is an expensive one. Officers are seeking a high quality finish to the building not only for the reasons of design and visual amenity, but also to ensure that the material have sufficient longevity."* Sarah Scannell also confirmed the proposed fixings were not acceptable and that concealed fittings / cassettes were required in order to achieve a high quality finish. She also expressed the view that they were not convinced that the colour of the Natural Aluminium Brushed panels would result in a high quality finish and that their preference was for the Champagne Metallic panel but given the implications for the Project she requested a full image of the building clad in Champagne Metallic before a decision was made {SEA00011344}.
423. On 24 July 2014, I was copied into an email that Marc Watterson (IBI) sent to Claire Williams (KCTMO) providing an update following his discussion with Sarah Scannell (Planning) on planning issues. He confirmed that she was insisting that the fixings should be hidden across the building – not only due to the improved appearance but also because of the potential for fixings to attract rust over time. On the issue of colour, grey was considered a possibility and the materials across the horizontal and vertical were to be the same although not for the Podium floors.
424. On 25 July 2014, I was copied into an email that Peter Maddison (KCTMO) had sent to Councillor Feilding-Mellen regarding the colour and fixing requirements for the cladding. He confirmed that I had been asked to prepare a worked up drawing with the "Champagne" option and that Planning had requested cassette fixing throughout. He stated *"We will continue to push to see if they will move on this above the 4th floor"* {SEA00011352}.
425. I emailed Peter Maddison (KCTMO) a visualization of the building in the aluminium Champagne colour as Planning had requested on the same day. Peter Maddison responded by asking that I liaise directly with Councillor Feilding-

Mellen as he was out of the office that day {SEA00011354}. Claire Williams (KCTMO) responded to the email with some requests for notes to be added to the drawings about the materials before they were sent to Councillor Feilding-Mellen {SEA00011358}. Claire Williams sent a further email later that day asking for further information to be added about the cladding colours {SEA00011371}.

426. On 25 July 2014, Simon Lawrence (Rydon) emailed Marc Watterson (IBI) and Claire Williams (KCTMO), copying in me and Peter Blythe (Artelia) regarding the cladding. He raised the colour and also stated "*As suspected from the start the biggest item is the 'fixing method'. This now can only be decided and challenged by KCTMO because it involves their budget and available funds*" {SEA00011359}.
427. Mike Albiston (Harley) emailed me on 25 July 2014 responding to my request and confirmed that the Glass fibre Reinforced Concrete column cladding in its tender was from BCM GRC Ltd as set out in the NBS Specification {SEA00011362}. On 28 July 2014 Mr Albiston subsequently emailed Darin Ballington (BCM GRC) to ask that he send sample tiles to Harley and Studio E.
428. On 28 July 2014, Marc Watterson (IBI) emailed David Gibson (KCTMO), copying in both Claire Williams (KCTMO) and me regarding the feedback from Sarah Scannell (Planning). It was noted that Planning would not accept face fixing and he stated "*They are aware of the costs savings but on this occasion they do not outweigh their concerns over quality, appearance and longevity*" {SEA00011373}.
429. On 28 July 2014, I emailed Mike Albiston and Mark Harris (both Harley), and copied in Simon Lawrence (Rydon) and Neil Crawford (Studio E). I highlighted that since the submission was sent to Planning on 30 June 2014, due to a delay in getting the mock-up installed and the fact that a response had come back from Planning on 23 July 2014, we were now on the back foot in terms of time as the decision was supposed to be issued within eight weeks. I highlighted a proposal to simplify the joints by taking out the bird's mouth on the pilaster. This proposal was not adopted, possibly because the resulting pilaster panel would have been

too large. I also reiterated the comments from Planning regarding the lower level cladding {SEA00011390}.

