

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

THE GRENFELL TOWER INQUIRY

EXHIBIT BS1

This is the Exhibit BS1 to the FIRST WITNESS STATEMENT OF BRUCE SOUNES ON BEHALF OF STUDIO E ARCHITECTS LIMITED dated 9 November 2018.

Bruce's early experience at Studio E Architects involved a range of educational and sports and leisure projects. He initially worked as senior architect on the American Community School Sports Centre and then on Studio E Architects' first Academy in Southwark for the City of London. Made associate in 2005 Bruce was involved in a broader portfolio of projects that included two sports centres in Watford and Inverclyde Schools in Scotland.

In 2012 Bruce was successful in securing the new Heston Leisure Centre project in Hounslow. This was a complex hybrid application which included applications for three residential sites in addition to the new build leisure centre, new 3G five-a-side pitches and extensive park improvements. Bruce led a full team of sub-consultants and followed through as Employer's Agent for the build phase.

Bruce was a key member of the team which secured the Skinners Kent Academy in Tunbridge Wells with Willmott Dixon. He went on to lead on the design and submission for the John Wallis Academy expansion project. Bruce was part of the team which secured our Kensington Aldridge Academy and he took on the refurbishment and alterations to a sister project, the Grenfell Tower refurbishment. His more recent projects have included a series of special projects for the London Borough of Hillingdon.

Studio E Architects
(2000 – present)

KSR Architects
(1998 – 2000)

Arcotek
(1995-1998)

EXPERIENCE

Harefield Young People's Centre, Hillingdon
Value: £2m
RIBA Stages 1-4 - 2017

Battle of Britain Bunker Education and Visitor Centre, Uxbridge
Value: £5m
Completion 2017

New Heston Leisure Centre and Residential Enabling Development
Value: 12 million
Completion: 2015

Grenfell Tower Refurbishment, Kensington
Value: £8.5m
Completion 2015

Kensington Aldridge Academy – new Academy
Value: £27 million
Completion: 2014

John Wallis Academy Kent – new hall and teaching blocks
Value: £8 million
Completion: 2014

British International School, Jeddah
Value: 8 million
Feasibility Study 2013

Abu Dhabi Educational Council
Model Primary Schools
Value: Confidential
Completion 2013

Skinners' Kent Academy
Value: £20 million
Completion: 2012

Ark Academy, Wembley
Value: £26.4 million
Completion: 2010

GEMS Jebel Ali International Schools, Dubai
Value: £50 million
Design Stage C 2009

GEMS International Schools
Value: Confidential
Benchmark Study 2009

Inverclyde Academy, Greenock
Value: £29 million
Completion: 2008

Newark Primary School, Port Glasgow
Value: £9.7 million
Completion: 2008

Watford Central Leisure Centre
Value: £10 million
Completion: 2008

Watford Woodside Leisure Centre
Value: £10.7 million
Completion: 2008

AS ARCHITECT

Burgess Park Community Sports Centre
Value: £1.1 million
Completion: 2006

City of London Academy (Southwark)
Value £23.5 million
Completion: 2005

New Sports Centre
American Community School, Cobham
Value: £9 million
Completion: 2004

Studio E Architects Ltd
90A Tooley Street
London SE1 2TH

www.studioe.co.uk

DATED 3 February ⁶/₂₀₁₆

RYDON MAINTENANCE LIMITED

(Contractor)

and

STUDIO E ARCHITECTS LIMITED

(Consultant)

DEED OF APPOINTMENT
Relating to Services at the Development
(as defined in this Deed)

Grenfell Road, London, W11 1TQ

Agreed version Constr/Deed of Appointment
Updated : 01/06/15 DB

THIS DEED is made on the 3 day of February 2016

BETWEEN

RYDON MAINTENANCE LIMITED (Company registration Number 01651097) whose registered office is at Rydon House Station Road Forest Row East Sussex RH18 5DW ("the Contractor") and

STUDIO E ARCHITECTS LIMITED (Company Registration Number 02951234) whose registered office is at 310 Linton House, 164/180 Union Street, London, SE1 0LH ("the Consultant").

WHEREAS

The Consultant carries on a business as a firm of architects and the Contractor wishes to appoint the Consultant to provide services in that capacity in connection with the Development

NOW IT IS AGREED as follows:-

1. Definitions

In this Deed the following words and expressions shall where the context so admits be deemed to have the following meaning:-

- | | |
|-----------------------|---|
| "Building Contract" | means the building contract in the form of JCT Design & Build (2011) with amendments thereto and the documents and/or drawings forming part of that building contract including without limitation any Employer's Requirements and Contract Drawings entered into between the Employer and the Contractor dated 30 October 2014. |
| "Collateral Warranty" | means collateral warranties in the forms of the draft annexed and marked "C" (or such other similar forms as the Funder may reasonably require). |
| "Copyright Documents" | means all drawings reports specification bills of quantities calculations and other similar documents provided by the Consultant in connection with the Site. |
| "Development" | means the design, construction, refurbishment, commissioning, completion and defect rectification of enhancements and developments carried out at Grenfell Tower, Grenfell Road, London W11 1TQ together with all supporting infrastructure, access, car parking, landscaping and amenities at the Site as more particularly described and defined in the Building Contract |
| "Employer" | Means The Royal Borough of Kensington and Chelsea Tenant Management Organisation Limited |
| "Fees" | means the sum of £180,625.00 plus the Value Added Tax but including disbursements, payment of which is to be made in the stages set out in Annex B in accordance with clause 3.1. |
| "Funder" | means a bank or similar organisation providing finance for the development to the Employer |

"Insurance Amount"	means the amount of not less than five million pounds (£5,000,000) for any one claim or series of claims arising from the same original cause source or event (but limited to £1,000,000.00 in the aggregate in respect of asbestos).
"Services"	means the services listed in the Schedule of Services annexed hereto and marked "A".
"Site"	means the site at Grenfell Tower, Grenfell Road, London, W11 1TQ

2. SERVICES

- 2.1 The Consultant has and will continue to perform for the Contractor the Services in respect of the Development
- 2.2 Without prejudice to the generality of the foregoing the Consultant acknowledges that it is responsible for all and any design and other work undertaken by the Consultant its employees servants sub-contractors or agents in relation to the Site before the date of this Deed
- 2.3 The Consultant warrants it has exercised and will continue to exercise reasonable skill care and diligence in the discharge of the Services to the standard reasonably to be expected of a competent professional experienced in the provision of professional services for works similar to the size scope complexity quality and nature of the Development.
- 2.4 No advice, approval, comment or want of the same by the Contractor or any other person on any matter connected with or arising from the designs of the Consultant shall release or diminish the Consultant's responsibilities or obligations under this Deed.

3. FEES

- 3.1 In consideration for the Services the Contractor will pay the Consultant the Fees and such payment shall be made as per the Fee Schedule at Annex B to this Deed.
- 3.2 The Consultant shall within 30 days after completion of each relevant stage submit to the Contractor an invoice in respect of the Fees relevant to that stage ("the Interim Application"). The Interim Application must state the amount the Consultant considers to be due to them and the basis on which the sums have been calculated.
- 3.3 The date upon which the Contractor receives such the Consultant's Interim Application shall be the "due date" for payment.
- 3.4 The final date for payment of an Interim Application shall be thirty five (35) days after its due date.
- 3.5 Not later than twenty one (21) days after the due date the Contractor shall give a notice in writing to the Consultant ("a Payment Notice") in accordance with clause 3.6 and subject to any Pay Less Notice given by the Contractor in clause 3.7, the amount of the interim payment to be made by the Contractor on the final date for payment shall be the sum stated in the Payment Notice.
- 3.6 The Payment Notice shall specify the amount the Contractor considers to be due to the Consultant and the basis on which the sums have been calculated.
- 3.7 If a Payment Notice is not given in accordance with clause 3.5, the amount of interim payment to be made by the Contractor shall, subject to any pay Less Notice under clause 3.8, be the sum stated as due in the Interim Application.
- 3.8 If the Contractor intends to pay less than the sum stated as due from him in the Interim Application or the Payment Notice, as the case may be, he shall not later than two (2) days before the final date for payment give the Consultant written notice of that intention to withhold ("a Pay Less Notice").
- 3.9 The Pay Less Notice shall specify the amount the Contractor considers to be due to the Consultant and the basis on which the sums have been calculated.
- 3.10 Where a Pay Less Notice is given, the payment to be made on or before the final date

for payment shall not be less than any amount stated in the Pay Less Notice.

- 3.11 The payment of any amount by the Contractor to the Consultant shall not prejudice or adversely affect the right of the Contractor to contend that the Services have not been properly valued and that any amount has been improperly paid or withheld. In making any stage payment the Contractor shall be entitled to reconsider and if necessary adjust the assessments made by him in arriving at any previous stage payment.
- 3.12 The payment of any stage payment by the Contractor shall not constitute or imply or be evidence of the Contractor's approval or acceptance of any design work forming part of the Services or shall in any way lessen or otherwise affect the Consultant's responsibilities and liabilities hereunder.
- 3.13 If the Contractor fails properly to pay the amount or any part thereof due to the Consultant by the final date for payment of each stage payment the Contractor shall pay to the Consultant in addition to the amount not properly paid simple interest thereon for the period until such payment is made. Payment of such simple interest shall be treated as a debt due to the Consultant by the Contractor. The rate of interest payment shall be three per cent (3%) over the Base Rate of the Bank of England which is current at the date the payment by the Contractor became overdue. Any payment of simple interest under this clause 3.13 shall not in any circumstances be construed as a waiver by the Consultant of his right to proper payment of the principal amounts due from the Contractor to the Consultant in accordance with and within the time stated in this Deed.

4. INSURANCE

- 4.1 The Consultant shall maintain professional indemnity insurance in an amount of not less than the Insurance Amount from the date when the Services commenced or, if earlier, the date of this Deed until twelve years from the date of Practical Completion of the Works as defined in the Building Contract PROVIDED ALWAYS that such insurance is available in the market at commercially reasonable rates and terms.
- 4.2 The Consultant shall immediately inform the Contractor if such insurance ceases to be available at commercially reasonable rates and terms. As and when it is reasonably requested to do so by the Contractor the Consultant shall produce for inspection documentary evidence that its professional indemnity insurance is being maintained in accordance with this clause but not in any way which would breach the terms of the policy then in force.

5. DELETERIOUS MATERIALS

The Consultant warrants to the Contractor that in carrying out the Services it has not and that it will not specify for use or knowingly permit to be used in relation to the design of the Development any materials or substances which the Consultant knows or exercising reasonable skill and care ought to know at the time of specification (save where the Consultant has an ongoing involvement in the Development including without limitation supervision or inspection of the Development in which case at the time of use) are not in accordance with British or European Standards and Codes of Practice (or their equivalent) or which are generally known within the Consultant's profession to be deleterious to health or safety or to the durability or integrity of the Development

6. COLLATERAL WARRANTIES

The Consultant has executed or will execute a Collateral Warranty in favour of each of the Borough, the Employer, the Funder and such other parties as the Employer or Contractor may from time to time require (up to a maximum of two) and deliver the same to the Contractor within 7 days of request.

7. COPYRIGHT LICENCE

- 7.1 The copyright in all Copyright Documents shall remain vested in the Consultant but

the Contractor and its appointee shall have an irrevocable royalty free non exclusive licence to copy and use such Copyright Documents and to reproduce the designs contained in them for any purpose related to the Development including but without limitation the construction completion maintenance letting promotion advertisement reinstatement and repair of the Development.

- 7.2 The Contractor and its appointee shall have a licence to copy and use such Copyright Documents for the extension of the Development but such use shall not include a licence to reproduce the designs contained in them for any extension of the Development. The Consultant shall not be liable for any such use, misuse or variation whatsoever by the Contractor or its appointee of any Copyright Documents for any purpose other than that for which the same were prepared and provided by the Consultant. Such licence shall carry the right to grant sub-licences and shall be transferable to third parties.

8. CDM REGULATIONS

- 8.1 The Consultant is aware of the Construction (Design and Management) Regulations 2015 ("the CDM Regulations") and acknowledges that in relation to the Services it is a "designer" as defined in the CDM Regulations and will use reasonable skill care and diligence to comply with its obligations and duties as a designer as defined and specified within the CDM Regulations

9. TERMINATION AND SUSPENSION

- 9.1 The Contractor may at any time by written notice immediately terminate the appointment of the Consultant under this Deed.
- 9.2 Without prejudice to any rights or remedies which either party may have, on termination of the appointment under this Deed the Consultant shall be entitled to remuneration for all work completed at that time with a fair and reasonable apportionment being made in respect of partially completed work stages. The Consultant shall not be able to recover any disruption charge, loss of profit, loss of business opportunities, loss of contracts or any other losses and/or expenses arising out of or in consequence of such termination.

10. ASSIGNMENT

- 10.1 This appointment is personal to the Consultant and the Consultant shall not assign charge or transfer any right or obligation under this Deed to any other person. No delegation subcontracting or other transfer of the Services by the Consultant to any other person shall be permitted other than the subcontracting of specifically identified elements of the Services to specialist sub-consultants with the Contractor's prior express written consent.
- 10.2 The Contractor may without the consent of the Consultant assign all or any of its rights under this Deed up to a maximum of two occasions only.

11. THIRD PARTY RIGHTS

Subject to the rights of any permitted successor or permitted assignee of this Deed, this Deed does not create any right enforceable by any person not a party to it whether under the Contracts (Rights of Third Parties) Act 1999 or otherwise.

12. PARTNERSHIP

- 12.1 The obligations of the Consultant are the joint and several obligations of the partners of the Consultant all of whom have executed this Deed.
- 12.2 The covenants warranties and undertakings on the part of the Consultant shall be deemed to have been made by and on behalf of all the existing and future partners of the Consultant

13. CONFIDENTIALITY

Save as may be necessary for the proper performance of the Services or as otherwise

compelled by law the Consultant shall not during the performance of the Services or following the termination (for whatever cause) of this Deed disclose to any third party or make use of any information of any kind whatsoever relating to the Development. Nothing in this clause shall prevent the disclosure or use of any information to obtain insurance, professional or legal advice or during the course of any legal proceedings or where disclosure is required in accordance with any law or regulation.

14. ADJUDICATION

- 14.1 If any dispute shall arise between the Consultant and the Contractor at any time then without prejudice to the rights of the parties under the remainder of this clause 14 the party who believes that a dispute has arisen shall give written notice to the other and the parties shall endeavour to resolve that dispute by negotiations for a period of not less than twenty eight days thereafter.
- 14.2 Either party may give written notice to the other of his intention to refer any dispute to adjudication in accordance with the provisions of clauses 14.3 to 14.10 accompanied by a written statement setting out full details of each matter in dispute and copies of all relevant supporting documents and shall at the same time deliver further copies of such notice statement and documents and a copy of this Deed to the Adjudicator.
- 14.3 The Adjudicator in all and any disputes referred to in accordance with clause 14.2 shall be nominated upon written request from either party by the President for the time being of the Chartered Institute of Arbitrators ("the Adjudicator") and upon making his decision the Adjudicator shall make an award as to which party shall bear the costs of the Adjudication.
- 14.4 Within seven days from the date of service of a notice in accordance with clause 14.2 the parties shall appoint the Adjudicator (the date of such appointment being the date of referral of the dispute) and thereafter shall co-operate with the Adjudicator in his ascertaining of the facts comprising the dispute.
- 14.5 The Adjudicator shall reach a decision on the dispute within twenty eight days following the date of referral of the dispute pursuant to clause 14.4 or within such longer period as the Consultant and the Contractor may agree at any time after such dispute has been so referred and the Adjudicator shall notify the Consultant and the Contractor of such decision in writing.
- 14.6 In addition to any extension of the period of twenty eight days referred to in clause 14.5 by agreement between the parties the Adjudicator may extend the said period of twenty eight days by up to fourteen days with the consent of the party who served notice under clause 14.2.
- 14.7 The Adjudicator shall act impartially and shall be permitted to take the initiative in ascertaining the facts and the law relevant to the dispute but may not consider statements or submissions which have not been made available to all parties.
- 14.8 The Adjudicator should have full power to open up review and revise any decision opinion direction certificate valuation requirement or notice of the activities made under or pursuant to this Appointment.
- 14.9 The Adjudicator may award simple or compound interest for such periods and at such rates as he considers appropriate and subject to clause 14.
- 14.10 The Adjudicator may correct his or her decision so as to remove a clerical or typographical error arising by accident or omission within five (5) days of communicating his or her decision to the Consultant and the Contractor.
- 14.11 The Adjudicator's decision is binding unless the dispute or difference is finally determined by litigation.

15. APPLICABLE LAW

This Deed shall be governed by English Law and the English Courts shall have exclusive jurisdiction with regard to all matters arising therefrom.

16. LIMITATION PERIOD

It is acknowledged that whatever the manner in which the parties have executed this Deed the

period of limitation applicable to any claim or claims arising out of or in connection with this Deed shall be twelve (12) years from the date of Practical Completion under the Building Contract.

17. ENTIRE AGREEMENT

This Deed supersedes any previous appointment, agreement or arrangements between the Consultant and the Contractor in respect of the Services (whether oral or written) and represents the entire understanding between the parties in relation to the Services.

IN WITNESS whereof the parties hereto have duly executed this document as a Deed the day and year first before written

Executed as a Deed by
RYDON MAINTENANCE LIMITED
by two of its directors
or Director/Secretary

)
)
)
)

.....
Director

.....
Director/Secretary

Executed as a Deed by
STUDIO E ARCHITECTS LIMITED
by two of its directors
or Director/Secretary

)
)
)
)

A.
Director

.....
Director/Secretary

Annex A
Schedule of Services

SCHEDULE OF ARCHITECTURAL SERVICES

The following requirements shall be suitable for and in accordance with all relevant Building Regulations and Local Authority approval and working drawings:-

"Contractor" shall mean Rydon Maintenance Limited.

"Client" shall mean The Royal Borough of Kensington and Chelsea Tenant Management Organisation (KCTMO).

"The Site" shall mean Grenfell Tower, London, W11 1TQ

Planning

1. Liaise with the Local Authority Planning Department in order to produce a site layout that satisfies the Local Authority and KCTMO in order to achieve Full Planning Approval.
2. Attend Planning meetings / design co-ordination meetings and consultations as required in order to obtain Planning.
3. Make submission for and obtain full Planning Approval, for and on behalf of KCTMO / The Contractor.

Generally

4. Seek to ensure that all aspect of the architectural designs comply with the Employers Requirement documents prepared by Artelia UK
5. Advise the Contractor where, in the Architects opinion, there are shortfalls within the Employers Requirements and advise of assumptions to be made.
6. Resolve outstanding planning conditions.
7. Responsibility for co-ordinating Building Regulation approval for and on behalf of the Contractor.
8. Seek to ensure that all designs comply with the relevant Statutory Requirements, including Scheme Development Standards.
9. In accordance with the CDM Regulations, undertake a Design Risk Assessment relating to the works that are part of the Architect's brief. Provide as-built drawings for the CDM file.
10. Liaise with and co-ordinate as required to ensure compatibility with Structural Engineers, Civil Engineering, Mechanical and Electrical Engineering and Services Information and generally to ensure the overall viability of the project.
11. Co-operate with the Contractors Buying Department in the consideration and selection of alternative materials.
12. With other Consultants, where appointed, develop the scheme designs, agree with the Contractor the type of construction and quality selection of materials.