430. On 29 July 2014, David Gibson (KCTMO) emailed me to confirm that he had forwarded my drawings showing the south elevation with Champagne panels to Councillor Feilding-Mellen and he asked me to forward any reference projects for the Glass Reinforced Concrete proposed at the lower levels. He suggested sending a comparison in brushed aluminium / grey combination {SEA00011397}.
431. Later that day, David Gibson (KCTMO) forwarded me some comments from Councillor Feilding-Mellen regarding the drawings. This included a comment on the cassette fixing, outlining his presumption that there was sufficient budget to have cassette fixings all the way up the building. If that was the case, he thought that type of fixing method would be better in the long run. He also commented on the fact that he and others on site had not liked the Champagne colour, and he was not keen on the lime green / grey colours on the lower levels, suggesting a more muted shade of green {SEA00011400}. David Gibson forwarded some further comments from Councillor Feilding-Mellen. David Gibson had responded to the first email by confirming Planning appeared to prefer the Champagne and were less convinced on the grey / aluminium, and in response he said that he would be flexible about Champagne, and that the most important thing was to "get cracking" {SEA00011401}.
432. On 29 July 2014, David Gibson (KCTMO) confirmed he had managed to speak to Peter Maddison (KCTMO) and they were comfortable with the Champagne panels and the position regarding cassette fixing. David Gibson therefore confirmed I could proceed to update Planning {SEA00011403}.
433. On 29 July 2014, Marc Watterson (IBI) emailed Sarah Scannell (Planning) and copied me in, providing an update on the cladding materials, confirmation that the Champagne colour had been proposed with concealed fixings with glass reinforced concrete at ground floor level {SEA00011404}.
434. On 1 August 2014, Marc Watterson (IBI) emailed Claire Williams and David Gibson (both KCTMO), Simon Lawrence (Rydon) and me stating "*I have been*

advised verbally that the CTMP [Construction Traffic Management Plan] for Grenfell has been approved, I will forward paperwork once received. Still pushing on the materials – the Officer will discuss with the Director next week and get back to us" {SEA00011438}.

435. On 14 August 2014, Marc Watterson (KCMTO) emailed me to confirm that it appeared that the Champagne colour had been chosen for the cladding with cassette fixings {SEA00011475} (although eventually the smoke silver metallic colour was picked).

16 Resubmission of Planning application in respect of the two additional residential units

436. On 31 July 2014, David Gibson (KCTMO) emailed Marc Watterson (IBI) and me regarding the planning application for the two additional residential apartments. He had had an email from Kitty Mortimer (RBKC) where she had said "*it may run out of time and need to be withdrawn and re-submitted*" {SEA00011423}.
437. On 1 August 2014, David Gibson (KCTMO) emailed Marc Watterson (IBI) and copied in Artelia, Rydon and me, confirming that the application for the two residential units needed to be withdrawn and resubmitted as "*there is not enough time to get the KDR and UU for the s106 drawn up*" {SEA00011437}.
438. On 1 August 2014, Simon Lawrence (Rydon) emailed David Gibson (KCTMO), Marc Watterson (IBI) and copied in Artelia and me outlining the implications of resubmitting the planning applications for the two residential units. Essentially, he confirmed that if the application was resubmitted at a later date and approved for the two residential units, this would not cause a delay in the programme of works and internal fit outs, although if the spaces were ultimately to remain as offices, this could have implications in terms of potential delay, and also design layouts in respect of the AOV's and fire exits {SEA00011439}.
439. On 3 August 2014, Marc Watterson (IBI) confirmed that "*the LPA has agreed to a Planning Performance Agreement (PPA) for Grenfell which means we can extend the time period for the determination (i.e. the s 106) of the application. This is a much more convenient and timely option*" {SEA00011443}.
440. On 28 August 2014, Simon Lawrence (Rydon) emailed the team to confirm that planning permission had yet to be obtained for the two residential units {SEA00011524}.