13. Co-ordinate any design work done by consultants, specialist contractors, subcontractors and suppliers.
14. Liaise with N.H.B.C / Zurich / HAPM as necessary.
15. Liaise with the various Statutory Bodies as required inter alia, Fire Authorities, Environmental Authorities.
16. Liaise with site and respond to construction queries.
17. Attend design co-ordination meetings as reasonably required and liaise with the design team as appropriate, both during the design process and construction period.
18. Attend site as reasonably required during the construction process.
19. Provide 'as-built' drawings when required.
20. Provide conveyancing drawings as necessary.
21. Provide a Collateral Warranty for all designs as detailed in the Employers Requirements.
22. Liaise with the Local Crime Prevention Officer and obtain "Secured by Design" certification, where required.
23. Advise whether, in the Architects opinion, Party Wall Awards will be required, and adapt the design accordingly.
24. Provide information to discuss proposals with and incorporate input of other consultants into scheme design and detailed proposals.
25. Advise The Contractor if any design development is likely to affect materially the cost of the Works compared with the design contained in the Contractor's Proposals.
26. Provide The Contractor with general arrangement drawings, interface details, performance specifications and other technical information reasonably necessary to seek quotations from Subcontractors and Suppliers.
27. Examine Subcontractors' and Suppliers' drawings and details, with particular reference to tolerances and dimensional co-ordination, finish, durability, appearance and performance criteria and report to The Contractor.
28. Prepare additional production information associated with the Architectural Designs.
29. Prepare and submit plans for proposed building works for the approval of landlords, funders, freeholders, tenants or others as requested by the Contractor.

Superstructures

30. Design and provide general arrangement drawings as follows;
 - a. Fully dimensioned plans for each floor / unit
 - b. Sections as required for each floor.
 - c. Sections as required for each unit.
 - d. Site layout plan.

- e. Fully dimensioned plans for each floor/unit.
 - f. Sections as required for each floor.
 - g. Sections as required for each unit.
 - h. Site Layout plan.
 - i. Roof plans and associated details, i.e. pitches, overhangs.
 - j. Dimensioned block plans.
 - k. Elevations for each unit.
 - l. Site elevations showing the relationship of the proposed buildings adjoining the site, indicating positions and heights of windows, eaves and ridges relative to the adjoining buildings / sites.
 - m. Furniture layouts indicating positions of radiators, ceiling lights, switches and sockets.
31. Provide supplementary notes to drawings and provide further drawings to show sufficient information to construct the project to completion consisting (but not limited to) the following:-
- a. External wall / internal wall and partition construction details (1:20/1:10/1:5).
 - b. External wall / ground floor junction details (1:20/1:10/1:5).
 - c. Window jamb / head / cill details (1:20/1:10/1:15).
 - d. Door schedule
 - e. Window schedule
 - f. Ironmongery schedule in conjunction with contractors ironmongery supplier.
 - g. Finishes / decorations schedule.
 - h. Kitchen plans and elevations (1:20).
 - i. Bathroom plans and elevations (1:20).
 - j. Stair details including half landings.
 - k. Duct and fire stopping details.
 - l. Rainwater pipe locations.
 - m. Soil stack locations.
 - n. Service duct locations both horizontally and vertically (ie. kitchen extracts).
 - o. Roof and eaves details.
 - p. Flat roof construction details.
 - q. Sanitaryware schedule.
 - r. Service routes and entry points.
 - s. Sloping abutment / horizontal abutment details.
 - t. Clear detailing of DPC's DPM's at junctions/change of levels and at other non-standard situations.
32. Liaise with The Contractor / Client and design all internal signage to comply with the relevant guidelines.
33. Liaise with Engineer and indicate movement joint locations on general arrangement drawings. Construction of movement joints to be detailed by the Engineer.
34. Provide dimensional advice and comment on lintel designs / schedules.
35. Provide dimensional advice and comment of precast floor manufacturers layouts.
36. Provide dimensional advice and comment of precast staircase manufacturers design.
37. Liaise with the Engineer and provide general arrangement drawings of timber floors, giving details of joist layout, sizes, support trimmers, metal straps and joist hangers. Sizes of joists etc. to be designed by the engineer for incorporation on the Architects drawings.

Setting-Out

- 38. Provide external and internal setting-out of the individual blocks for inclusion on the setting-out plan, including the overall block dimensions and drainage points.
- 39. Advise the Civil Engineer of any critical setting-out dimensions.

External Works

- 40. Liaise with the Local Authority and provide a Planning Approval external works drawing to show the following hard and soft areas, (detailing of finished levels and construction details by others):-

- | | | |
|--|---|---------------|
| <ul style="list-style-type: none">1. Adoptable roads / public highways, including speed ramps, white lines, signage, street lighting and bollards2. Adoptable public footpaths.3. Adoptable parking areas.4. Adoptable crossovers.5. Private roads.6. Shared access ways.7. Communal footpaths.8. Private footpaths (front garden and rear garden).9. Private drives / parking courts.10. Private patios.11. Dustbin areas.12. Drying areas.13. Screen walls, fencing, gates, retaining walls, steps, ramps.14. Soft landscaping, including grassed areas, planted beds and any street furniture (ie. benches, pergolas, covered walkways).15. Play areas. | } | as applicable |
|--|---|---------------|

- 41. Provide detail drawings and designs for pergolas, covered walkways, car ports, refuse areas, steps, ramps, balustrading, handrails etc as necessary.
- 42. Liaise with the Local Authority and Post Office to agree postal numbering, post codes etc
- 43. Provide advice and comment of specialist planting contractors design in relation to the Architectural design.
- 44. Liaise with The Contractor / Client and the Civil Engineer in order to determine the external signage requirements. The Civil Engineer to include details of the agreed signage on the engineering layout.

Site visits = 25no. is required

Annex B
Fee Schedule

Fee Schedule

Grenfell Tower

STAGE	FEE
Stage F1	£45,156
Stage F2	£36,125
Stage K	99,344
TOTAL	£180,625

Annex C
Collateral Warranty

STUDIO E ARCHITECTS LIMITED
(Consultant)

And

THE ROYAL BOROUGH OF KENSINGTON AND
CHELSEA TENANT MANAGEMENT ORGANISATION LIMITED
(Beneficiary)

And

RYDON MAINTENANCE LIMITED
(Contractor)

CONSULTANT
DEED OF COLLATERAL WARRANTY

in respect of a project at
Grenfell Towers, London

CONSULTANT WARRANTY

Dated

Parties

STUDIO E ARCHITECTS LIMITED (Company Registration Number 02951234) whose registered office is at 310 Linton House, 164/180 Union Street, London, SE1 0LH ("the Consultant") and;

THE ROYAL BOROUGH OF KENSINGTON AND CHELSEA TENANT MANAGEMENT ORGANISATION LIMITED (Company Number 03048135) whose registered office is situate at The Network Hub, 292a Kensal Road, London, W10 5BE (the "Beneficiary") and

RYDON MAINTENANCE LIMITED (Company Number 01651097) whose registered office is situate at Rydon House, Station Road, Forest Row, East Sussex, RH18 5DW (the "Contractor")

Introduction

- A. By the Appointment, the Beneficiary employed the Consultant to perform the Services.
- B. The Contractor and the Beneficiary have entered into a building contract dated 30 October 2014 (the "Building Contract") for the design, construction, completion and defects rectification of enhancements and developments to the existing building, to increase the number of residential units on the estate and upgrade the community boxing club and nursery at the Development (the "Works") of which the Services form part.
- C. As a condition of and in consideration of the Beneficiary's agreement the Consultant has agreed to enter into this deed for the benefit of the Beneficiary.

Agreed terms

1 Interpretation and definitions

- 1.1 In this warranty the following terms have the following meanings unless inconsistent with the context:

Appointment the contract dated _____ between the Beneficiary (1) and the Consultant (2) (and any further agreement varying or supplementing it, which for the avoidance of doubt shall include the deed of novation) under which the Consultant has agreed to perform the Services;

Building Contract means the JCT Design and Build Contract (2011 edition) as amended dated 30 October 2014 entered into between the Beneficiary and the Contractor (and any further agreement(s) varying or supplementing it) for the Works;

Documents means the drawings, details and specifications of materials, goods and workmanship and other related documents prepared by or for the Consultant in relation to the design of the Works;

Group Company means any subsidiary company or holding company of the Beneficiary or another subsidiary or holding company of such company as subsidiary and holding company are defined in section 1159 Companies Act 2006;

Project means the design, construction, completion and defects rectification of enhancements and developments to the existing building, to increase the number of residential units on the estate and upgrade the community boxing club and nursery at the Property;

Property means Grenfell Road, London W11 1TQ

Services means the works, design and/or services which the Consultant has been retained to carry out under the Appointment;

Working Day means any day except Saturday Sunday and bank or other public holidays in England;

Works means the works of design, construction, completion and defects rectification to be carried out on the Property pursuant to the Building Contract.

- 1.2 The clause headings in this warranty are for convenience only and do not affect its interpretation.
- 1.3 Words importing the singular meaning include where the context so allows the plural meaning and vice versa.
- 1.4 Words of one gender include both genders and words denoting natural persons include firms and companies and all are to be construed interchangeably in that manner.
- 1.5 A reference to any statute or statutory instrument shall include a reference to any modification extension or re-enactment of it.
- 1.6 References in this warranty to numbered clauses are references to the relevant clause in this warranty.

2 Consideration

In consideration of the payment of £10.00 (ten pounds) by the Beneficiary to the Contractor (receipt of which the Contractor hereby acknowledges) the Contractor covenants to the Beneficiary as set out in this warranty.

3 Duty of care

The Consultant warrants and undertakes to the Beneficiary that:

- 3.1 it has performed and shall continue to perform all of its duties and obligations under or arising out of the Appointment; and
- 3.2 it has exercised and will continue to exercise in the performance of the Services the reasonable skill and care to be expected of a properly qualified and competent structural engineer experienced in the provision of services and works for projects of a similar size scope value character and complexity to the Project;
- 3.3 it shall owe a duty of care to the Beneficiary in respect of all matters which lie within the scope of the Consultant's responsibilities in relation to the Project provided that the Consultant shall owe no greater duty of care to the Beneficiary under this warranty than it would have done if, in lieu of this warranty, the Beneficiary had been named as client instead of the Contractor in the Design Sub- Contract; and
- 3.4 the Beneficiary is entitled to have relied and shall continue to rely upon the Consultant's skill and judgement in respect of all matters which lie within the scope of the Consultant's responsibilities in relation to the Project.

4 Prohibited materials

The Consultant shall not specify or authorise for use any materials or goods which are then known by members of the Architectural profession (or generally considered within the construction industry) to be deleterious to health and safety or to durability in the particular circumstances in which they are used.

5 Step-in

- 5.1 The Consultant covenants with the Beneficiary that if any event of default shall occur under the Building Contract at any time the Consultant shall, if so required by notice in writing given by the Beneficiary in accordance with clauses 5.4.1 to 5.4.3 inclusive, accept the instructions of the Beneficiary or its appointee to the exclusion of the Contractor upon the terms and conditions of the Design Sub- Contract and the Contractor acknowledges that the Consultant shall be entitled to rely on the notice given to the Consultant by the Beneficiary as conclusive evidence for the purpose of this warranty that these circumstances have occurred permitting the Beneficiary to give such notice.

- 5.2 The Consultant hereby covenants that it shall not exercise nor seek to exercise any right to terminate or treat as terminated the Appointment and/or its employment or discontinue or suspend the performance of any of its obligations under the Appointment without first giving to the Beneficiary prior written notice specifying the Consultant's ground for terminating or treating as terminated the Appointment and/or its employment and/or discontinuing or suspending its performance under the Appointment. If the grounds are that sums which are due have not been paid by the final payment date and no effective pay less notice has been given the Consultant shall give 7 days notice otherwise the Consultant shall give 15 Working Days notice.
- 5.3 Compliance by the Consultant with the provisions of clause 5.2 shall not be treated as a waiver of any breach on the part of the Contractor giving rise to the right of determination discontinuance or suspension nor otherwise prevent the Consultant from exercising its rights after the expiration of the notice unless the right of determination discontinuance or suspension shall have ceased pursuant to the provision of clause 5.4.
- 5.4 Within the relevant notice period referred to in clause 5.2 the Beneficiary or its appointee may give written notice to the Consultant:
- 5.4.1 acknowledging that it assumes all the obligations of the Contractor;
 - 5.4.2 requiring the Consultant to continue with the performance of its duties and obligations under the Appointment;
 - 5.4.3 undertaking unconditionally to the Consultant to pay to the Consultant within 15 Working Days after the date of the notice under this clause 5.4 any sums which have become properly due and payable to the Consultant under the Appointment but which are at the date of such notice unpaid and in the case of a notice from an appointee of the Beneficiary the Beneficiary shall guarantee all payments due to the Consultant from the appointee.
- 5.5 In the event of the Beneficiary or their appointee giving notice to the Consultant in accordance with clause 5.4 the Appointment shall continue in full force and effect and in all respects as if the Appointment had been made between the Consultant and the Beneficiary or its appointee (as applicable) to the exclusion of the Contractor (but without prejudice to any rights of recovery as between the Consultant and the Contractor) and the provisions of this clause shall apply notwithstanding any dispute or doubt as to the validity of such rights of determination or discontinuance.
- 5.6 The Contractor confirms its agreement to the terms and conditions of this warranty and its concurrence with the arrangements made and contemplated by this warranty.

6 Copyright

- 6.1 Subject to any rights in any design, drawings and other documents supplied to the Consultant for the purposes of the Appointment by or on behalf of the Contractor, the copyright in all the Documents shall remain vested in the Consultant.
- 6.2 The Beneficiary shall have an irrevocable, royalty-free, non-exclusive licence to copy and use the Documents and to reproduce the designs and content of them for any purpose relating to the Works including, without limitation, the construction, completion, maintenance, letting, sale, promotion, advertisement, reinstatement, refurbishment and repair of the Works. Such licence shall enable the Beneficiary to copy and use the Documents for the extension of the Works but shall not include a licence to reproduce the designs contained in them for any extension of the Works.
- 6.3 The Consultant shall not be liable for any use misuse or variation whatsoever by the Beneficiary of any of the Documents for any purpose other than that for which they were prepared.
- 6.4 When requested to do so by the Beneficiary the Consultant shall provide to the Beneficiary copies of the Documents subject to the Beneficiary paying the Consultant's reasonable copying charges in connection with complying with such request.

7 Insurance

7.1 The Consultant shall:

- 7.1.1 take out (unless the Consultant has already done so) a professional indemnity insurance policy for not less than ten million pounds [REDACTED] for any one claim or series of claims arising from the same original cause, source or event (save in respect of claims arising out of or relating to asbestos when such insurance shall be limited to [REDACTED] the aggregate in any annual period of insurance);
- 7.1.2 provided that it remains available at commercially reasonable rates, maintain such insurance until the expiry of 12 years from the date of practical completion of the Works; and
- 7.1.3 as and when reasonably requested to do so by the Beneficiary, produce for inspection documentary evidence that such has been effected and/or is being maintained. But not in any way which would breach the terms of the policy then in force.

- 7.2 If the insurance referred to in clause 7.1 ceases to be available at commercially reasonable rates, the Consultant shall immediately give notice to the Beneficiary so that the Consultant and the Beneficiary can discuss the means of best protecting the respective positions of the Beneficiary and the Consultant in the absence of such insurance.

8 Assignment

- 8.1 The Consultant shall not without the consent of the Beneficiary assign its rights under this warranty.
- 8.2 The Beneficiary may (without the consent of the Consultant) assign its rights under this warranty:
- 8.2.1 to any mortgagee and by way of re-assignment on redemption;
 - 8.2.2 to any Group Company;
 - 8.2.3 on two other occasions only.
- 8.3 In this warranty references to the Beneficiary shall include where the context admits its permitted assignees but not so as to permit more than two assignments under clause 8.2.3.
- 8.4 The Consultant undertakes with the Beneficiary not to contend that any person to whom this warranty may be assigned will be precluded from recovering under this warranty any loss resulting from any breach of this warranty either by reason that the person is an assignee and not the original party to this warranty or by reason that the Beneficiary named in this warranty or any intermediate owner of the Beneficiary's interest in the Project shall escape loss resulting from such breach by reason of the disposal of its interest in the Project.

9 Notices

- 9.1 Any notice to be given under this warranty shall be in writing and shall be deemed to be duly given if it is delivered to the parties' registered office for the time being.
- 9.2 Notices may be served by:
- 9.2.1 personal delivery; or
 - 9.2.2 pre-paid registered or recorded delivery mail.
- 9.3 Notices and communications shall be deemed to have been served or received in the case of:
- 9.3.1 personal delivery on the date of delivery; or
 - 9.3.2 pre-paid registered or recorded delivery mail on the second Working Day after the notice of communication is posted.

10 Continuing effect

Notwithstanding the completion of the Project or any part of the Project this warranty shall continue to have effect.

11 Miscellaneous

11.1 Nothing in this warranty shall limit or affect any other rights or remedies (whether under any contract, at law, at equity or otherwise) which the Beneficiary would have against the Consultant in the absence of this warranty.

11.2 The Consultant's liability under this warranty shall not be released, diminished or in any other way affected by:

11.2.1 the appointment by the Beneficiary of any person to monitor the carrying out of the Works or to inspect any documents relating to the Property and/or the Works on behalf of the Beneficiary or the failure to appoint such a person; or

11.2.2 any approval or consent given or withheld or purported to be given or withheld by or on behalf of the Beneficiary.

11.3 The Consultant's liability under or in connection with this Deed shall be limited to £10,000,000 (ten million pounds) for each and every claim arising out of the same originating cause or source. This limit shall apply however that liability arises including a liability arising by breach of contract, arising by tort (including the tort of negligence) or arising by breach of statutory duty. Provided that this clause shall not exclude or limit the Consultant's liability for death or personal injury caused by the Consultant's negligence or fraud or fraudulent misrepresentation.

12 Contracts (Rights of Third Parties) Act 1999

Nothing in this warranty confers or purports to confer any rights on any person pursuant to the Contracts (Rights of Third Parties) Act 1999.

13 Law

This warranty shall and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) be governed by and construed in accordance with the laws of England and Wales and the parties hereby submit to the jurisdiction of the English courts.

14 The Consultant shall have no greater liability to the Beneficiary than if the Beneficiary had been named as joint employer under the terms of the original Appointment.

This warranty has been executed as a deed and is delivered and takes effect on the date stated at the beginning of it

Executed as a deed by the
ROYAL BOROUGH OF KENSINGTON &
CHELSEA TENANT MANAGEMENT ORGANISATION LTD
acting by a director [] in the presence of:

Witness signature:

Name:

Address:

Occupation:

Executed as a deed by
RYDON MAINTENANCE LIMITED
by two of its Directors:

Director

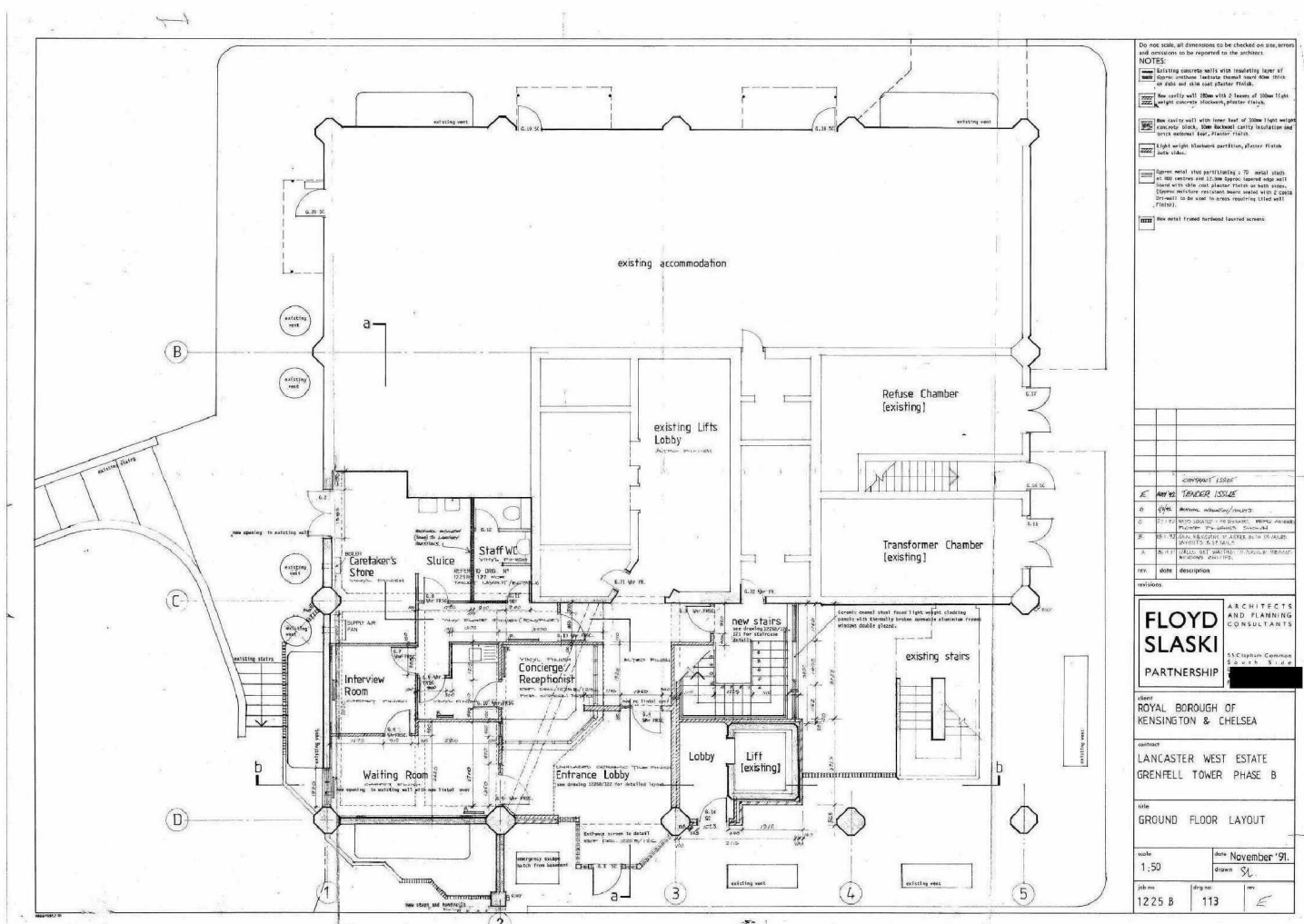
Director

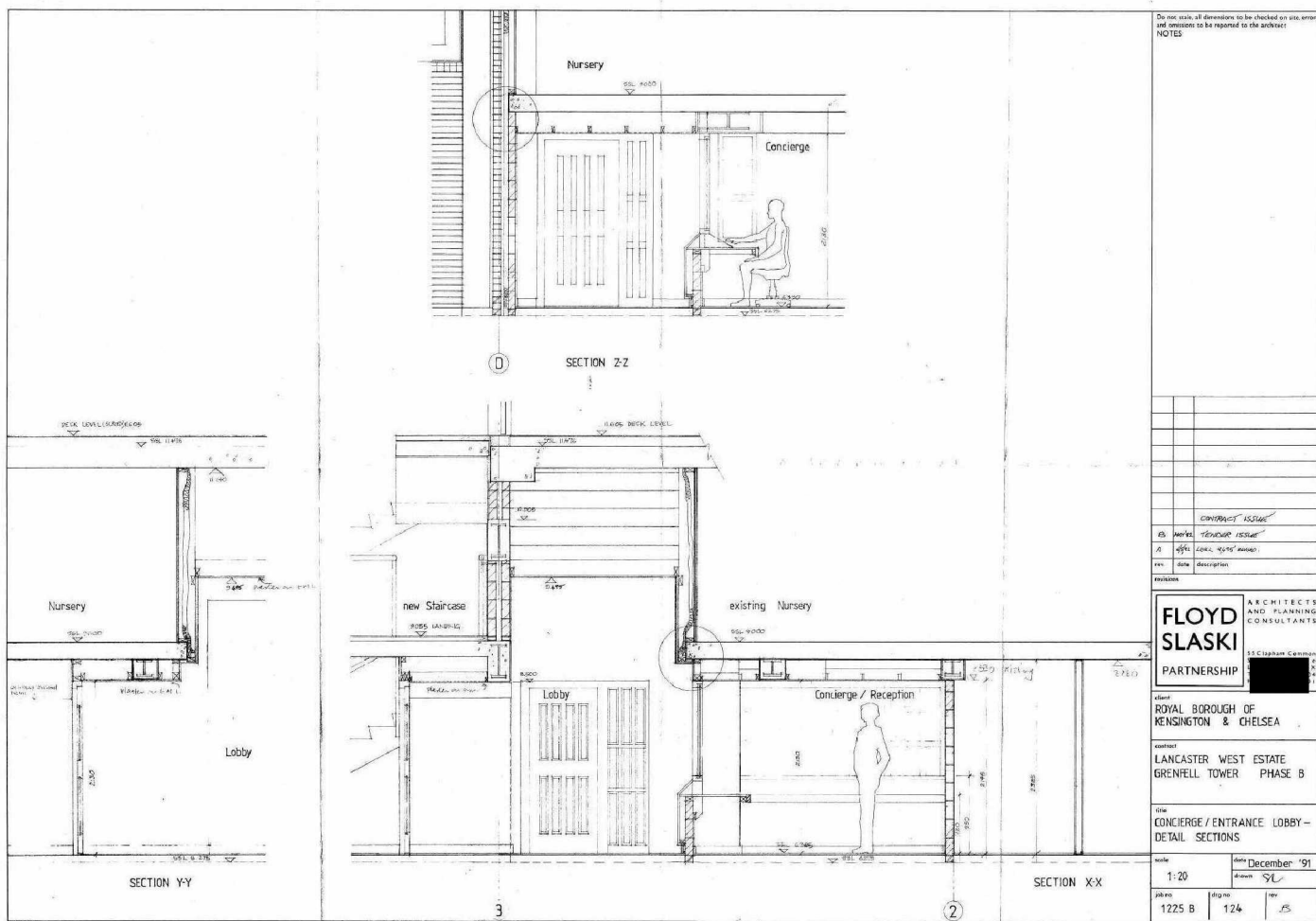
Executed as a deed by
STUDIO E ARCHITECTS LIMITED
by two of its Directors:

Director

Director

Two handwritten signatures in black ink. The first signature is a stylized 'A' followed by a large, loopy 'E'. The second signature is a more fluid, cursive script.





Do not scale, all dimensions to be checked on site, errors and omissions to be reported to the architect.

NOTES

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		
76		
77		
78		
79		
80		
81		
82		
83		
84		
85		
86		
87		
88		
89		
90		
91		
92		
93		
94		
95		
96		
97		
98		
99		
100		

ARCHITECTS AND PLANNING CONSULTANTS

FLOYD SLASKI PARTNERSHIP

10 Clapham Common, London SW4 7EP

client: ROYAL BOROUGH OF KENSINGTON & CHELSEA

contract: LANCASTER WEST ESTATE GRENFELL TOWER PHASE B

title: CONCIERGE / ENTRANCE LOBBY - DETAIL SECTIONS

scale: 1:20

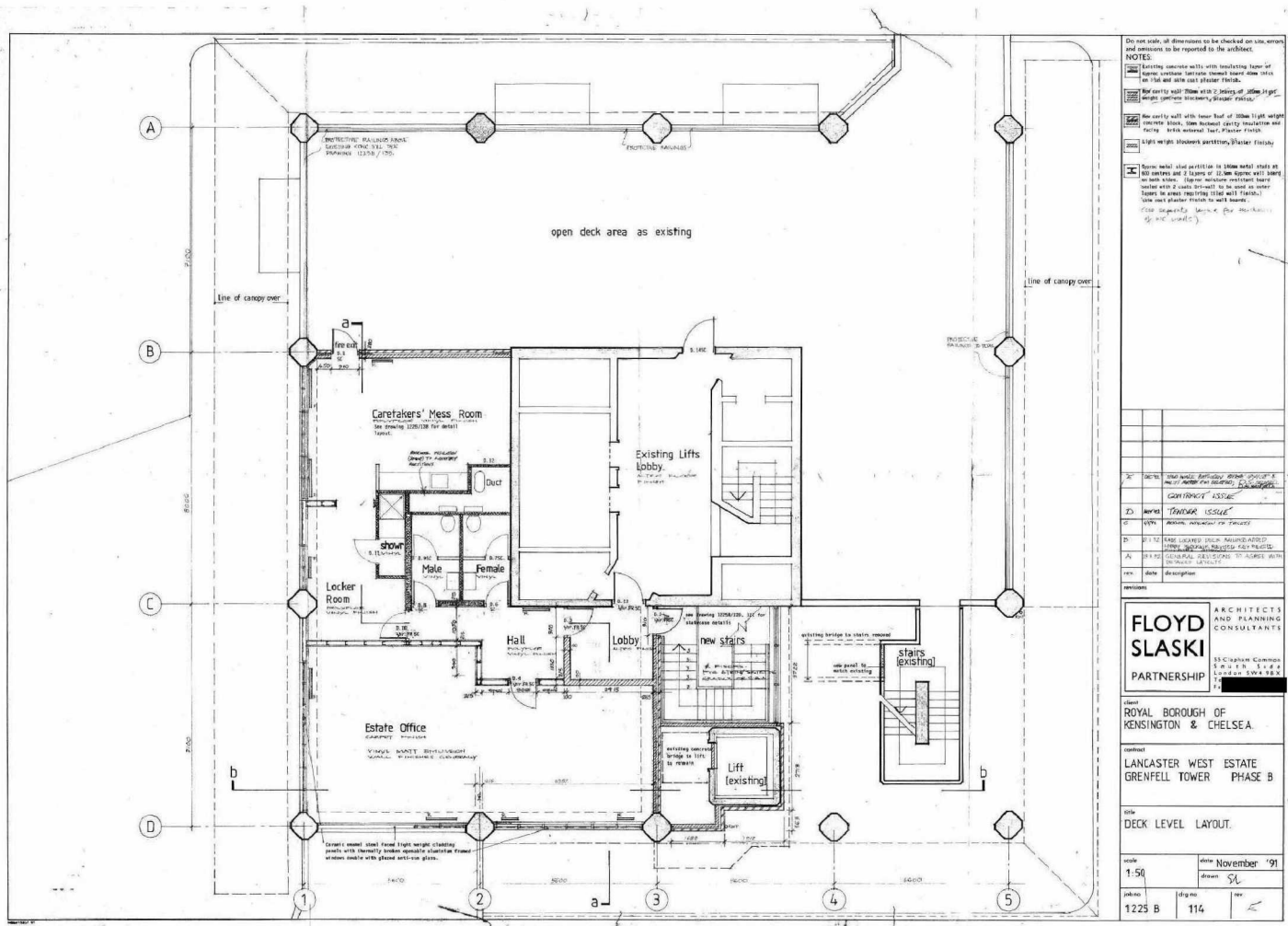
date: December '91

drawn: SL

job no: 1225 B

drawn: 124

rev: B



SEA00014274_0030

NOTES FROM MEETING

Project: Grenfell Tower Refurbishment

File ref.: 12-009/01

Minutes of Client Meeting held on Wednesday 28 March 2012 at 2.00pm

Present:

M. Anderson	RBKC TMO
B. Watts	Max Fordham LLP
B. Sounes	Studio E LLP

Distribution:

As present plus

T. O'Hanlon	Curtins
C. Churchman	Churchman Landscape Architects

1.00 BRIEF

Action

The following items have been identified by the TMO as key to the refurbishment of Grenfell Tower:

- Rationalisation of the office space required for the EMB staff (4no) and TMO staff (3no.) This needs to be easily accessible and either at ground or walkway level.
- Walkway level +1 to be converted to residential. 3 or 4 bedroom units proposed.
- New windows and overcladding to entire tower.
- **New individual heating systems for all 120 existing units, plus refurbished accommodation at lower levels.** It is not proposed to provide individual gas metering.
- **More floor area to be created from the existing open loggia at Walkway level and the removal of the existing external stair and lift.**
- **Alternative escape provision from tower to be explored.**
- **Alternative public access from ground to walkway to be explored.**
- Upgraded entrance/reception areas.
- Create a level east-west route on the south side of Grenfell tower, with enhanced public areas to be seamless with KALC work.

Possible items to include:

- **Relocation of nursery to a ground floor location, for instance to the existing EMB hall.**
- Creation of additional residential properties over and above those mentioned above.
- Creation of additional spaces available for community or commercial lets.
- Upgrade to stair and communal areas within tower.

Site

MA would expect to see the line separating TMO and non-TMO funded work match the red line on the plan contained in the Supplementary Planning Document.

TMO

2.00 PROGRAMME

Funding is subject to Cabinet approval. The funding application for the project will go before Cabinet on 3 May. The Design team are working at risk until this has been ratified.

The TMO would like to submit a Planning Application within a month of the KALC application, to demonstrate to tenants the Council's commitment to the project. This would in advance of a complete stage D.

Studio E to initiate Pre-Application meetings with RBKC Planners

SE

See Programme attached.

3.0 APPOINTMENTS

Design team for forward fee proposals to Mark Anderson. Currently the intention is to mirror the arrangement on KALC, except appointments will be direct, not via Studio E:

Stage A-E Direct appointments to the TMO

**SE MF
CC**

Stage F-L Novated to the EISE contractor.

Fee proposals are therefore to cover full services and be broken down into RIBA stages.

Consultants to include estimates and scope for any surveys that may be required

ALL

4.0 ADDITIONAL CONSULTANTS

MA will approach Appleyards or another QS to provide cost input.

TMO

Possible disability consultant required. SE will approach consultant engaged on KALC.

SE

Possible Planning consultant required. SE to explore with RBKC Planners.

SE

The TMO are covering the consultation for the project. This process has already begun. MA to forward results to design team.

TMO

Post Meeting note:

Fire safety advise may be required

SE

A CDM Coordinator will be required.

TMO

5.0 BUDGET

The TMO will be requesting £6m (excl VAT) to cover to full cost of the development, including fees, surveys etc.

Next Meeting to be held at 11am, Tuesday 10 April at 346 Kensington High Street

NOTES FROM MEETING

Project: Grenfell Tower Refurbishment

File ref.: 12-009/01

Minutes of Design Team Meeting held on Thursday 19th April 2012 at 11.00am**Present:**

M. Anderson	RBKC TMO
B. Watts	Max Fordham LLP
J Bannister	Churchman Landscape Architects
S. Britton	Appleyards
B. Salami	Appleyards
J. Lee	Exova
C Childs	Leadbitter
D. Gillespie	Weatherwise Ltd
B. Sounes	Studio E LLP
M Kiefer	Studio E LLP
B. Cagney	Studio E LLP

Distribution:

As present

Marc Watterson	Taylor Young
----------------	---------------------

1.00 INTRODUCTIONS/GENERAL**Action****BS explains current status of project;****MA describes TMO as an independent body contracted by RBKC to manage council housing estates across the borough;****Furthermore MA explains the management responsibilities for the entire Lancaster West estate as follows:**

- RBKC – Landlord
- TMO – Management of all RBKC estates (set up 1996)
- EMB – **Estate management board as government body managing the Lancaster West estate locally but subcontracted this task to TMO**

MA confirms that the Grenfell Tower refurbishment is a separate project from KALC and will therefore require separate planning application.

BS explains that Grenfell as part of Lancaster West was completed in early 1970's;**It comprises 20 residential floors with a fire escape exit only onto the Deck level (Walkway) which is raised approx. 5m above ground level;****The ground floor contains the main entrance for residents including a concierge/reception for the housing offices at walkway level;****On the north is a boxing club; the rest of the ground floor is taken up by parts of**

the plant and services;

Between ground floor and deck level is a mezzanine level with low ceiling height containing a nursery;

In the 1990's offices space was created on parts of the Deck level blocking off the connection to the walkways of the rest of the estate;

The Deck+1 level was originally designed as a surgery and later used as offices; this space is now vacated;

MA points out that there are air intake ducts for the smoke vents to the core on Deck+1 level expressed as grills in the facade;

The basement contains the central heating and warm water plant for the entire estate.

2.0 APPOINTMENTS

BS states that all consultants are working at risk at this moment;

3.0 PROJECT SCOPE

MA describes the Grenfell Tower upgrade as a legacy project in context of the KALC project and of high priority with regard to the refurbishment of the estate as a whole;

MA explains that the Grenfell Tower Upgrade will be presented to the residents as the first phase of the Lancaster West estate refurbishment;

MA states that RBKC priorities are the creation of a level passage on the south side of the tower (East/West passage) and the reorganisation of the walkway access including disabled access;

MA confirms that the TMO priority for the Grenfell Tower Upgrade is the replacement of the outdated centralised heating and warm water system for the tower preferably by individual combi boilers; the desire is the heating system replacement not being part of the planning application to avoid opposition to individual combi boilers;

Further objectives are:

- Improving the thermal efficiency and visual appearance of the facade, possibly complementary to KALC;
- TMO & EMB management and inspectors offices in one location (not priority with regard to planning application)
- Relocation of nursery to be considered;
- Secure fire escape exit for existing residential units;
- New 3 to 4 bedroom units on Deck+1;
- New office accommodation on Deck level (MA: RBKC prefers residential use if office accommodation can be provided elsewhere)
- Demolition of existing free standing stair and retention of existing external lift;
- Removal of existing canopies;

- Relocation of bins;
- **Controlled access to Deck level within the envelope of the Grenfell Tower;**

MA mentions RBKS's **desire to extend the footprint of the tower on GF level;**
viability TBC

Appleyards

BW describes an option for natural ventilation to flats via louvred openings integrated in the facade design with fixed glazed units. This could be developed to cut down sound transmission from the outside (KALC play areas / train) and prevent accidental falls and objects dropped from windows;

MA states that TMO is not entirely opposed to window cleaning as part of their management tasks but points out that tenants prefer openable windows;

MA confirms that gas supply to all flats is in existence because of gas hobs;

BW explains that gas combi boiler units will require ventilation which can be either provided through the facade or via internal flue to roof;

It is assumed that it is required to install a new roof build-up to comply with AD Part L.