17 Contact with Building Control re: dry riser

441. On 22 August 2014, David Bradbury (JS Wright) emailed Neil Crawford (Studio E) and me confirming "*Simon has given me the contact for the fire officer, and I wish to speak with him about the dry riser however, I just need to run it passed [sic] you before I make contact with Daniel Hallissey*" {SEA00011489}. I replied on 25 August 2014 confirming that we had previously had contact with Paul Hanson and John Allen (both Building Control), and had met with them the previous year. I also attached comments from John Hoban (Building Control) sent on New Year's Eve {SEA00011493}.
442. On 1 September 2014, Simon Lawrence (Rydon) responded to David Bradbury (JS Wright) and myself confirming that John Hoban (Building Control) had been assigned to the Project and that JS Wright were welcome to speak direct to RBKC to discuss the work to the dry riser. JS Wright was the specialist mechanical sub-contractor appointed by Rydon. Simon asked that if any meetings were arranged, that he would let him know so that Rydon and Studio E could attend. {SEA00011542}.
443. David Bradbury (JS Wright) subsequently emailed John Hoban (Building Control) on 2 September 2014 and copied in both Rydon, Neil Crawford (Studio E) and me, regarding modifications to the existing dry riser as they were adding two additional floors at the bottom, and asked to speak to him about the measures that were needed to gain approval {SEA00000186}.
444. Paul Hanson (Building Control) replied to David Bradbury's (JS Wright) email the following day stating "*Essentially the building regulations cannot require you to improve the system to serve the existing floors over 50m. The regulations only apply to the work being carried out and additionally you must not adversely affect the existing building*" {SEA00011569}. David Bradbury subsequently confirmed that he would formally issue drawings to John Hoban (Building Control) via Studio E {SEA00000188}.

18 August and September 2014

445. On 22 August 2014, Kevin Lamb (Harley) emailed Rydon and copied in Neil Crawford (Studio E) and me with "*some preliminary drawings to prove the basics of design and set out, prior to us producing a full design package*" which were to be discussed {SEA00011490}.
446. On 26 August 2014, Neil Crawford (Studio E) forwarded to Kevin Lamb and Daniel Anketell-Jones (both Harley), Simon Lawrence (Rydon) and me copy of Harley's preliminary drawings with Neil's marked up comments.
447. There was some confusion as to whether a design team meeting was due to take place on 27 August 2014, but Neil Crawford (Studio E) confirmed to Harley and Rydon that he was planning to be on site on that day in any event and could therefore speak to them on site if required {SEA00011515}. Simon Lawrence (Rydon) subsequently circulated a meeting request for design team meeting number 2 to take place on 2 September 2014 when they would be "*focusing on the façade, architectural and SE works*" {SEA00011526}, which I do not believe I attended.
448. On 27 August 2014, Neil Crawford (Studio E) emailed Harley, Rydon and me and confirmed that he would have a call with Kevin Lamb (Harley) and Simon Lawrence (Rydon) the following day to discuss the preliminary cladding drawings {SEA00011520}.
449. On 3 September 2014, Simon Lawrence (Rydon) emailed John Hoban (Building Control) and copied in Neil Crawford (Studio E) and me, introducing himself and confirming that Rydon had processed the invoice from Building Control. He also confirmed "*Studio E are our Architects, lead designers who will forward all relevant drawings etc. in the future*" {SEA00000189}. At the time this was consistent with my expectation of our role in connection with Building Control.
450. On 4 September 2014, I emailed Simon Lawrence (Rydon) to ask if we could discuss Studio E's appointment, invoice and payment the following day. Simon responded the following day and stated "*As far as the appointments go. I chased my legal team last week because currently I'm waiting for there (sic) input to tie*

everything together, in particular any wording relating to your change of name. They advised me that they would get a chance today to look through the docs due to their workload. So I'll be talking to them later, I'm also in the office on Monday so I can go see them then as well if needed. Good news is that we have just signed contract with KCTMO so we can now close out all appointments, orders, etc fully" {SEA00011595}.