BW raises the question whether AD Part L 2013 or 2016 should be targeted as basis for the energy performance certificate of the building; MA prefers AD Part L 2016 as target;

TMO

MA states that there is the desire on RBKC side to create a penthouse level;

JL pointed out that this will be problematic considering the non-compliance of the escape route to the existing residential levels;

BS states that the boundary of the Grenfell Tower project are clarified by the KALC red-line drawing

It needs to be clarified what happens to the wall behind the stepped ramp after its demolition;

TMO/
RBKC

BS explained that an upgrade of the undercroft opposite of the main entrance to the tower should be part of the project to create a more attractive approach;

MA confirms that existing satellite dishes can be removed because digital cables has been installed to all residential units;

4.0 PROGRAMME

MA confirms that the cabinet decision about the project is expected on the 03/05/2012 and a positive outcome is anticipated;

CC (Leadbitter) indicated an initial preference would be to commence work on Grenfell Tower as soon as possible after the KALC start on site because of logistical advantages;

MA emphasises that RBKC does not want KALC to be prejudiced by the Grenfell Tower Upgrade

MA points out the importance of resident liaison and the clarification of the impact of the project on the residents of the tower;

CC confirmed that they have a experienced liaison team and pointed out that the window replacement and installation of combi boilers including piping will be the most intrusive works;

5.0 BUDGET

The TMO will be requesting £6m (excl VAT) to cover to full cost of the development, including fees, surveys etc.

MA requires a budget break down from Appleyards for the Committee meeting on Appleyards 03/05/2012 as follows:

- Cost of cladding
- **Cost of replacing heating/warm water system**
- Cost of remodelling
- **Cost of externals**
- Fees

To provide a budget breakdown SB requires the drawings tabled during the meeting; SE to issue ASAP

SE

6.0 POST MEETING NOTE: MEETING WITH RBKC PLANNERS

BS and MK met with Edward George and James Macini on 20 April. The proposals were discussed and the Planners were able to make the following comments:

- **The red line of the Planning Application boundary can overlap with the KALC boundary, meaning the KALC external works will be "frozen"** showing the stepped ramp in place and the Grenfell submission will **supercede it showing the ramp removed. (This implies the application boundary may have to include the whole of the reconfigured play area).**
- In terms of the new housing, it was suggested that changing from an "office use" designation to "residential" **is less sensitive than "social use"**
- **The Planners responded negatively to aluminium rainscreen as a cladding solution, calling it plastic. They would like to see the character of the tower retained or enhanced, even suggesting leaving the diamond piers exposed. They would prefer to see an insulated render system.**

7.0 POST MEETING NOTE: MEETING WITH EMB

MA and BS met with Robert Bryant, chair of the EMB on 24 April. The proposals were discussed and he gave his initial thoughts:

The EMB are of the view that the security the site would be improved with comprehensive CCTV. Fencing off play/green areas was also mentioned.

It was proposed and well received that the Estate Inspectors be located at ground floor on the SE corner of the tower with a direct connection to the Estates management team at Mezzanine level.

The EMB are aware that the Boxing Club would like to move and will discuss their needs with them.

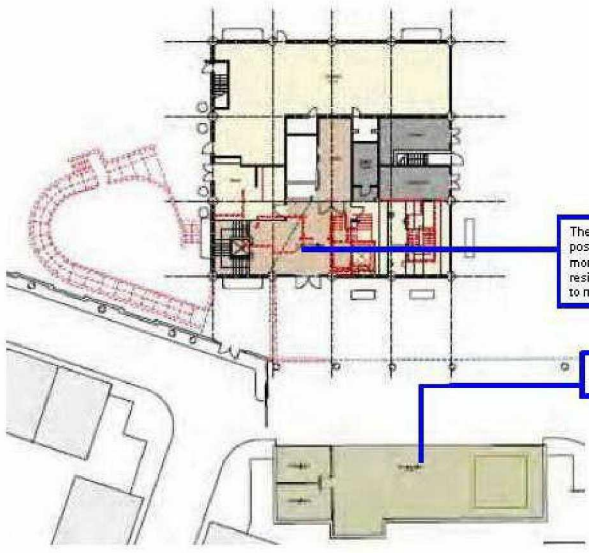
The conversion of some of the garages to offices needs to consider the revenue they will generate.

The first meeting to present the proposals to the EMB will be on the 15 May. An open committee meeting is proposed for 29 May which will be a public event.

Next Meeting to be confirmed



SEA00014274_0038



The approving authority will not approve any fire load positioned in this area. Fire load in this area presents a more significant risk than would ordinarily be expected in a residential exit from protected stairway. It is recommended to maintain this area as a sterile space.

Two escape routes are required if the occupancy exceeds 60 people in the Boxing Club.

Issue 01	30.05/12	BWF in the common area Option D	JL	TA
Rev No	Date	Description	By	Checkd

Project Name: Grenfell Tower

Job No: 301922

Drawing title: Ground Floor

Prepared by: JL

30.05/12

Issue: 01

Reviewed by: TA

30.05/12

Doc Ref: JIW/29550

Exova Training Centre

Branch House

65-7 Remondrey Street

London

SE1 2JF

United Kingdom

Tel: [REDACTED]

Fax: [REDACTED]

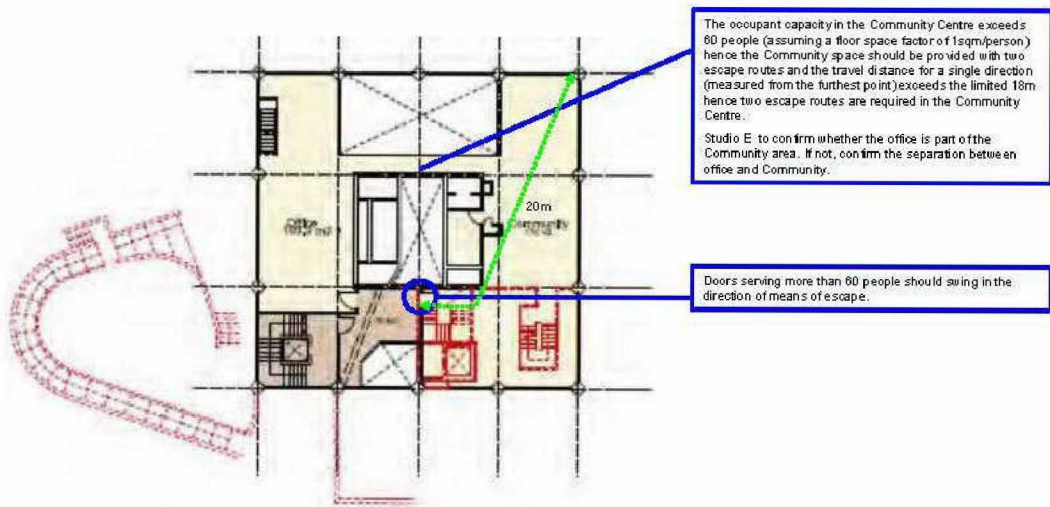
E: london@exova.com

W: www.exova.com

Exova

Training Centre

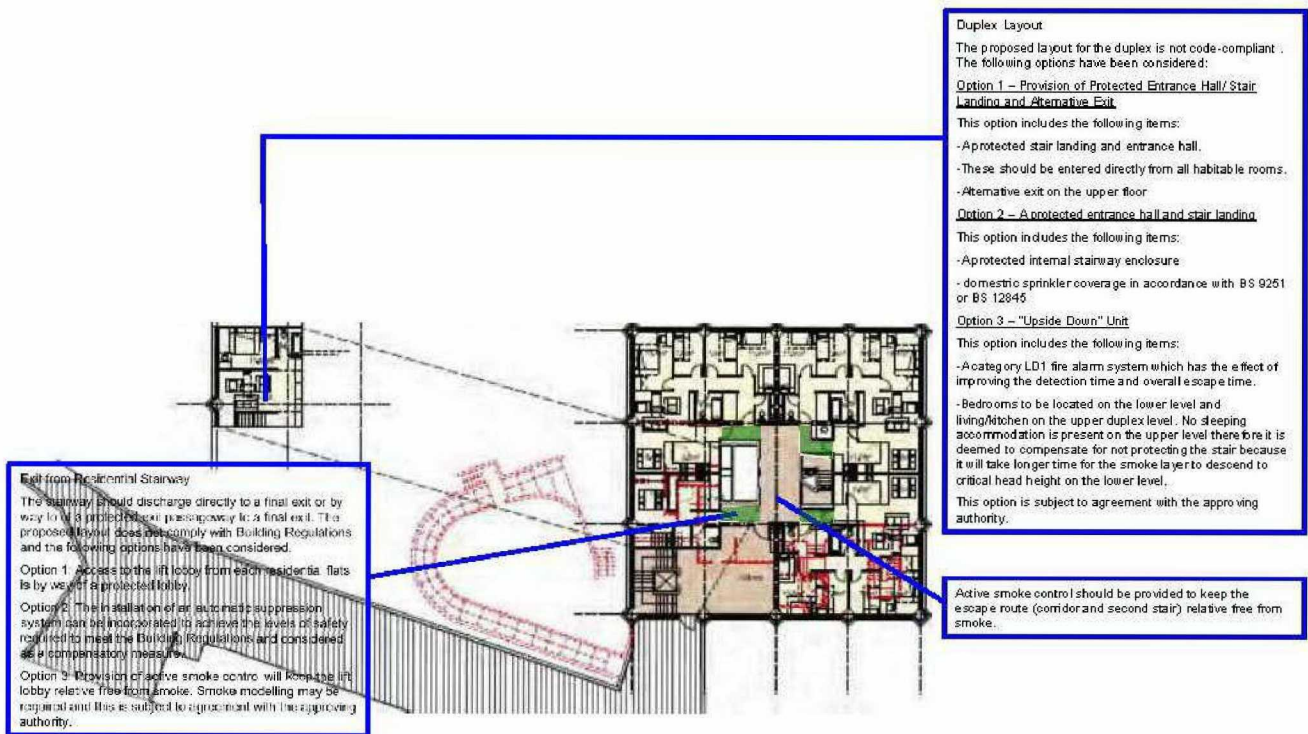
Building, Learning, Growing



Issue 01	30.05/12	BMP Initial comments on Option 0	JL	TA
Rev No	Date	Description	By	Checkd

Project Name: Grenfell Tower Job No: 301922			
Drawing title: Mezzanine Level			
Prepared by: JL	30.05/12	Issue: 01	
Reviewed by: TA	30.05/12	Doc Ref:	JW2958D
Exova (Trading on the Bramah House 65-71 Remondée Street London SE1 3JF United Kingdom		T: [REDACTED] F: [REDACTED] E: london@exova.com W: www.exova.com	
			

SEA00014274_0040



Issue 01	30.05/12	BWF Initial comment on Option 0	JL	TA
Rev No	Date	Description	By	Checkd

KEY
Protected lobby

Project Name: Grenfell Tower Job No: 301922			
Drawing title: Walkway			
Prepared by: JL	30.05/12	Issue: 01	
Reviewed by: TA	30.05/12	Doc Ref: JN29580	
Exova Consulting for the Bramah House 66-77 Remondrey Street London SE1 3JF United Kingdom		E: london@exova.com W: www.exova.com 	

SEA00014274_0041

Evacuation Strategy:

The evacuation strategy for residential flats is "defend in place" i.e. 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.

Fire Detection and Alarm

The flats should be fitted with standard category LD3 fire detection and alarm system as recommended in BS 5839: Part 6. Note that the smoke detection in the flat is separated from the detectors in the common corridors.

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

Smoke Control (Stair and Corridor)

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).

In the design team meeting held on 19 April 12, it was understood that the existing residential stair is pressurised.

Design team to confirm the standard of the existing pressurisation system and location of the air release path in the common corridor.

Horizontal Escape (Residential Flat)

The door to any habitable room should not be more than 9m away from the front door. The travel distance provided is considered acceptable.

Each flat is provided with a flat entrance and an alternative exit. The living room and bedroom accommodation should be fire separated with a 30 minutes fire resisting construction as recommended in Approved Document B.

Enclose kitchen

Horizontal Escape (Common Corridor)

Where travel distance is possible in one direction only, the travel distance is limited to 7.5m (measured from the stair to the furthest flat entrance door). The travel distance provided is considered acceptable.

The existing dry riser is positioned at this location. It is understood that a new dry riser will be installed. The new dry riser should be located in the residential stairway as recommended in Approved Document B.

Issue 01	30.05/12	BWF Initial comments on Option D	JL	TA
Rev No	Date	Description	By	Check

KEY
— 30 minutes fire-resistant construction

Project Name: Grenfell Tower Job No: 301922
Drawing title: Typical Residential Level

Prepared by: JL 30.05/12 Issue: 01
Reviewed by: TA 30.05/12 Doc Ref: JWR29550

Exova Consulting for the
Bramah House
66-7, Brompton Road
London
SE1 2JL
United Kingdom

T: [REDACTED]
F: [REDACTED]
E: london@exova.com
W: www.exova.com



SEA00014274_0042

Budget Cost Estimate nr. 1

prepared for

**Kensington and Chelsea Tenant Management Organisation
(KCTMO)**

relating to

**Grenfell Tower Refurbishment Works
Kensington, London**

June 2012

Notes :-

- 1 The estimate is based on prices at 2nd Quarter 2012. Please note that if the project is deferred to next year then the BCIS tender price index forecast is currently indicating an increase in tender price levels of 1.3%, from 2nd Quarter 2012 (224) to 2nd Quarter 2013 (227).
- 2 The estimate assumes that the works will be procured on a two stage tender basis, keeping IESE contractor (currently contracted under KALC) and Design Team will be novated at Stage E.
- 3 Allowances for the scope of the works have been based on the information from Studio E LLP received on 28th May (Drawing nr. 1279 SK 003, 004d, 009 and 010 and Design Team Meeting on 24th May 2012
- 4 Floor areas stated are largely derived from areas indicated on the drawings (1:200 at A1), but are indicative at this stage and subject to verification as more accurate details become available.
- 5 Costs assume a construction period of approximately 64 weeks (15 months) and works being carried out during normal working hours.
- 6 All Mechanical and Electrical services are compliant with current regulations and standard. No replacement is allowed for unless specifically stated.

Exclusions :-

No allowance has been made for the following;

- A Tender price increases beyond 3rd Quarter 2012
- B Removal of any contaminated substances, e.g. Asbestos
- C Public Realm, Drainage, soft landscaping, internal redecoration/refurbishment works to existing 20-storey flats
- D Statutory fees including Planning and Building Control.
- E Site investigation, survey works for checking existing structural framework, drainage, existing services installations, etc., asbestos survey, contamination survey, topographical surveys.
- F Decants, removals and relocation costs.
- G Finance and legal costs
- H Out-of-hours working; requirement for 'noisy working restriction' is included in the preliminaries allowance.
- I Full VAT liability.
- J Loose furniture, fixtures and equipment, other than where indicated.
- K Internal refurbishment/fitting out to new Boxing Club (transform from existing garage)

GROSS INTERNAL FLOOR AREA (m²)

Ground including New Boxing Club and Nursery (+6385)	813.00
Mezzanine (+8995)	502.00
Walkway Level (+11605)	502.00
Walkway Level + 1	56.00
Office Level (+15874)	502.00
20-storey Residential Level (+19770 and above); GFA of 10,040m2	Excluded
	<hr/> 2,375.00

2,375.00 m2

Grenfell Tower Refurbishment Works

Budget Cost Estimate Breakdown:

Item	Descriptions	Qty	Unit	Rate £	Total £	Options	Total £
1	<u>Scope of Works</u>						
A	Demolition of existing stairs and lift enclosure (SE corner) from Ground (6385) to Existing Family and Children's Services Office level (15874)	160	m²	150	24,000		
B	Demolition of existing wall partition and doors to Existing Store, Lobby, Offices, etc.	920	m²	55	50,600		
C	Strip out of existing areas to be reformed including existing floor finishes, ceiling finishes	1,800	m²	20	36,000		
D	Removal of stepped ramp	80	m²	200	16,000		
E	Alteration to existing levels and New paving to stepped ramp removed	100	m²	200	20,000		
F	New enclosure to secure garage area (subject to confirmation); allow	1	item	50,000	50,000		
G	Clearance of existing Garages and preparation for New Boxing Club	180	m²	20	3,600		
H	Upgrade lighting and soffit treatment to deck for Boxing Club	180	m²	200	36,000		
I	New shell/enclosure for new Boxing Club	400	m²	400	160,000		
J	Infill flooring/new floor plates to existing void in existing Boxing Club, staircase area from Ground to Existing Office level	390	m²	350	136,500		
K	New enclosure to cover areas at Walkway to create new residential units	427	m²	500	213,500		
L	Forming floor opening (4m x 3.5m) on Mezzanine	1	Item	5,000	5,000		
M	New staircase (9.5m high) and forming new lift core including building into existing structure	1	Item	30,000	30,000		
N	New Platform lift	1	nr	30,000	30,000		
O	New reception/offices, common area etc. at Ground, Mezzanine Floor including new partition, new floor, wall and ceiling finishes, upgrade/modification of M&E services	1,133	m²	1,100	1,246,300		
P	New residential units at Walkway Level and Office Level including new partition, new floor, wall and ceiling finishes, upgrade/modification of M&E services	1,060	m²	1,200	1,272,000		
Q	Remove existing windows and New double-glazed pivot windows to whole tower	1,958	m²	450	881,100		
R	<u>Option 1:</u> New cladding including insulation (allow say VM Zinc Rain screen Cladding) to whole tower	4,324	m²	260	1,124,240		
S	<u>Option 2:</u> New Render including insulation and inner leaf at £200/m² (Assumed existing fittings are sound and can be fixed secure to existing cladding without any replacement required)	4,324	m²	200		884,800	
T	Remove existing canopy and install new canopy	300	m²	600	180,000		
U	Cap-off and modification/adaption of existing communal heating system	1	item	10,000	10,000		
V	Cap-off incoming heating and hot water services to apartments and connect new combi boilers to existing pipework. (Assumed existing pipework can be reused for combi boiler)	128	nr	250	32,000		
W	New combi boilers to all flats, replacing the existing communal heating system (Excludes new radiators and replacement of pipework)	128	nr	2,500	320,000		
X	New Heating system and Pipe works for Office, Nursery, Boxing Club, common area at Ground floor and Mezzanine	1,423	m²	50	71,150		
Y	New communal satellite	1	item	50,000	50,000		
Z	New CCTV system (allow say 5 cameras)	1	item	30,000	30,000		
Z1	New substation for electric supply	1	item	140,000	140,000		
							6,167,990
2	Preliminaries costs (Construction period of 64 weeks), say 15% of Construction Cost:						925,199
3	Sub-total:						7,093,189
4	Contingency allowance @ 10%, say	10.0%					709,319
5	Total Estimated Construction Cost at current prices at 2nd Quarter 2012 (excluding VAT):					Say	7,803,000

Exova Warringtonfire
Barnall House
65-71 Be mo ndrey Street
London
SE1 3XF
United Kingdom

T: [REDACTED]
F: [REDACTED]
E: london@exova.com
W: www.exova.com



Testing. Advising. Assuring.