451. On 9 September 2014, Claire Williams (KCTMO) emailed me to ask me to confirm the position regarding the planning application as Peter Maddison (KCTMO) was due to speak to Planning that day {SEA00011609}. I did not get the opportunity to respond to Claire until the following day when I confirmed that we had not been asked to revise the Design and Access statement but that RBKC had been quite particular about the A1 drawings, which was understandable as they formed part of the final decision {SEA00011645}. On 18 September 2014, Claire Williams emailed Philip Booth (Artelia) and copied in Rydon and me confirming that Planning was not happy with the Champagne colour and so it had not been signed off. The colour of the building therefore continued to be an issue {SEA00011729}. I continued to be involved on the issues relating to the colour of the cladding and materials which continued through September 2014.
452. I was aware at around this time that Neil was in contact with Exova in relation to revising the fire strategy drawings to reflect the client changes to the Ground, Mezzanine and Walkway floors {SEA00000214}.
453. There was a design team meeting on site on 23 September 2014 which Neil Crawford (Studio E) attended. Following the meeting I had a discussion with Neil about some points and Neil sent an email to Kevin Lamb and Daniel Anketell-Jones (both Harley) and Simon Lawrence (Rydon) confirming that: *"The number of opening windows should stay as drawn in the planning drawings. The narrow opening lights are intended to be used as purge openings with the larger windows opening to facilitate cleaning; and the horizontal column panel joint should also be 45mm with the recess depth lining through with the vertical joints- please see marked up drawings the 45mm expression to be kept on vertical interface of column to flat cladding also".* He also forwarded

a response from Max Fordham following a query regarding the trickle vents
{SEA00011805}.

19 **October 2014**

454. On 16 October 2014, Neil Crawford (Studio E) and I received an email from Simon Lawrence (Rydon) proposing a design team meeting in the following week together with the client team. He expressed some concerns about the Project and stated:

"It has become apparent that the flow of information and Client design changes are not being communicated across the project team, mainly Client side. Also Claire is expressing concerns about the current design, wanting more changes and saying that she hasn't got any information. This I wouldn't mind so much but everything she has questioned so far relates to the tender drawings which we were obviously issued by the KCTMO. So either she hasn't read her own drawings or she feels that they are wrong or other things have change [sic] since tender within the TMO. Either way we need to get it bottomed out and understand their thinking so costly errors aren't made.

"Bruce – We will definitely need you to attend because you are the only one who really knows the history of why the design is where it is and the historic decisions by the Client. At the moment there is a chance everything from window size to new flat room layouts are under scrutiny. Apologises [sic] but you may find this meeting very frustrating"
{SEA00011955}

455. On 24 October, Claire Williams (KCTMO) emailed Simon Lawrence (Rydon), Philip Booth (Artelia) and me about the issues surrounding window sizes. She included a request for me which stated *"Would it be possible for Bruce URGENTLY to write a paragraph explaining how this came about? I would want this to go through myself so I can be clear what is forwarded and that we are consistent; as this will determine the way forward"* {SEA00012012}.
456. Neil Crawford (Studio E) subsequently drafted a proposed response to the query from Claire Williams (KCTMO) which he sent to Simon Lawrence (Rydon) for approval, copied into the Grenfell_List address which stated: *"As various people have changed on the planning and client teams there is clearly inconsistency in*

terms of project continuity and historical understanding. The current configuration was developed collectively over a process of time to arrive at the current approved scheme. Aside from drawings and agreed presented material the stage D report makes reference to enlarged windows to take account of the effective reduced glazing area brought about by modern window frame design. This is also tied in intrinsically to the overall window opening and ventilation strategy. Any revision to the agreed setting out would have to be reviewed accordingly to make sure that these aspects were adequately addressed" {SEA00012019}.

457. This text was subsequently sent by Neil Crawford (Studio E) in an email to Claire Williams (KCTMO) the same day. However, she was not satisfied with the response and stated it was not something she could forward to Planning. She asked Simon to *"take the lead on this and communicate with Amy Peck, as you need to be managing the design and programme?"* {SEA00012030}.
458. Simon Lawrence (Rydon) subsequently sent a more detailed email concerning the changes that KCTMO had made in relation to reducing the proposed width of the windows and emphasising that the disruption to residents in the occupied flats caused by significantly changing the window sizes, outweighed the potential benefits that would be gained by increasing the window size.
459. Neil Crawford (Studio E) subsequently took this issue forward and emailed Amy Peck (IBI) on 27 October 2014, copying in Simon Lawrence (Rydon) and me with elevations and his thoughts on the revised window openings which had been simplified and reduced to fit the current window apertures {SEA00012035}. Neil also sent a similar email with the drawings to Matt Smith (Max Fordham) {SEA00012037}.
460. The discussions about window sizes went on for some time, and Neil Crawford (Studio E) coordinated and led on the Studio E response to this issue.

110 November and December 2014

461. On 4 November 2014, Simon Lawrence (Rydon) sent a summary of the position in relation to the changes with the windows to Claire Williams (KCTMO), and cc'd Artelia, Max Fordham, Neil Crawford (Studio E) and me. IBI had confirmed that a non-material amendment was required for the new window designs and that Studio E had looked at various configurations that could be used in various positions without the need to enlarge the structural openings. In summary he highlighted that *"the biggest decision that is required in order for us to progress is around fully opening windows and residents safety"* {SEA00012080}.
462. Claire Williams (KCTMO) continued to make changes regarding the windows. On 5 November 2014, Simon Lawrence (Rydon) emailed Neil Crawford (Studio E), copying Simon O'Connor (Rydon) and me and stated *"She is still making a big issue that she hasn't got all of the up to date drawings issued during the tender stage. I've been trying to politely suggest that issue lies with her rather than with us but it seems to be falling on deaf ears. I've also put together a change tracker document which I plan to issue tomorrow which will hopefully capture the changes and affect of the changes she is requesting so its clear for everyone what is being asked"* {SEA00012099}.
463. On and around 7 to 12 November 2014, there was an ongoing conversation with Rydon, KCTMO, Artelia and Max Fordham about the potential options for windows {SEA00012137}. Matt Smith of Max Fordham then emailed me, copied to Neil Crawford (Studio E) separately proposing a pivot window from Triton although he noted its cost may be prohibitively expensive {SEA00012137}.
464. On 19 November 2014, Simon Lawrence (Rydon) emailed Neil Crawford (Studio E) and me to confirm that KCTMO had made a decision on the windows and they were to fit within the existing openings as per our sketch 1279 SKI12-Rev01. The large windows were to be tilt and turn with the smaller windows to be side hung as before. He also noted the *"height of the head and the cill angles are acceptable and we can leave the existing outer frame in and over clad, as*

shown in sketch SK112". He asked that Studio E amend the drawings to reflect this and send to Amy Peck (IBI) so she could draft the non-material amendment {SEA00012176}.

465. During late November 2014, Neil Crawford (Studio E) sent a number of emails regarding fire strategy to Exova and the Project team which I was copied into. He was seeking advice from Exova on the likely approach of Building Control and obtained its views on fire strategy as set out by Building Control from the SI Submission which had been sent to Neil on 18 November 2014. Neil went on to share Exova's comments on the points made by Building Control with John Hoban and Paul Hanson (both Building Control) on 21 November 2014 {SEA00012200}.

466. On 16 December 2014, I emailed Claire Williams (KCTMO) and copied in Neil Crawford (Studio E) and Simon Lawrence (Rydon) responding to Claire's query on the types of window to be used and in advance of a consultation with the residents on 22 January 2015. I confirmed that following our research and consultations, it was felt by KCTMO that tilt and turn windows were going to be more acceptable to residents as well as being cost effective. I also confirmed that *"After the hiatus January to April 2013 and Mark's departure the pivot option was dropped and against the more fundamental Planning issues of agreeing the appearance and viability of the project, the issue was put aside"*. I also set out the pros and cons of the using sliding, pivot and reversible windows {SEA00012332}.