Mr B Sounes
Studio E LLP
Palace Wharf
Rainville Road
London
W6 9HN

Job No: 301922
Doc No: MT13545FP

BY EMAIL ONLY

11 June 2012

Dear Bruce

Re: Grenfell Tower Project – Fire Safety Engineering Services

Further to our phone conversation on 08 June 2012, we respond as requested with our fee proposal for the provision of fire engineering services for the Grenfell Tower in London.

Project Brief

The Grenfell Tower is an existing residential building in London. Exova Warringtonfire has been invited to produce a fire safety strategy report for the existing condition of the building. This fee proposal covers the production of a review of the existing fire safety arrangements for the building.

Company Profile

Our company has been working in the field of fire safety since 1965 and has established an extensive worldwide reputation for excellence in fire safety. We offer fire safety expertise in a wide range of areas, including fire engineering, smoke modelling, evacuation analyses, fire testing, fire certification and on-site inspection.

Our worldwide coverage includes offices and testing facilities in the UK (London, Manchester, Warrington), Germany (Frankfurt), the Middle East (Dubai, Abu Dhabi, Oman), Australia (Melbourne, Sydney, Brisbane), Canada (Mississauga), Hong Kong and Singapore.

One of our primary goals has always been to ensure that we provide an extremely high standard of service to our clients. As a result, we regularly win awards for our work on a variety of projects. Recent awards include:

- 2011 – Fire Excellence Award for the fire engineering design of Crossrail Whitechapel Station;
- 2007 – Fire Engineering Award for Small and Medium Premises for the design of Heathrow Airport Air Traffic Control Tower;
- 2006 – Fire Engineering Award for Small to Medium Premises for the design of Spitalfields Market; and

- 2004 – Fire Engineering Award for All Premises for the design of Queen Marys New School for Dentistry and Medicine.

More details of our company is available on our web site on www.warringtonfire.net

Proposed Scope of Work

The aim of the work would be the production of a retrospective fire safety strategy report for the existing building. This report will serve to inform the fire safety risk assessment and fire risk management plan for the building. The design of the building will be assessed against relevant design codes relating to the statutory requirements on the design of the building under the Regulatory Reform (Fire Safety) Order 2005, and also under Section 20 of the London Building Acts (Amendment) Act 1939 if the building falls within the size criteria specified by that legislation.

The scope of work for the project would therefore include

- a site visit (expected to take no longer than half a day) to survey the building's architecture and fire safety systems;
- the compilation of the fire safety strategy report.

It is assumed that a suitable and sufficient fire risk assessment exists for the buildings in their current condition, and that any relevant findings of that risk assessment will be made available to Exova Warringtonfire.

This scope of works is based on the assumption that a detailed appraisal is not required of the structural fire protection to the loadbearing elements of structure or of the fire compartmentation within the building. However, if it should transpire during the site survey that such an appraisal is necessary, then the scope of works can be extended to cover this, subject to a separate fee agreement.

The scope of work does not include provision for any meetings with the statutory authorities responsible for enforcing fire safety legislation or with the local fire and rescue service.

In developing the report, we would use our expert knowledge of fire safety design codes. The report for the building will consider the following items:

- means of escape;
- fire safety systems;
- any smoke ventilation provided;
- access and facilities for the Fire Service

Completion of this scope of services will occur once all the above-mentioned goals are accomplished.

Fire Engineering Team

The Fire Engineering divisions of Exova Warringtonfire currently employs over 50 experienced and qualified engineers worldwide, with backgrounds ranging from research, Building Control and the Fire Service. In addition, through Exova Warringtonfire group we have access to international experts in the behaviour of materials, fire testing and reaction to fire. This makes us unique amongst our peers.

The fire safety team would be based in our London office. James Lee (Consultant) (email address – james.lee@exova.com and telephone no: [REDACTED]) would lead the project with assistance from others within the company as necessary. CV's of the fire safety team can be provided upon request.

Fee Proposal

The fixed lump sum fee, exclusive of VAT but inclusive of expenses for each stage of the fire safety work is **£2865**

This fee is subject to our standard terms and conditions as detailed in Appendix A.

Additional Work

Any work outside the scope of work detailed above would be either charged at our standard hourly rates (details of which can be provided on request) or would be undertaken based on a previously agreed fixed fee.

Terms and conditions

This fee proposal is subject to our standard terms and conditions as detailed in Appendix A.

We can consider alternative terms and conditions or contractual arrangements (such as project-specific contracts and collateral warranties). There will be a 30 day period from the date of agreement of the fee proposal where we will consider alternatives. If no alternative is presented within that time frame then these terms and conditions of this fee proposal (in Appendix A) will stand for the duration of the project. During any consideration of an alternative contract and depending on the complexity and size of such documents, we would reserve the right to charge an additional £500 fee to cover the costs of the review of such documents. Acceptance of those terms and conditions would be subject to the liabilities and details being substantially similar to those contained in this document.

It should be noted that our standard terms are for payment to be received in our bank account within 30 days of the date of our invoices. Extensions to the 30 day terms would only be considered in exceptional circumstances (such as on major projects where our client has an excellent credit rating). For any extension to the payment terms we would expect to increase the fees shown within this proposal to cover the cost of the additional credit required.

It should be noted that the practice of 'pay when paid' (i.e. withholding payment to us until payment has been received from a third party) is not legal within the construction industry in the UK due to the Housing Grants Construction and Regeneration Act 1996. We would therefore not be able to accept that condition within any contract.

Changes to client or invoice details

If, during the project, you inform us of changes to the client or invoicing information, we would be happy to make those changes. However, if there are changes to the client company (e.g. we are asked to invoice a different company) we would need to carry out a credit check on the new client company before carrying out further work.

Appointment

If you wish to accept our offer we would be obliged if you would confirm this by completing and returning the enclosed fee acceptance form. Such correspondence should include complete information relating to the fee paying client and details of any specific information that you would like in our invoices.

If our invoices need to be passed to a third party for approval (such as a project manager) prior to being paid by the client, we would need full contact details of the client as well as the third party.

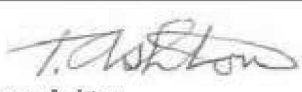
This offer remains open for a period of 60 days from the date of this letter.

If any information within this proposal is not considered correct, please do not hesitate to contact us.

We trust the above is satisfactory and provides you with the information that you require at this stage however, should you require any further clarification then please do not hesitate to contact us.

Yours sincerely


James Lee
Consultant
Exova Warringtonfire

Reviewed by:	 Terry Ashton Associate (for and on behalf of Exova Warringtonfire)	11/06/12
--------------	--	----------

Encs

- 49 -

deemed to be incorporated in the Contract and all of the same are hereby expressly excluded from the Contract.

expressly excluded from the Contract.

3.1 The Price is based on information available to the Company at the date of the Prospectus. Information is provided on the Prospectus that is believed to be material to the investment decision.

Unusually, nothing in the period of the Contract there shall be any labor in the cost of materials, labor or otherwise to the Company, the Price may, in the

3.2 In addition to the amount specified in the Quotation the following shall be payable (as appropriate):

3.2.1 any applicable value added tax;

3.2.2 package, insurance, freight, travel costs, bank charges, sample destruction costs, storage charges and disbursements incurred on behalf of the client, whether or the commodity concerned is hazardous, made to

of the client, whether on the company's premises or elsewhere, and to include storage charges on the company's premises. Any sample or materials supplied by the client are not removed within seven days of the date of notification to the client that they are ready for collection.

3.2.3 Insurance incurred by the company, in its absolute discretion, in respect of persons employed by the company, shall be for the benefit of the employees.

3.2.4 with prior notice, the cost of all sub-contractors employed by the company

32.5 any additional costs incurred by the company in accordance with the

32.6 any special standards or specifications required for the performance of

REQUIREMENTS: Any special hardware or specifications required for the performance of the service.

4.1 The Price shall be paid to the Company in full, in cleared funds, without any deduction, set-off or counterclaim, within thirty days of the date of the Company's notice. Time of payment of the price to the Company is a condition precedent to the Company's obligation to deliver the Shares to the Purchaser.

within the thirty days, the Company may: suspend any further Services being carried out for the Client; withhold the provision of Reports; alter or withdraw cited terms; and amend terms, prices or service level. The amount outstanding from

time to time shall bear interest (both before and after any judgment) at the rate of 4% per annum above the Royal Bank of Scotland plc base rate from time to time from the due date for payment until payment in full is made.

4.2 All payments due to the Company shall be payable within the specified time irrespective of whether or not the Client has recovered payment from a third party.

aid, for the avoidance of doubt, but without prejudice to the generality of the foregoing, this includes payments or fees due to the Company acting as experts or as consultants or as a service provider to the Company or to any of its subsidiaries.

4.3 If, in the Company's view, the Clients creditworthiness deteriorates before completion of the Project, the Company may, in its commercial discretion, suspend or

completion of the Service, the Company may require payment in full or a part of the Price prior to completion, or the provision of security for payment by the Client, such that, or in consequence of, the Company.

4.4 The Company has a general lien on all the Client's property in the Company's possession in satisfaction of any amount owed by the Client to the Company under the Contract and may deal with it as it sees fit.

5.1 The Services shall be carried out strictly in accordance with the written instructions from the Client and accepted for replicates or unless the Company considers replicates are necessary or desirable. The Company reserves the right to charge for replicates.

every time the original is confirmed.

5.2 The Client shall supply as much information as possible about each sample and/or Service requirement in order to assist in achieving an efficient service. Where information relating to the sample and/or the Service requirement is incorrect and the Company is involved in additional work, the Company reserves the right to charge for such additional work.

5.4. Methods of carrying out the Service and providing the Report shall be at the sole discretion of the Company unless prior instruction in writing is received from the Client.

specifying a particular procedure which is accepted in writing by the Company. Charges for such special procedures will be agreed between the Company and the Client prior to carrying out the Service.

5.5. Age verbal descriptions of the method used in the performance of the Service shall be given verbally on request. Where written descriptions or detailed procedures are requested, whether as part of the Report or issued separately, the Company reserves the right to make an additional charge. If the method is recorded in the Report represents the end product of development work carried out at the Company's expense, the method shall only be released at the discretion of the Company.

5.6 Company may, at its sole discretion, undertake to give priority in carrying out a particular Service. A surcharge may be imposed by the Company for the carrying out of priority work. Details of these arrangements will be listed by the Company on request.

5.7 It is hereto to radiography reports and film delivered or interpreted as part of the performance of the Subcontract, the Client shall notify the Company, within fourteen (14) days from date of issue of each radiography reports and film, of any Client or third party dispute concerning either the radiographic quality or interpretation of results. If the Client does so notify the Company within this time frame, (14) day period, the Client will be deemed to have accepted the radiography reports and film, together with any interpretation of these, provided by the Company.

6 SERVICES SUBJECT OF LEGAL PROCEEDINGS
6.1 If any aspect or element of the Services described in (Sample) is, or is likely to be

the subject of or relevant to legal proceedings, the fact must be notified to the Company in writing before the Services are carried out. If that fact is not disclosed to the Company at that stage, the Company may not, in its absolute discretion, be prepared to ouste expert testimony.

7.1 The following provisions of this Condition B set out the entire liability of the

Company, its employees, agents and sub-contractors to the Client whatsoever arising.

7.2 The Company does not exclude or limit its liability (if any) to the Client:
7.2.1 for breach of the Company's obligations arising under section 12 Sale of

Goods Act 1979 or section 2 of the Supply of Goods and Services Act 1982;

7.2.3 under section 2(3) of the Consumer Protection Act 1987;

7.2.4 for any matter which it would be illegal for the Company to exclude or to attempt to exclude or to limit its liability on

7.2.5 forward or transfer to a representation.

7.3 Except as provided in Condition D the Company shall not be liable to the Client (whether in contract, tort (including negligence), breach of statutory duty or

otherwise for any loss of profit, loss of business, loss of market, loss of contract, damage to goodwill, loss of anticipated savings, loss of revenue, loss or damage to

limited as a result of third party claims or any indirect or consequential loss whatsoever caused.

7.4. Subject to Condition 6 and Condition 8, the Company's total aggregate liability under the Contract to any one other person, whether or not a contract debt, shall be limited to the sum of £100,000.

the Contract in any calendar year (whether a contract, but (including negligence), breach of statutory duty or otherwise) arising out of or in connection with the performance or contemplated performance of the Contract or any delay in performance or failure to perform by the Company or otherwise, however arising.

	shall be limited to the greater of (i) 125% of the value of the Price paid or payable in that calendar year, or (ii) the outward posted Sterling.				
7.5	Subject to the other provisions of the Conditions, any claim by the Client against the Company shall be made in writing and notified to the Company within 365 days of completion of the Services under the Contract by the Company to the Client.	8.2	The Client may reproduce or replicate any Report in the form provided by the Company but shall not, without the written consent of the Company, reproduce or replicate any Report which has been modified from the form provided by the Company.	9.3	Where Samples are sent, the sole opinion of the Company, too bulky or too unstable to allow storage, the or more than one month, it will be at the absolute discretion of the Company as to the length of time such samples are kept before being destroyed.
7.6	All Samples are undertaken in good faith, to a reasonable standard of care and on a confidential basis. Reports are issued on the basis of information known to the Company at the time that the Samples are carried out. Although the Company will use all reasonable endeavours to ensure accuracy, the Samples depend, inter alia, on the effective co-operation of the Client, its staff and on the information submitted to the Company. Save as required by law, no representation or warranty, whether express or implied or otherwise as to the accuracy of a Report is given by the Company. In consequence, all Reports are prepared on the basis that:	8.3	The Client shall be bound to inform the Company in writing prior to the Company carrying out any Service on a Sample that it is of a dangerous or unstable nature and provide instructions on the safe handling of the Sample. For example, a dangerous or unstable Sample will include, but is not limited to, radioactive materials, biologically active or hazardous substances, reducing or oxidising agents, unstable organic compounds, materials considered to be toxic, flammable, corrosive, irritant, explosive, inflammable, carcinogenic or reproductive hazards or materials that are dangerous to the environment. The Client shall indemnify the Company from and against all losses suffered by the Company, including, without prejudice to the generality of the foregoing, all damage to the Company's property and all claims in respect of injury to or death of any of the Company's employees, subcontractors or agents or of any third party, directly or indirectly arising from or in connection with the failure of the Client to inform the Company of the dangerous or unstable nature of a Sample and/or to provide adequate instructions on the safe handling of the Sample. Where the Client informs the Company that a Sample is of a dangerous or unstable nature, the Company may, in its absolute discretion, elect not to carry out the Service and to terminate the Contract whereupon the provisions of Condition D will apply, save that the Company shall have no liability for the termination of the Contract.	9.4	Samples shall be returned to the Client only if prior instructions in writing in that regard are received by the Company and the Client shall be charged for all costs associated therewith (including carriage).
7.6.1	there is no responsibility to any person or body other than the Client;			10	OWNERSHIP, COPYRIGHT AND PATENTS IN RELATION TO SERVICES
7.6.2	they are not carried out for any particular purpose and no statement is to be deemed, in any circumstances, to be of any use to a representative, trade taking, warranty or contractual condition in use specifically stated;			10.1	All Intellectual Property Rights (including copyright in records, scientific documentation, primary data or electronic records or handling data) produced during any Service shall belong to and remain the property of the Company unless otherwise expressly agreed as part of the Contract.
7.6.3	they are determined solely by the professional analysis undertaken by the Company's staff on each individual Contract and any forecast by the Company of the results is an estimate only;	8.4	The Client agrees to indemnify, keep indemnified and hold harmless the Company from and against all losses which the Company may suffer or incur arising out of or as a result of any breach or alleged breach of performance or failure in performance by the Client of the terms of the Contract or breach of any law or any claim threatened or made against the Company by a third party arising out of the Service or out of any delay in performing or failure to perform the Services. Notwithstanding any other provision of these Conditions, the Client's liability under the indemnity shall be limited to:	10.2	Ownership and copyright in the Reports shall remain with the Company. Upon the Client disclosing all its obligations under the Contract, including payment of the Price, the Client will obtain an irrevocable, royalty-free, non-exclusive licence to use the Report (including the right to sub-license, subject to the terms of Condition D, D and D).
7.6.4	the Company is entitled to be paid the Price irrespective of the results or conclusions reached in the Report;			10.3	The Client hereby warrants that it will not use the Report or any other reports, results, or information supplied by the Company for the purposes of advertising or publication to third parties. Any such use of the Report or other reports, results or information is permitted under the Contract only with the prior written consent of the Company who shall have the right to increase the Price where it is considered to be an advertisement or publication.
7.6.5	the results of the Service shall address the items and information submitted only and are not to be regarded as representative of any larger population from which the Sample was taken; and	8.5	Where Samples are provided at the premises of the Client, the Client will be responsible for providing a safe system of work for the Company and its employees while providing the Service and the Client shall be responsible for all costs necessarily incurred in discharging this obligation and shall indemnify the Company, its employees, subcontractors and agents in respect of all losses suffered as a result of any breach by the Client hereof.	10.4	The Client hereby undertakes to abide by any regulations imposed by Contracting Authorities, Standard Owners, Accreditation Bodies or the Department of Trade and Industry or other Majesty's Government relating to marks, emblems or logos attached to the Report or any other documents issued under the Service.
7.7	All time limits, liability, or the provision of the Services are estimates and no undertaking is given to carry out the Services or to despatch any Report within any period of time. Time or performance of the Services shall not be of the essence to the Contract.	8.6	In addition to any specific Client obligations set out in the Conditions, where Samples are provided at the premises of the Client, the Client shall:	10.5	The Client shall indemnify the Company against all damages, penalties, costs and expenses to which the Company may become liable as a result of a claim that the use of any data, equipment or other materials supplied by the Client for the performance of the Services involves the infringement of any Intellectual Property Rights of a third party.
7.8	The Company shall not be liable to the Client or be deemed to be in breach of the Contract by reason of any delay in performing, or any failure to perform, any of the Company's obligations in relation to the Services, if the delay or failure was due to any cause beyond the Company's reasonable control. Without prejudice to the generality of the foregoing, causes beyond the Company's reasonable control shall include an Act of God, explosion, adverse weather conditions, flood, earthquake, pest, fire, accident, war or threat of war, acts or threats of terrorism, sabotage, infection, riot, civil disturbance, revolution, acts, rebellions, rebellions, by-laws, regulations or measures of any kind on the part of the government, parliament, or local authority, import or export restrictions or embargoes, strikes, lock-outs or other industrial actions or trade disputes (whether involving employees of the Company or of a third party), difficulties in obtaining raw materials, labour, fuel, parts or machinery, power strike or breakdown in availability.	8.6.1	provide the Company with necessary access to any Client premises;	11	DATA PROTECTION
7.9	Except where the Services are provided to a person who deals as a consumer within the meaning of the Unfair Contract Terms Act 1977, all warranties, conditions or other terms express or implied, statutory, customary or otherwise are excluded to the maximum extent permitted by law.	8.6.2	ensure that any premises provided by the Client for the provision of any part of the Service is suitable for that purpose;	11.1	In exercising its rights and performing its obligations under the Contract the Client, to the extent necessary, shall at all times comply with the Data Protection Act 1998. To the extent that any personal data as defined in the Data Protection Act 1998 is processed by the Client, the Client shall at all times take all appropriate technical and organisational measures against unauthorised or unlawful processing of such personal data and against accidental loss or destruction or damage to, such personal data.
7.10	Where the Services are provided under a consumer transaction, as defined by the Consumer Transactions (Restrictions on Statements) Order 1976 as amended, the statutory rights of the Client shall not be affected by the Conditions.	8.6.3	provide all rental auxiliary and operating materials (including gas, water, electricity, lighting etc) as used by any Client supplied premises; and	11.2	If the Company receives a subject access request from a data subject who is identified in the personal data then the Client shall provide the Company with all such assistance as the Company may reasonably require to enable the Company to thoroughly comply with the subject access request.
7.11	The Client acknowledges that the above provisions of the Condition D are reasonable and reflected in the price which would be higher without those provisions and the Client will accept such risk and/or liability accordingly.	8.6.4	provide the Company with any permits required for the performance of the Service.	12	SUB-CONTRACTING AND ASSIGNMENT
8	OBIGATIONS OF CLIENT			12.1	Unless otherwise restricted by the terms of the Contract and/or obligations under any accreditation or governing approval, the Company shall be entitled, in its absolute discretion, to sub-contract the whole or any part of the Service.
8.1	The Client shall provide with each Sample and/or Service a unique proforma order or unique reference or unique identification with sufficient detail to allow the Company to identify each Sample (if applicable) and enable it to a specific	9	ADDITIONAL COSTS OR LOSSES ARISING FROM THE COMPANY DUE TO THE CLIENT'S FAILURE TO COMPLY WITH THE OBLIGATIONS IN THE CONDITION D SHALL BE BORNE BY THE CLIENT.	12.2	The Company may assign, delegate, license or sub-contract all or any part of its rights or obligations under the Contract.
		9.1	RISK AND PROPERTY IN RELATION TO TESTS	12.3	The Contract is personal to the Client which may not assign, delegate, license, hold on trust or sub-contract all or any of its rights or obligations under the Contract without the Company's prior written consent.
		9.1	Unless stated in the Conditions, Samples are sent and remain at all times (including, without limitation, whilst at the Company's works and during transportation to and from the Company's works) at the Client's risk and the Client shall be responsible for protecting and insuring its own interests under a suitable policy, it being hereby acknowledged by the Client that the charges of the Company do not include insurance.	13	TERMINATION
		9.2	Unless expressly stated to the contrary in the Contract, Samples or stable waste shall be retained for three months from the date of their receipt and then destroyed.	13.1	The Client shall not terminate the Contract without the written consent of the Company which may be subject to such terms, as in the Company's absolute discretion, to compensate the Company for all loss it may suffer as a result of termination.
				13.2	The Company may terminate the Contract and any other contract with the Client forthwith, without prejudice to any other right or remedy available to the Company