467. On the same day, I had an email exchange with Simon Lawrence (Rydon) about payment of our October 2014 invoice. When responding, I confirmed I had been looking through my emails to look back on the issue of window sizes. I stated *"I found the attached tender clarification email which was presumably circulated to bidders. Claire was obviously not in the room listening when I explained our intentions. I'm pretty sure I mentioned the need to cut the panels back to fit the larger windows. I can remember repeating the story of needing to offset the loss of daylight by widening the windows a number times, to Planners, sub-contractors, and probably the client"* {SEA00012346}.

2015

468. From this period onwards, while I continued as the Project lead, my day to day involvement was more limited and I would generally only study incoming drawings if Neil Crawford (Studio E) brought them to my attention. There were, however, some aspects that I recall from the email correspondence that I had an involvement with.

I11 Drawings from Harleys

469. In the early part of 2015, both Neil Crawford (Studio E) and I were copied into various emails that Kevin Lamb (Harley) sent to Rydon and Studio E, which attached various drawings. These included:

469.1 23 January 2015 – *"Revised typical windows showing a reduced quantity of trickle vents as agreed with Neil 14.01.15" {SEA00012567}*. Kevin also queried whether there was an update on restrictor requirements and confirmed they would work on keyed handles to prevent unauthorised opening. He also confirmed the panels to the kitchen windows would be supplied in one piece for the M & E contractors to cut and fit extract vents as necessary;

469.2 23 January 2015 – Specification for the upper 20 floors *"for clarity / approval" {SEA00012573}*. This is the first issue of Harley's specification for the works;

469.3 11 February 2015 – *"... drawings that were tabled on Monday, with a further updated drg 325 to suit site findings and an assumed set out for internal finishes being 50mm inside grid line as advised by Jason. Please forward comments once checked" {SEA00012667}*;

469.4 17 February 2015 – Kevin forwarded to Rydon copies of the window modifications on which Neil Crawford (Studio E) had commented and asked whether they could proceed {SEA00012758}. I was also copied into the response Simon Lawrence (Rydon) sent to Kevin confirming that Neil had completed his comments on the window modification and so they could proceed {SEA00012761};

469.5 3 March 2015 – Kevin sent Rydon *"... drawings now showing the fire breaks, both horizontal and vertical. We assume the requirement of 90min integrity & 30min insulation is sufficient, if not, please advise" {SEA00012850}*;

469.6 3 March 2015 – Kevin sent Rydon *"... drawings for W+I level, all raised to construction status, except 100, 206 and 328"*. He also made a request

for comments on 206 as soon as possible stating "*as we can manufacture these accordingly*" {SEA00012868};

469.7 24 March 2015 – Kevin sent Rydon "... *final drawings for the W+I windows, all construction based upon both comments and site survey. This is what is in manufacture*" {SEA00012981};

469.8 25 March 2015 - Kevin emailed Rydon stating "*Further to our meeting yesterday, please find attached details for the firebreaks, all now upgraded to 120min*" {SEA00013001}. I was also copied into Neil Crawford's (Studio E) response to this email sent on 27 March 2015 which attached his comments {SEA00013026}; and

469.9 20 April 2015 - Kevin emailed Rydon stating "...*walkway level windows for comment / approval. The window sizes are all final based upon site survey, however we need you to consider handing of vents and quantity of trickle vents. We have replicated the vents as the walkway +1 level, for balance, however this level has very different usage so please confirm all ok. We also notice that there is a kitchen to West adjacent grid C. Is there a need for a fixed panel for an extractor? We have further survey to carry out to finalise the cladding zones, so at this stage we only require your window approvals*" {SEA00013101}.