and without the Company incurring any liability to the Client, in the following circumstances:

13.2.1 If the Client commits a breach of any terms of the Contract or any other contract with the Company which is incapable of remedy or, if capable of remedy, has not been remedied by the Client in accordance with a written notice from the Company requiring remedy within the period specified in the said notice;

13.2.2 If the Client fails to make payment to the Price within the specified time;

13.2.3 If the Client makes any voluntary arrangement with its creditors or becomes subject to an administration order or being an individual or firm becomes bankrupt or being a company goes into liquidation (whether then for the purpose of amalgamation or reconstruction) or ceases or suspends payment of any of its debts or is unable to pay its debts as they fall due within the meaning of section 123 of the Insolvency Act 1986;

13.2.4 If a receiver or administrator is appointed over any of the property or assets of the Client;

13.2.5 If the Client ceases, or it appears to cease, to carry on business;

13.2.6 If the Company reasonably apprehends that any of the events mentioned at Condition D.10 or D.11 above is about to occur in relation to the Client and notifies the Client accordingly; and

13.2.7 as provided in Condition D.

13.3 Notwithstanding that the Company terminates the Contract, this shall be without prejudice to the accrued rights and remedies of the parties prior to termination of the Contract and any right or remedy under the Conditions, which shall remain in force, including the right to suspend all further Services to be made under any other contract with the Client and in such event the Client shall not be released from any of its obligations to the Company under any other contract and the right for the Company to recover full compensation for its loss under the Contract or any other contract with the Client.

13.4 On termination of the Contract pursuant to Condition D, any indebtedness of the Client to the Company shall become immediately due and payable.

14. CONFIDENTIALITY

14.1 Each party (the "Recipient") shall keep all Confidential Information of the other party (the "Disclosing Party") in the strict confidence. Save for the purposes of fulfilling its obligations under the Contract, the Recipient shall not without the prior written consent of the Disclosing Party, disclose, divulge or grant access to the Confidential Information which it has received and shall not permit any of its employees, agents or other sub-contractors, clients or subcontractors to do so.

14.2 Notwithstanding Condition D, a Recipient may disclose Confidential Information which it has received if:

14.2.1 It is required to do so by any governmental, local government or regulatory authority or by law (whether only to the extent it is strictly required to do so);

14.2.2 It is strictly necessary for the purpose of obtaining professional advice in relation to the Contract;

14.2.3 It was already known to the Recipient prior to the time of disclosure by the Disclosing Party (where the Recipient can prove the same with documentary evidence); or

14.2.4 If information which subsequently becomes public knowledge other than by breach of the Contract by the Recipient.

14.3 In the event of any information request being made to a Recipient pursuant to any Freedom of Information legislation or the Environmental Information Regulations 2004 in respect of any Confidential Information then the Recipient shall notify the Disclosing Party and shall not disclose any information unless a request has been made as to whether the information requested is capable of being withheld from an exemption from disclosure.

14.4 The obligations of the parties under the Condition 14 shall continue to apply without limitation.

15. ANTI-CORRUPTION

15.1 The Client undertakes to comply with all applicable laws, statutes, regulations and codes relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010 (Anti-Corruption Law) and that it shall not do, nor omit to do, any act that will lead to the Company being in breach of any of the Anti-Corruption Laws. The Client shall comply with the Company's Anti-corruption policies as may be notified to the Client and updated from time to time ("Relevant Policies").

15.2 The Client shall promptly report to the Company any request or demand for any undue financial or other advantage of any kind received by the Client in connection with the performance of the Contract.

16. GENERAL

16.1 Back right of remedy of the Company under any Contract is without prejudice to any other right or remedy of the Company under this or any other Contract.

16.2 Nothing in the Conditions shall create or be deemed to create a partnership between the parties.

16.3 The Conditions and the Order form contain all the provisions which the parties have agreed in relation to the subject matter of the Contract and supersede any prior written or oral agreement, representations, proposals, documentation or understandings between the parties. The Client agrees that it has not been induced to enter into the Conditions or the Contract by a statement or promise which they do not contain save that the Conditions shall not exclude any liability which the Company would otherwise have to the Client in respect of any statement or made fraudulently by the Company.

16.4 In the event of one or more of the provisions of the Conditions being held by a competent authority to be invalid, illegal, or unenforceable, in whole or in part, the validity, legality or enforceability of the remaining provisions of the Conditions and the remainder of the provisions in question shall not be affected thereby.

16.5 All notices to be served by one party on the other must be in writing and shall be deemed only delivered or sent on the time or date if delivered personally and only eight hours after posting if posted by first class or airmail pre-paid post in each case to the registered address, if applicable, or if not applicable the last known address of the other party.

16.6 No title or debt by the Company to exercise any right, power or remedy will operate as a waiver of or for will any partial exercise preclude any further exercise of the same or of some other right, power or remedy.

16.7 For the purpose of the Contract (Rights of Third Parties) Act 1999, the Conditions and the Conditions do not and are not intended to give any right or any right to enforce any of its provisions to any person who is not a party to it.

16.8 The Contract shall be governed by and construed in accordance with the Law of England and Wales and the jurisdiction shall be the exclusive jurisdiction of the English courts.

Appendix B – Capability Profile for Smoke Ventilation

There are a number of analysis methods available for determining the smoke ventilation requirement for a building. The main options are shown below.

ZONE MODELS - Zone models are based on experimental data and give simple relationships between the amounts of smoke generated in certain smoke flow scenarios. Within their field of application zone models give very accurate results of smoke flow rates. However, as they are based on experimental data, they can only be used for situations where the layout is similar to that used in the experiments.

FIELD MODELS - Field models are commonly referred to as computational fluid dynamics (CFD). These models break the space to be analysed into a large number of blocks and uses the fundamental equations of fluid and energy dynamics to model smoke flow within a space. As such they are not limited to any particular physical layout and so are more flexible than zone models. However, they can be computationally intensive.

Exova Warringtonfire has extensive experience of the use of both zone and field models for smoke flow within buildings. We have a number of in-house computer programs that assist in both types of analysis.

For cases where zone models are inappropriate, Exova Warringtonfire use a CFD model (FDS) developed by the National Institute of Science and Technology (NIST) in the USA. This is a highly flexible model that can be used to analyse a wide range of different smoke flow issues. A typical output from the model is shown below.

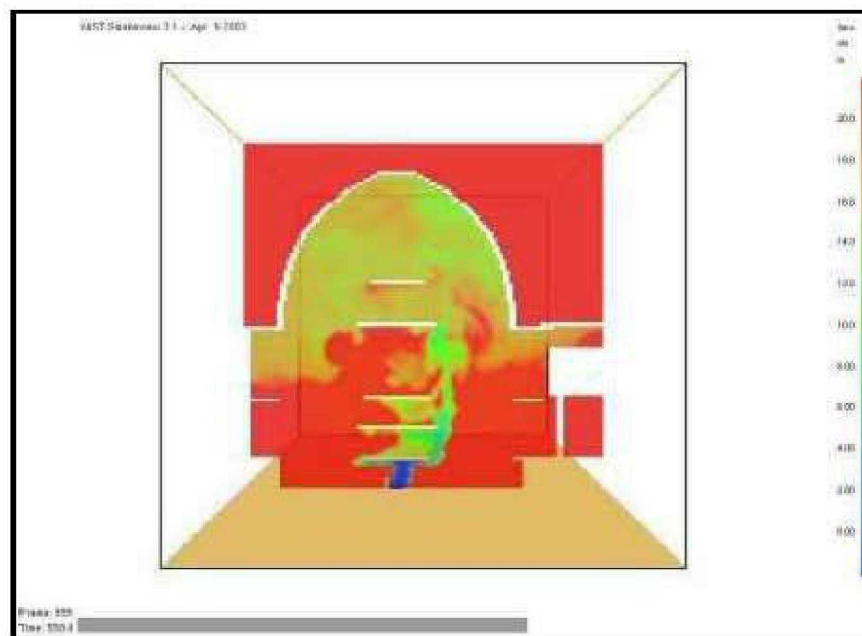


Figure 1: Typical Output from FDS Smoke Flow Model

Appendix C – Capability Profile for Structural Fire Protection

Exova Warringtonfire can carry out analyses of the structural fire protection requirement using a wide variety of methods. The most appropriate method would be selected depending on the particular situation.

EQUIVALENT FIRE RESISTANCE CALCULATIONS - There are methods available to use the compartment size, fire load and ventilation sizes to determine the potential severity of a fire in terms of a period within the standard fire test.

PREDICTION OF FIRE CONDITIONS AND CALCULATION OF HEAT TRANSFER TO STRUCTURE - Exova Warringtonfire have calculation methods to predict the potential fire conditions that may occur in a fire within a particular space. From this, it is then possible to calculate the maximum temperature reached by the structure.

FINITE ELEMENT MODELLING - Exova Warringtonfire use a finite element model (SAFIR) to analyse heat transfer through insulating materials such as concrete or fire protection boarding. A typical output from the model is shown below.

FULL FRAME STRUCTURAL FIRE ENGINEERING - In typical buildings the structural engineers carry out detailed, computer based analyses of the response of the structural frame to loads at ambient temperature. The response of the structure to a fire is then dealt with by providing insulation to the structure based on generic tables such as contained in Approved Document B. No analysis of the response of the fire to the elevated temperatures is carried out. Whilst this is the conventional approach, it leads to illogical fire protection requirements, such as the need to provide the same level of fire protection to all structural elements, irrespective of their actual location. So a column in the middle of a low risk space such as an atrium would have the same level of fire protection as a column in the middle of a store room.

Exova Warringtonfire have separate computer software, and expert understanding of the response of structures to fires, so that we can carry out detailed analyses of the response of the structure to the elevated temperatures achieved in fires. As one simple example, it would be likely to identify that less fire protection is required in areas of low fire risk (such as in an atrium or in a reception area) compared to structure in other areas such as store rooms.

The benefits are often not only in terms of direct cost saving due to reduced fire protection thickness (or in some cases elimination of fire protection requirement), but also there can be a secondary cost saving due to the increased potential to use thin film intumescent, which can modify the construction method (e.g. allow cellular beams to permit services to pass through rather than under the beam).

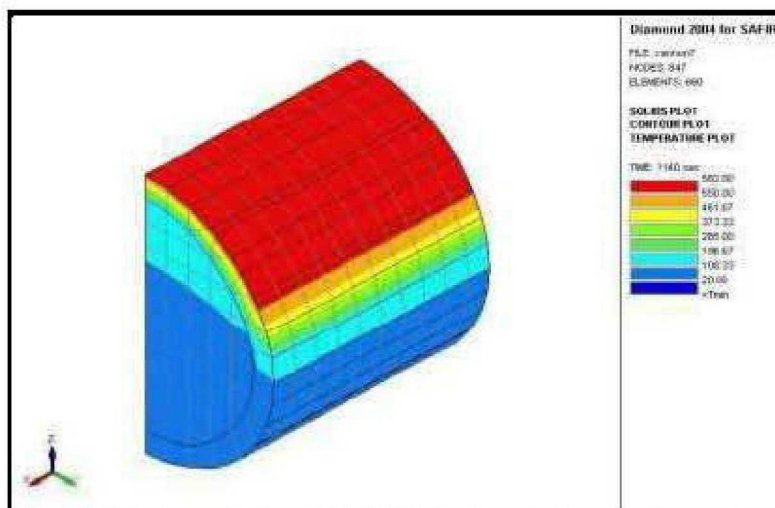


Figure 2: Typical output of SAFIR finite heat analysis computer package

Appendix D – Capability Profile for Evacuation Analyses

Most guidance documents on fire safety recommend standard simple methods for calculating exit capacity (such as standard stair capacity tables). These methods are simple to use, but do not give a real indication of the evacuation.

More complex analyses allow a more accurate picture of the evacuation to be determined. Combining this with smoke flow model, the exits can then be sized to ensure that the occupants have sufficient time to evacuate before conditions become untenable. This can be used either to reduce the sizes of the exits that may be required (as appropriate) or to give more confidence that the exit capacity is sufficient.

There are a number of ways to carry out means of escape analyses for buildings, ranging from relatively simple methods to detailed, computer-based simulations. The main options are discussed below.

CALCULATION OF EVACUATION TIMES - Exova Warringtonfire can carry out fire engineering analyses of the actual time taken to evacuate a building. The time required once the people start to move (known as the 'movement time') is only one component of this analysis because other factors such as the alarm time and the pre-movement time can significantly affect the overall evacuation time. This type of analysis may therefore contain a number of elements such as a calculation of the activation time of the smoke detection system.

COMPUTER SIMULATIONS – Exova Warringtonfire use a computer based evacuation analysis program called EXODUS to model evacuations from a wide range of building designs. One of the benefits of the model is that it provides a more visual demonstration of the predicted evacuation. A typical output from EXODUS is shown below.

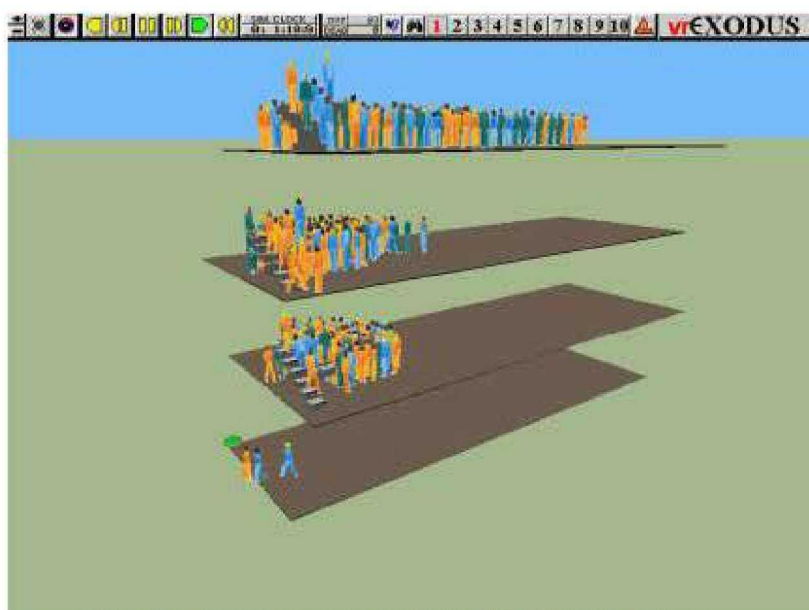


Figure 3: Typical output from EXODUS evacuation model

Appendix E – Capability Profile for Analysis of Radiation

It is often necessary to prevent fire spread between certain areas. This can have implications on the amount of unprotected façade that can be permitted for buildings (to prevent fire spread to an adjacent building) or in other areas such as preventing fire spread between kiosks in shopping centres.

The calculation of radiative heat transfer between two surfaces is computationally intensive because it relies on the three dimensional geometrical relationship between the two surfaces. Standard methods of analysis of this (such as the 'Enclosing Rectangles' method) therefore simplify the calculation into a tabular method. Within their range of application these methods therefore give good results, but they are inflexible, and when there is an unusual situation or complicated façade, the results will tend to be over-conservative.

Exova Warringtonfire has therefore developed an in-house computer program (WFR Rad) that we can use to calculate radiation between a large number of surfaces. These therefore allow analysis of a wide range of geometrical configurations without requiring the over-conservative approach achieved by other methods.