112 Other issues I was involved with in 2015

470. In addition to the drawings from Harley and the sending of invoices outlined above, there were some other issues that I was copied into / involved in during the course of 2015 as follows:

470.1 On 6 March 2015, Neil Crawford (Studio E) copied me into an email that he sent to Kevin Lamb (Harley) and Simon Lawrence (Rydon) stating "*As per telephone conversation I have asked the question of Exova on the fire break but not had anything back. To me the fire breaks would have to follow the ratings of the party walls which are shown on the fire plan attached. You can see some of the low level apartments are separated by 120mins and others by 60mins*" {SEA00012906}.

- 470.2 On 6 March 2015, I emailed Simon Lawrence (Rydon) and Neil Crawford (Studio E) outlining a conversation that I had had with a representative of Fill Metalbau at their stand at Ecobuild, a large annual trade fair held at the ExCel, about an overcladding project where it had been called into to replace every panel and make good due to poor workmanship by the original contractor. This included *"bin-bag type (which I understood to be polythene) or non-existent membranes and seals, no wind barrier membrane (breather membrane behind cladding to keep the insulation dry), no fire stops"*. I also stated *"I'm sure Paul Hanson is going to be very particular about fire stops at Grenfell Tower"* {SEA00012915}.
- 470.3 On 23 March 2015, I forwarded an email to Neil Crawford (Studio E) that I had received from Artelia headed *"Grenfell H&S file"* which attached an outline of what Artelia considered to be outstanding from each of the contractors and KCTMO {SEA00012971}. The email had been sent to me earlier that day, but Neil had not been copied in so I forwarded it to him for his information.
- 470.4 On 26 March 2015 I was copied into an email from Matt Smith (Max Fordham) who was responding to a request from Artelia for Max Fordham to provide M&E information when he stated *"As Rydon have taken on the design responsibility for Grenfell Tower we would expect them / JS Wright to provide the M + E information"* {SEA00013014}.
- 470.5 On 3 August 2015, I attended site and took 16 photographs, seven of which were of KALC or were of the KALC with the Tower in the background. The Studio E calendar records that Andrzej Kuszell (Studio E) and I were there to meet a contact interested in setting up a new school. Andrzej had offered to meet with them and show them KALC as it was a new build school and had recently achieved partial handover. Andrzej is in two of the photos. I brought my camera with me and took the opportunity to record the progress on the cladding on the tower.

470.6 On 28 October 2015. I took part in an internal technical review of Studio E's work on the Project; Neil Crawford (Studio E) issued the internal report the next day, using the office template document, which we would have both used as a checklist to discuss and agree whether there were any areas that needed to be investigated further. I note it contained a comment regarding design standards and that it was "*designed to current housing, approved document building regulations and British standards*" {SEA00013508}. Please see paragraph 131.

114 2016

471. During 2016, in my role as Project lead, my involvement in the Project included the following issues:

471.1 collateral warranty and deed of appointment for Studio E– both Andrzej Kuszell (Studio E) and I were involved in negotiations with Rydon regarding these points;

471.2 A potential issue with landscaping that was raised by Neil Crawford (Studio E); and

471.3 I also attended site and took some further photographs on 5 March 2016.

115 Negotiations with Rydon re: Studio E deed of appointment and collateral warranty

472. On 20 January 2016 Neil Crawford (Studio E) forwarded Andrzej Kuszell (Studio E) and me the original collateral warranty and appointment documents from Rydon {SEA00013878}.
473. On 22 January 2016, following a telephone call with a Daniel Banks (Rydon), a trainee solicitor, he sent an email confirming that they were unable to accept a cap on liability as I had proposed. He also confirmed that the collateral warranty for the Tower was "*time critical*" and that Rydon may not be able to achieve Practical Completion in the absence of signed collateral warranties. He stated "*This may result in damages being levied against Rydon, which Rydon would have no option but to pass onto Studio E*" {SEA00013908}. I do not have a specific recollection of the telephone call. In my experience, it is common for contractors to put pressure on the design team to accept onerous terms.
474. I responded to Daniel Banks (Rydon) the same day and suggested that the director at Rydon spoke to Andrzej Kuszell (Studio E) to resolve the issue. I also highlighted that an uncapped liability presented a risk to SEAL {SEA00013911}. It would be normal practice for there to be a cap on liability and, as I stated in the email, we have never accepted an unlimited cap on liability in a collateral warranty.
475. Stephen Blake (Rydon) subsequently emailed on 25 January 2014 stating that Studio E was the only business with design responsibility that were not prepared to sign the collateral warranty. He suggested we increase our professional indemnity insurance coverage and stated that Harley had accepted £10M. In response, Andrzej Kuszell (Studio E) emailed Stephen back the following day and asked whether that meant that it would agree to cap Studio E's liability to £10M {SEA00013947}.
476. Daniel Banks (Rydon) emailed everyone back the following day confirming that a change in wording at clause 1.4 we had proposed was acceptable.

116 Landscaping works

477. On 1 March 2016, Neil Crawford (Studio E) emailed Andrzej Kuszell (Studio E) and me stating that he was concerned that SEAL was going to end up having to deal with some landscaping works with limited information from the consultant who had been responsible for this aspect, Matthew Wigan (Matthew Wigan Associates). Neil had contacted Matthew but he was reluctant to assist as he had unpaid fees. Neil confirmed he was due to meet Stephen Blake (Rydon) on Thursday but since SEAL had not been paid for several months he was reluctant to get drawn into more time consuming work. He noted that *"The major issue is discharge of planning (condition 13A?) for which I will have to approach Steve McCool"* {SEA00014106}.
478. On 4 March 2016, Neil Crawford (Studio E) sent a further email following his meeting with Stephen Blake (Rydon) and confirmed *"Clearly they are struggling from lack of continuity and process / decision recording over the project which is being compounded by a final rush to complete the building – its due to be completed next Friday. They are almost there. They may choose to employ our services on the landscape if they feel it is necessary, however they are clearly trying to cut corners / scope and I suspect (and to some extent hope) they do as Bouyges and just complete the process themselves with the information they have."* {SEA00014115}
479. On 23 March 2016, David Hughes (Rydon) emailed Neil Crawford (Studio E) and copied in others from Rydon, Andrzej Kuszell (Studio E) and me and confirmed that Stephen Blake (Rydon) had approved SEAL's fee proposal dated 22 March 2016 for £2.5k for the condition 13 – External works. Neil took this aspect forward.

117 Photographs of the site on 5 March 2016

480. In 2016 the Project was coming to a close. I note from the correspondence that I received an email from Claire Williams (KCTMO) on 25 January 2016 with a photograph of the Tower confirming "*the cladding is mostly done bar the lower floors*" {SEA00013921}.

481. I attended site on 5 March 2016 and took some photographs {SEA00000348} {SEA00000349} {SEA00000350} {SEA00000351} {SEA00000352} {SEA00000353} {SEA00000354} {SEA00000355} {SEA00000356} {SEA00000357} {SEA00000358} {SEA00000359} {SEA00000360} {SEA00000361} {SEA00000362} {SEA00000363} {SEA00000364} {SEA00000365} {SEA00000366} {SEA00000367} {SEA00000371}. By this time the Project was coming to a close. The photographs show some distant and some closer views of the Tower. The mast climbers have been removed and the cladding and the windows to the Upper Floors is largely complete. Looking at the photograph when preparing this statement, I note that several panels are missing and the insulation, rails and cavity barriers are clearly visible. The green entrance canopy is unfinished and the temporary resident's entrance at Walkway level is still in use.

Statement of truth

I believe that the facts stated in this witness statement are true. I am willing for this witness statement to form part of the evidence before the Inquiry and to be published on the Inquiry's website.

Signature

A handwritten signature in blue ink, appearing to read 'BASounes', written over a dotted line.

Name

Bruce Alexander Sounes

Date

9 NOVEMBER 2018.

Bruce Alexander Sounes