In certain situations this can give a significant advantage over other, more traditional methods, permitting larger amounts of unprotected façade than would otherwise be achieved.

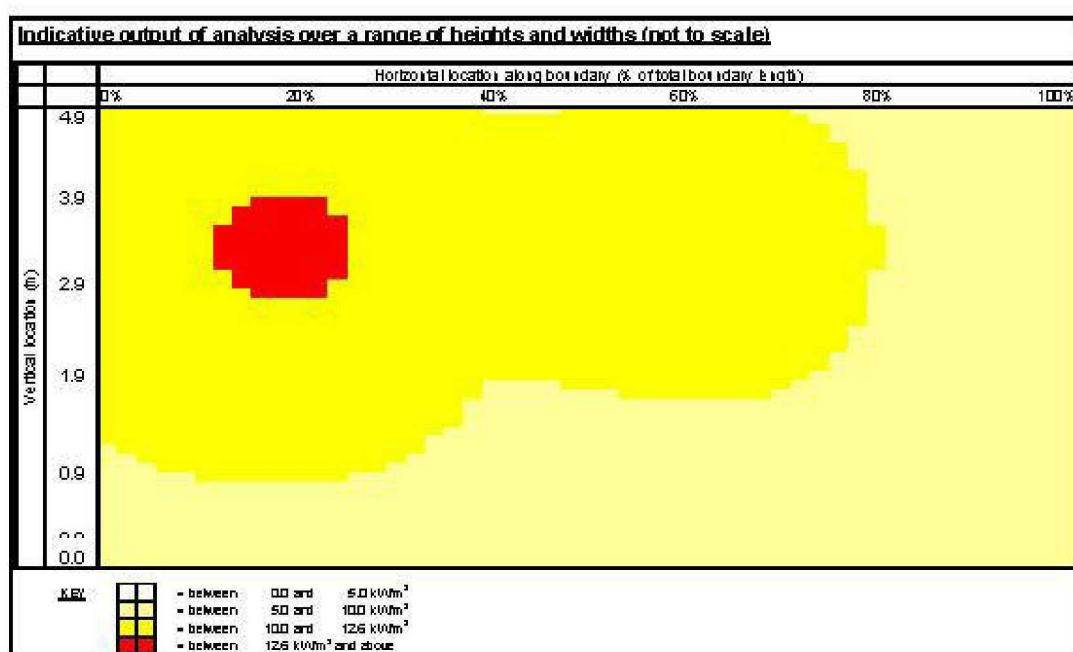


Figure 4: Typical output from WFR Rad computer model

Fee acceptance form

Exova Warringtonfire would like to thank you for accepting our fee proposal and look forward to a highly successful partnership.

In accordance with good practice, please could you complete the form below, giving us formal acceptance of our fee proposal and the details that you would like us to include in our invoices. We also include a template invoice to let you see the details that we would normally expect to include. If there is any specific information or any modifications that you would like to the details in this template, please let us know.

Please complete all the relevant parts of this form, sign it and then fax it back to [REDACTED]

Please note that we reserve the right to carry out a credit check on any new clients. Approval of this form will be taken to be acceptance that there is no objection to this credit check.

Thank you for your assistance.

Division: 87 – Exova Warringtonfire (London) **Contact:** Margaret Treanor

email: margaret.treanor@exova.com **Tel:** 020 7940 9880 **Fax:** [REDACTED]

Fee proposal details:	Job name:	Grenfell Tower	Value^{***}: £2865.00 Fire strategy for existing condition * Where only some fees accepted, delete as appropriate ** Fees are inclusive of expenses N.B. Where applicable, charges for expenses will be invoiced separately to time charges.
	Our document ref no:	MT13545	
	Our job no:	301922	
	Date:	11/06/12	
	Project Manager:	Terry Ashton	
Terms of business are as detailed in the Fee Proposal.			

Quotation accepted on behalf of (i.e. details of Company who will be paying invoices): **Should VAT be charged on invoice?** YES / NO

Company name: **Company Registration No:**

VAT Registration No: **Client Purchase Order No:**

Address:

Postcode: **Tel No:** **Fax No:**

Contact Name: **Email Address:**

Delivery/cc address for invoices if different to above:

Company name:

Address:

Postcode: **Tel No:** **Fax No:**

Contact Name: **Email Address:**

Method of Payment* (BACS, Cheque, Credit Card): **Invoices required by:**
*** Please quote invoice number on all payment transactions** **Post only / Electronic only / Post & Electronic**

I hereby accept the fees of the above described project.

For and on behalf of:

Authorised by: (print name)

(Signature)

Position:

Date:

Exova (UK)
Westerton House
1A Westerton Road
Broxburn
EH2 5AU
United Kingdom

T: [REDACTED]
F: [REDACTED]
E: sales.edging@exova.com (for payment)
W: www.exova.com



Invoice To:

Deliver/CC To:

Sample Client Ltd
Sample House
Warrington
Cheshire
WA1 2DS
United Kingdom

Invoice

Invoice no. 10199062
Invoice date 22/07/10
Our Ref/Job No. 9/00900196.003
Job Description Sample Project
Account Number 9/C1234
Customer Order Ref 1234565

Description	Quantity	Unit Price	Line Value
-------------	----------	------------	------------

Invoice for consultancy services provided on the above subject
in the period 00/00/00 to 00/00/00.

£3000.00	Fixed lump sum fee		
£ 000.20	Cumulative total to date		
£ 0.00	Invoiced to date		
£ 0.20	Amount due		
£2999.80	Fee remaining		0.20

Our VAT no: 353526638

Terms: Payment within 30 days of date of invoice

Payment: full, cleared funds required by 21/08/2010

Remit To: Please make cheques payable to:

Exova (UK) Ltd

Send To: Exova (UK) Ltd, Westerton House,

1A Westerton Road, Broxburn EH52 5AU

Sub-total 0.20

VAT total 0.04

Total GBP 0.24

Please pay in: UK Sterling

Page 1

Registered Office: Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian EH26 8PL United Kingdom. Reg No. SC70423

Window Manufacturer	Kawneer	SAPA	Velfac
Contact	Alan Bagshaw e - alan.bagshaw@alcoa.com m - 07766 027756	Danny Sullivan e - danny.sullivan@sapagroup.com m - 07831 611785	David Gladwin e - dg@VELFAC.CO.UK m - 07785 702124
System Description	AA8110 Horizontal Sliding Window Perforated Glazing Gasket, Stainless steel track with adjustable wheels, Double or single sliding options, Self regulation ventilator in line with wind pressure, Dual colour option, Window when open does not project into the building, Glazing up to 33mm. Suitable for specialist and safety glazing and interstitial blinds	Dualframe SI 75 Tilt/Turn BS7950 accredited - Secured by Design External beading requires no additional components. Highest class weather performance for water tightness, air permeability and wind resistance	Reversible - Modern Velfac 200 Seal can be rotated up to 170° A safety restrictor is triggered when the window is opened to 5cm.
Hardware Option (restrictor)	AA3110 Slider. The shoot bolts which hold / lock the window in the fully closed position do the same job in the restricted position. The restrictors are located at the top and bottom corner of the opening light. Option of permanent restrictor at 125mm. Restrictor disabled key, lock located near centre of vent.	The handle is key operated and must be used to access the turn mode. The actual restrictor is located at the top of the window. Handles are of the safety locking type which means that the turn mode can be locked off to unauthorised users. Handles are best located near the centre of the vent. Standard windows come in a white colour. Grey can be achieved by applying paint. Internal and external colour can be separate colours.	Optional accessories include handles with child locks and cylinder locks. Restrictor limits the opening of the seal to 100mm. It is possible to disengage the restrictor by turning the lock through 90° with a 5mm hexagon key. The lock must always be re-engaged after use.
Colour	Colour is applied as a powder coated finish to the aluminium frames. To maintain the warranty, regular cleaning is required. (12months). 130 standard colours and 31 metallic colours available.		Different finishes can be applied. 1. a hard-wearing Polyester powder coat (RAL colours), 2. metallic finish. Internally there are further choices
Window Size available		600mm x 900mm standard size. Will be in London next Tuesday with reversible and tilt turn samples if Purpose made samples require 6-8 weeks. Factory we require to see them in operation. Production of a specific sized window would take a couple of weeks.	450mm x 600mm standard size can be delivered. Is shut for the last 2 weeks in July.
Glazing Thickness	Up to 33mm can be incorporated.		
Self Cleaning Glass	Glass is purchased by the fabricators of their systems. Self cleaning glass products can be glazed into their systems.	Self cleaning glass can be used with their window systems.	Purchases around £200 million of glass annually. Not convinced by self cleaning glass. It needs correct amount of rain, wind and orientation. The film on the glass can react with the silicone gaskets.
Trickle Vent	Integrated self regulation ventilator Max vent weight is 200kg.	Flush vents and flat profiles can be combined.	
U-Value	Capable of achieving 1.7W/m² U-values based on CEN size windows (1200mm x 1480mm) using 1.1 W/m² K glazing with Swisspace 1.4 U Value can be achieved using warm edge technology in double glazed units.	1.6 U Value can be achieved using standard spacer in double glazed units. 1.4 U Value can be achieved using warm edge technology in double glazed units.	
Cost	Sliding = £375.00 to £400.00/eq m (£30 restrictors per window) Top Hung = £325.00 to £350.00/eq m Horizontal Pivot = £400.00 to £425.00/eq m Tilt and Turn = £360.00 to £375.00/eq m	Provided a rough comparison: To go from casement window to : Tilt/Turn + 10%, Reversible +18%, Pivot +49% Horizontal sliding window +186% (double size)	
etc.			

SEA00014274_0059

GRENFELL TOWER – OVERHEATING

1 Introduction

This report will investigate the ability of three different types of window configuration at dealing with overheating. The three window types that will be looked at are central pivot, tilt and turn and horizontal sliding. Early modelling indicates that opening windows with 100 mm restrictors will not be sufficient to reduce the overheating problem alone. Further solar control measures will then be applied in the following order to address the existing overheating problem:

- ✘ Solar control glass
- ✘ Areas of window that incorporate a safety louvre or weather louvre to allow rapid purge ventilation in the summer.

Building Regulations – Refurbishment

Building regulations Approved Document Part F, section 7.1 states that:

“When building work is carried out on an existing building, the work should comply with the applicable requirements of schedule 1 of the Building Regulations, and the rest of the building should not be made less satisfactory in relation to the requirements than before the work was carried out...”

Building Regulations – New Build

The Building Regulations (Part L1A 2010) describe how overheating to apartments must be limited. The method of demonstrating compliance is by SAP (Standard Assessment Procedure) calculation, which includes a component to calculate the risk of overheating. SAP does this by assigning each flat a “likelihood of high internal temperatures” score of slight, medium or high. This assessment method was carried out in the early design phase which identified that the one bedroom flats had a high likelihood of overheating. SAP is a static calculation that does not take into account real world weather data.

This report will take the next step and use a dynamic thermal model of the tower block to work out the likely temperatures in the flats on an hourly basis. This data will then be compared to the following assessment criteria. Further details of the dynamic thermal model can be found in section 4 of this report.

The following criteria is taken from the CIBSEA guide and is also referenced in the Draft Climate Change Adaptation Strategy for London.

Living Room: 28°C shall not be exceeded for more than 1% of occupied hours (09:00 to 22:00)

Bedroom: 26°C shall not be exceeded for more than 1% of occupied hours (22:00 to 09:00)

1% of the occupied hours are therefore 44 hours per year for both the living room and the bedroom.

Planning Policy – Regional (The London Plan)

The London Plan (July 2011) states ‘Major development proposals should demonstrate how the design, materials, construction and operation of the development would minimise overheating and also meet its cooling needs. New development in London should also be designed to avoid the need for energy intensive air conditioning systems as much as possible.’

Recommended Approach for Grenfell Tower

To comply with the Part F requirement we need only to ensure that the existing overheating problem does not become any worse than it currently is. However we are aware that the summertime temperatures in Grenfell Tower cause many residents discomfort. These conditions do not provide a sensible target for overheating. As such the overheating of the flats at Grenfell Tower will be assessed against both the refurbishment criteria and the new build criteria using a dynamic thermal model to predict the number of hours that rooms will hotter than their target temperature focusing on the temperatures in the living rooms and the bedrooms as this is what the legislation is concerned with.

We would also recommend that the ventilation strategy is designed in such a way as to continue to provide adequate summertime ventilation for temperature control when future climate change is taken into consideration.

2 Windows

This report investigates the suitability for the following three types of window for controlling overheating:

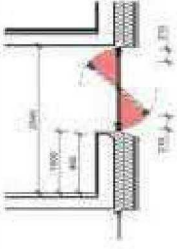
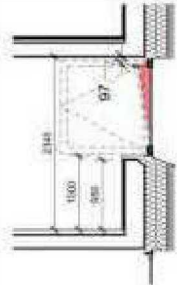
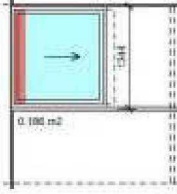
Type	Section/Elevation	Free area (100 mm max opening)	Pros	Cons
Central Pivot		23 %	Provides both high and low level ventilation simultaneously. The advantageous effect of this is not fully taken into account in the computer model. Favoured CDM option as the pivot always provides a central barrier to falling from height and does not require tenants to lean out of the window to clean.	Most expensive option.
Tilt & Turn		13 %	Higher free area than sliding window. Cleanable from the inside.	Not as much free area as the pivot window. When in cleaning mode the window opens fully to reveal an unrestricted aperture in the elevation which is potentially dangerous.
Sliding		10 %	Window does not protrude into the flat when open.	Low free area when restricted. Cleaning will require some degree of leaning out of the window. Difficult to securely restrict in a neat and cost effective way.

Table 1 – Window Types

3 Window and Purge Arrangement

The window arrangement used in the computer model was based on the window dimensions given on the drawings 127-SK023-Rev00 and 1279-SK024-Rev00 “option 3 – Casement (additional ventilation panel)”.

As shown in figures 2 and 3, the purge ventilator should take the form of a side hung inward opening casement window that can open a full 90 degrees. The louvre on the outside of the vent panel should be made from fins or plates placed as far apart as possible while still complying with the safety requirements. Keeping the fins spread apart will serve two purposes; firstly it will maximise the free area of the ventilation panel and secondly it will allow the window to provide a view out and some additional daylight. If the louvre was to be a full weather louvre (fully opaque) then the resulting window area would be below what is currently provided in the flats. This would make the rooms look noticeably dimmer to the tenants. Figures 4 and 5 show a comparison of a full weather louvre and finned solution.

The orientation of the purge ventilation panels in the model have been moved compared to 127-SK023-Rev00 where possible to get the purge vent panel into the corner of each room. This is not necessary for ventilation purposes but may make the opening pane behind the louvre less intrusive (see figures 6, 7 and 8).

Type	Width	Height
Window (blue)	1100	Maximum possible while incorporating an acoustic trickle ventilator in the window frame head.
Window Ventilation Panel (pink)	400	

Table 2 – Window and ventilator dimensions.

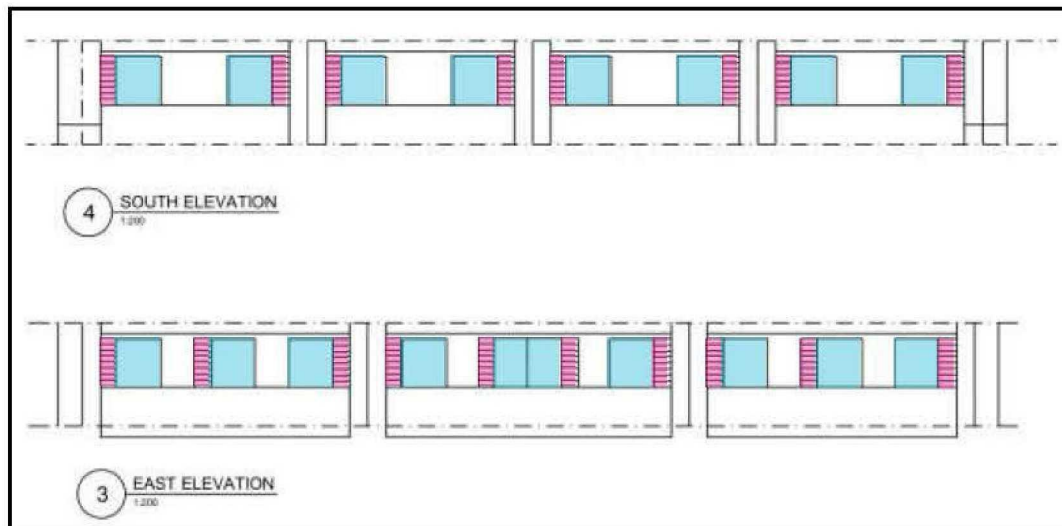


Figure 1 – Modelled elevations for new window types

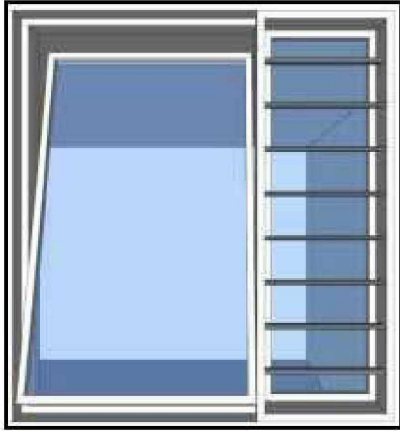


Figure 2 Elevation of Pivot Window and Purge Ventilation Window

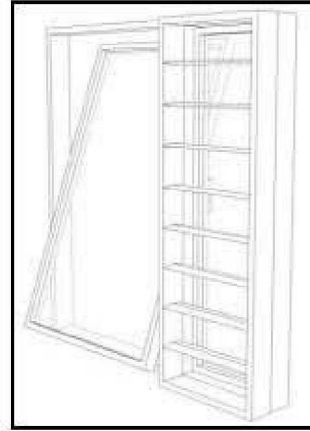


Figure 3 View of Purge Vent Safety Louvre and Pivot Window.



Figure 4 –Purge ventilators with glazing and widely spaced fins for safety.



Figure 5 – Purge ventilators with tightly spaced weather louvres. Reduction of window area will make the flats noticeably darker compared to the current window arrangement.

Purge Ventilation Internal Views

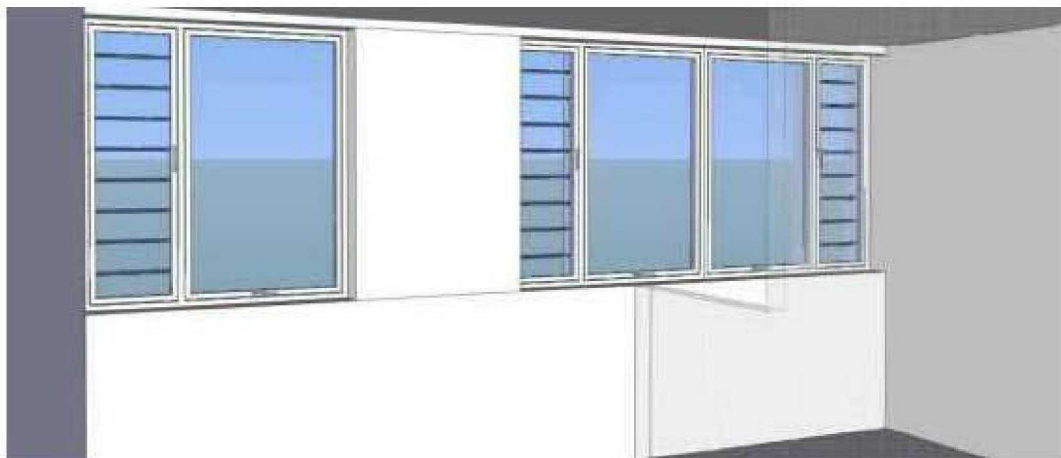


Figure 6 – Winter; windows and purge ventilation closed, view out maintained through purge windows



Figure 7 – Pivot windows open, restricted to 100 mm clear opening



Figure 8 – Summer; purge vents open for peak summer cooling, no restrictors required to purge windows as louvers provide restricted openings.

Solar Control

Solar control glass works by providing a coating on the inside of the external pane of glass as shown below in figure 9. This reflects heat while allowing light to pass, with the aim being to let as much visible light pass to avoid noticeable decreases in light levels while reducing the amount of heat from entering the internal space.

The G-value for glazing provides an indication of how much shading the solar control glass will provide when compared to no glazing (hole in a wall). For the purposes of this study we have selected a solar control glass with a G-value of 0.4. This level of solar control should be achievable without having to resort to heavily tinted glazing

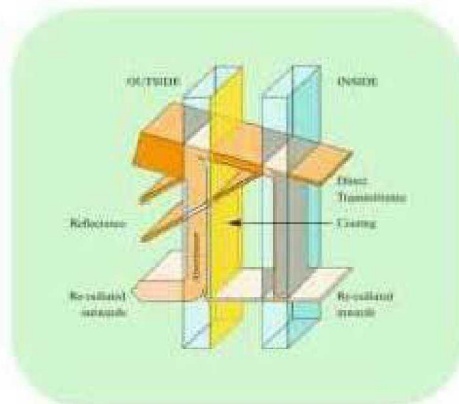


Figure 9 – Diagram showing the principals of solar control glass.

4 Methods

The dynamic thermal modelling software used is called IES Virtual Environment. A series of models have been run in IES to simulate the effects of the various window types on overheating and to assess the requirement for further solar control measures. Descriptions of these models are listed in table 3. IES takes into account varying external temperatures, sun light, cloud cover and wind speed over a period of a year to model the internal temperatures of all the spaces within the flats.

The computer model simulates the internal temperatures over a full year of weather. The weather file chosen for this analysis was the London Heathrow design summer year (DSY). This file is a statistically hot summer comprised of weather data over a twenty year period.

Due to climate change it is predicted that the weather in London (as in the rest of the UK) is going to get hotter in the near future. The DSY does not take this warming into account, and with instances of temperatures above 28 °C and 26 °C expected to increase this should be kept in mind when viewing the results of the simulations.

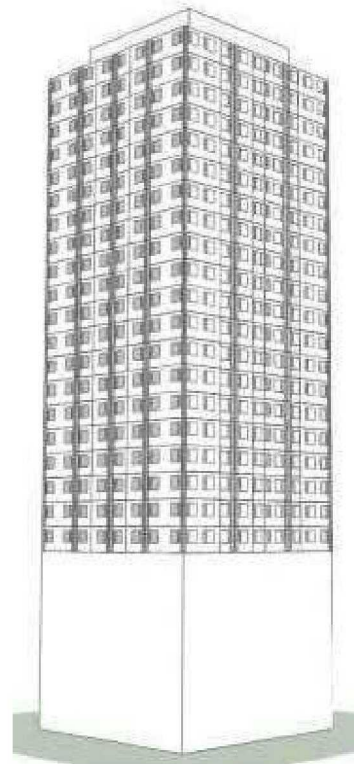


Figure 10 – Grenfell Tower Dynamic Thermal Model (new window arrangement as per models C, D & E)

Thermal Model Input data

Data entered into the Model:

- ✘ Orientation, height, area and volume.
- ✘ Window type, glazing solar factor, size and orientation (including any external shading),
- ✘ Building fabric details (floor, wall, roof U-value and admittance),
- ✘ Air-tightness, ventilation rate etc.

The following sensible internal heat gains were added to each apartment:

- ✘ Uncontrolled heating (7.4 W/m² Existing, 1.8 W/m² Refurbished)
- ✘ People (90 W per person, 17.5 m² per person)
- ✘ Lighting (1.3 W/m² based on a mix of energy saving and non-energy saving lighting, lighting only on when the natural light level in the flats falls below 300 lux)
- ✘ Electrical equipment (5 W/m²)

Also:

- ✘ Air Infiltration rate (see table 3)
- ✘ Mechanical extract to bathrooms and WCs at 15 l/s.
- ✘ Glass solar gain g-value (see table 3)
- ✘ The shading effect of the buildings surrounding the site was not included.
- ✘ No internal blinds were included.

Model Name	Description	Infiltration (l/s/fac) ¹	Insulation	Window Type	Window G-value	Purge Ventilation
A	Current	8	Old	Sliding (old)	0.7	No
B	Improved Heating System	8	Old	Sliding (old)	0.7	No
C1	Pivot windows with acoustic trickle ^{***}	4 ^{**}	New	Pivot	0.7	No
C2	Tilt and Turn windows with acoustic trickle ^{***}	4 ^{**}	New	Tilt & Turn	0.7	No
C3	Horizontal Sliding windows with acoustic trickle ^{***}	4 ^{**}	New	Sliding	0.7	No
D1	Pivot with Solar Control	4 ^{**}	New	Pivot	0.4	No
D2	Tilt and Turn with Solar Control	4 ^{**}	New	Tilt & Turn	0.4	No
D3	Horizontal Sliding with Solar Control	4 ^{**}	New	Sliding	0.4	No
E1	Pivot with Purge	4 ^{**}	New	Pivot	0.4	Yes
E2	Tilt and Turn with Purge	4 ^{**}	New	Tilt & Turn	0.4	Yes
E3	Horizontal Sliding with Purge	4 ^{**}	New	Sliding	0.4	Yes

Table 3 – Computer simulations

¹ The unit l/s/fac is the flow rate in litres per second through each m² of external façade (wall, ceiling, floor) at a wind pressure of 50 Pa. 50 Pa is chosen by Building Regulations to represent a typical wind pressure on the building.

^{**} The refurbishment works will result in increased air tightness. There will be less air passing though the flats in the refurbished flats compared to the existing flats when the windows are closed to remove moisture and cooking odours. We recommend that kitchen extract ventilation is added to flats that do not already have kitchen extract to deal with the build-up of cooking smells and moisture.

^{***} Controllable Acoustic trickle ventilators should be added to as many windows as possible to maximise the potential for acoustically attenuated ventilation while the windows are closed. Adding the largest acoustic ventilator possible to each window will therefore minimise the amount of time the windows need to be open for cooling. Part F of the Building Regulations state that the minimum required background ventilation for the 1-bed flats will be 35,000 mm² of free area and 50,000 mm² free area for the 2-bed flats.

5 Results

Full results for each flat type are listed in Appendix A of this report; red cells indicate where a room does not comply with the overheating criteria and conversely green cells show where rooms meet the new build overheating criteria.

The single bedroom flats generally perform worse than the two bedroom flats. The two bedroom flats are split around two sides of the building which facilitates cross ventilation, helping to cool these flats more effectively. The East-facing flats perform slightly worse than the West-facing due to an increased amount of cloud cover later in the day which slightly reduces the amount of solar gain.

The following graphs are based on the East-facing single bedroom flat as this flat represents the worst overheating case.

The results are valid all flat levels in Grenfell Towers. Only the top floor would vary slightly due to the different boundary condition of the roof. As the majority of the roof is covered with the roof top plant room the difference in results for the top floor will be minimal.

The black line on figures 11 and 12 represent the threshold for complying with overheating criteria for a new build flat as stated in section 1 of this report.

The red line on figures 11 and 21 represent the upper limit to comply with the refurbishment requirement to not make the overheating situation any worse than it currently is. The existing flats were modelled using the same heat gain parameters as the refurbished case but with the existing window geometry, insulation and a best guess at the air leakage rate.

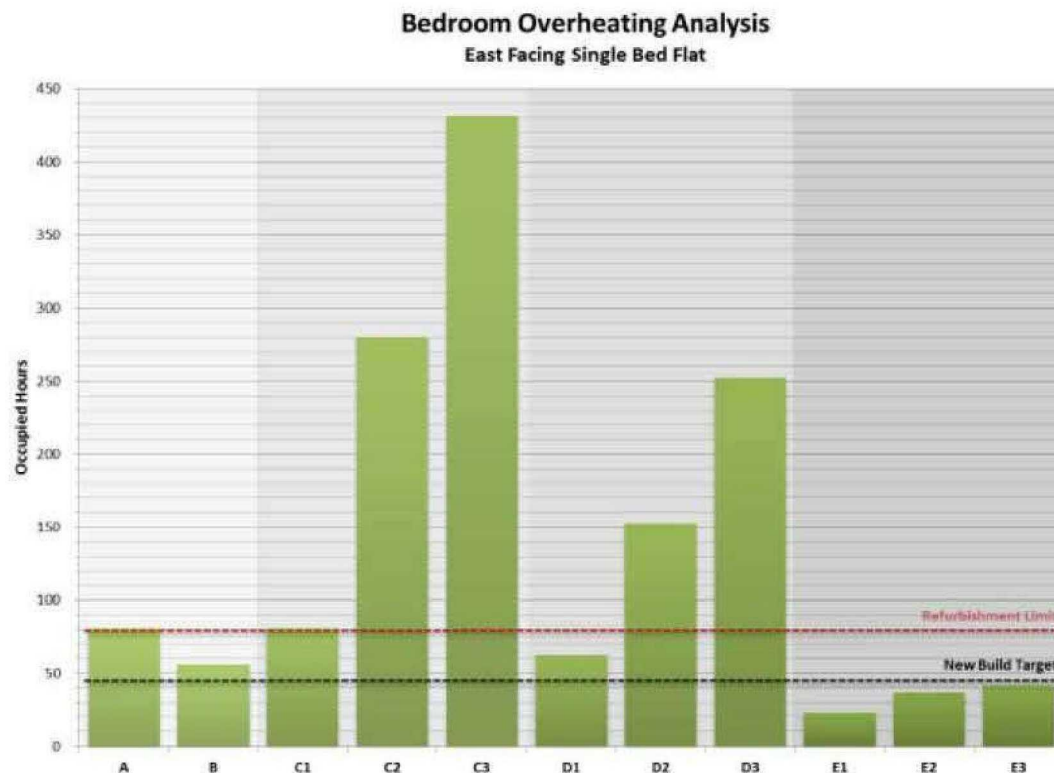


Figure 11 – Overheating analysis for the East-facing single bed flat bedroom.

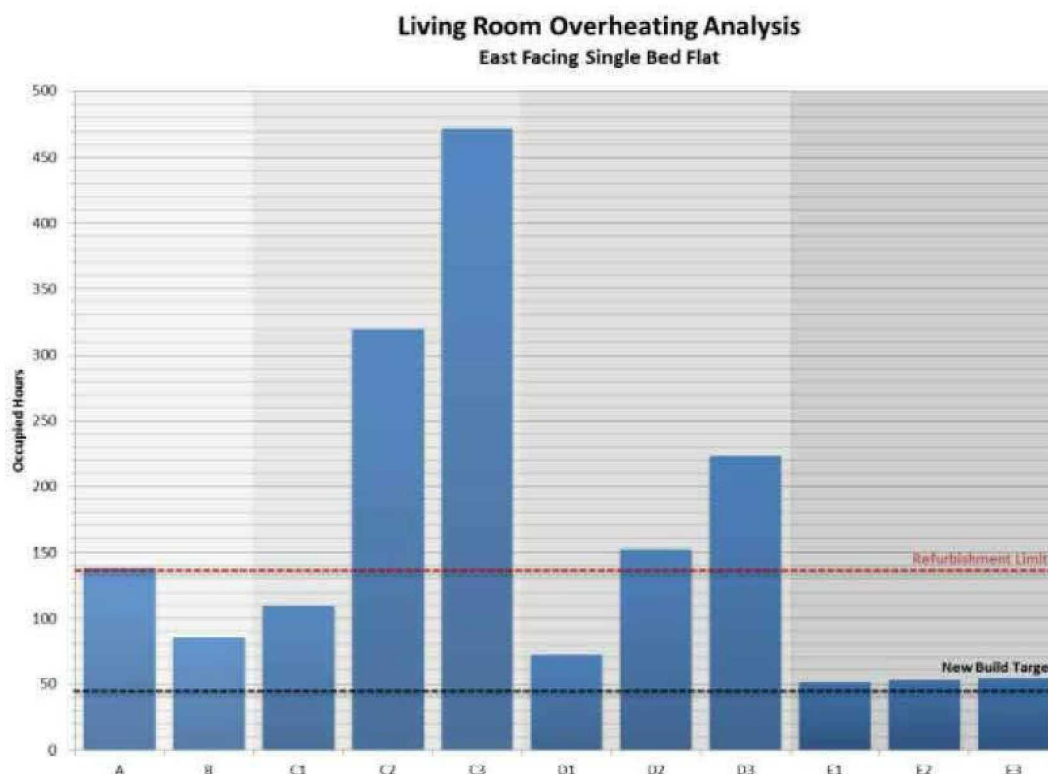


Figure 12 – Overheating results for the single bed flat living room.

6 Conclusions

Model B

Reducing/eliminating the uncontrolled heat loss through the installation of the proposed new system is shown in model B. This has the effect of reducing but not solving the overheating issues at Grenfell Tower.

New windows and Insulation (C Series)

Series C shows the effect on overheating that improving the insulation and airtightness of the dwelling while limiting the openings of the new windows to 100 mm. The improved insulation means that the flats cannot lose heat during the night and the improved air tightness means the building cannot lose heat through being 'leaky'. The model shown that Tilt and Turn (C2) and Sliding (C3) fall short of having enough free area to keep overheating under control.

It should be noted that without the following solar control glass and/or improved ventilation there is a real possibility of making the overheating situation at Grenfell Tower worse than it currently is.

Solar Control

Introducing solar control to the D series models reduces the occurrences of overheating dramatically in D2 & D3. However, on its own solar control is not capable of reducing the overheating below the new build target for any window option. Reducing the G-value below the level of 0.4 would require heavy tinting to the glazing. This would have aesthetic implications and would likely reduce the daylight in the flats to an unacceptable level.

If purge ventilation was not going to be installed then the author could only recommend the central pivot windows be used.

Purge Ventilators

The new build target is not achieved for the living room area in either option E1, E2 and E3. This is because the living room is assessed between 09:00 and 22:00 when the external air temperature is at its highest. Opening the windows when the external air temperature is above the target temperature of 28 °C can only heat the living room, not cool it. Therefore adding openable area will not improve the overheating any further.

To further improve the situation we would need to include measures such as exposing thermal mass or active cooling which are beyond the scope of this refurbishment. Looking at internal temperatures alone does not tell the full story of thermal comfort. The velocity of air flow within a room will also have an impact on how comfortable a room feels; this is because air movement helps to encourage evaporation from the skin. The greater the rate of evaporation that takes place from the surface of your skin the cooler you will feel. The models are based on the free that each window can achieve but do not take into account how the design of the window will encourage air flow. To get the maximum amount of air flow in a space the ideal situation is to split the total opening area into equal areas and put one area as low as possible and one as high as possible. The height difference between these two areas of opening will help to drive air flow due to the temperature difference of the air at high level and the air at low level. The central pivot window is the only window design that places the majority of the opening area at high and low level, therefore the Pivot window will encourage the highest air exchange velocity of all the window types modelled.

In light of the likely future increase in temperatures due to climate change it is our view that the Pivot Window with solar control glass and purge ventilators (E1) should be implemented as this option achieves the lowest number of hours above 26/28 °C and has the most effective design to encourage air movement.

APPENDIX A – DYNAMIC THERMAL SIMULATION RESULTS

Living Room (occupied 09:00 to 22:00)

4380

Bed Room (occupied 22:00 to 09:00)

4380

A Existing

	28 Living Room	26 Bed Room
North West	71	42
North East	70	40
East	139	81
South East	85	54
South West	100	58
West	144	84

	Above 28	Above 26
North West	1.0%	0.9%
North East	1.0%	0.9%
East	3.2%	1.8%
South East	1.9%	1.2%
South West	2.3%	1.3%
West	3.3%	1.9%

B Improved Heating System

	28 Living Room	26 Bed Room
North West	63	24
North East	62	24
East	86	56
South East	77	40
South West	86	42
West	88	35

	Above 28	Above 26
North West	1.4%	0.5%
North East	1.4%	0.5%
East	2.0%	1.3%
South East	1.8%	0.9%
South West	2.0%	0.9%
West	2.0%	0.8%

The following simulations all have new external insulation, new windows and improved air tightness.

C1 Pivot Windows and Trickle Ventilation

	28 Living Room	26 Bed Room
North West	62	57
North East	61	55
East	110	81
South East	71	69
South West	75	70
West	116	82

	Above 28	Above 26
North West	1.4%	1.3%
North East	1.4%	1.2%
East	2.5%	1.8%
South East	1.6%	1.6%
South West	1.7%	1.0%
West	2.0%	1.9%

C2 Tilt and Turn Windows and Trickle Ventilation

	28 Living Room	26 Bed Room
North West	72	120
North East	72	121
East	319	280
South East	92	167
South West	104	166
West	299	281

	Above 28	Above 26
North West	1.6%	2.7%
North East	1.6%	2.8%
East	7.9%	6.4%
South East	2.1%	3.8%
South West	2.4%	3.8%
West	6.8%	6.4%

C3 Horizontal Sliding Windows and Trickle Ventilation

	28 Living Room	26 Bed Room
North West	81	193
North East	83	210
East	472	432
South East	108	276
South West	123	278
West	451	437

	Above 28	Above 26
North West	1.8%	4.4%
North East	1.9%	4.8%
East	10.8%	9.9%
South East	2.5%	6.3%
South West	2.8%	6.9%
West	10.3%	10.0%

D1 Pivot with Solar Control

D1_Pivot with Solar Control

	28 Living Room	26 Bed Room
North West	51	43
North East	53	43
East	72	63
South East	57	48
South West	59	48
West	67	64

	Above 28	Above 26
North West	1.2%	1.0%
North East	1.2%	1.0%
East	1.6%	1.4%
South East	1.3%	1.1%
South West	1.3%	1.1%
West	1.5%	1.4%

D2_Tilt and Turn with Solar Control

	28 Living Room	26 Bed Room
North West	52	83
North East	55	83
East	153	153
South East	62	94
South West	66	92
West	137	146

	Above 28	Above 26
North West	1.2%	1.9%
North East	1.2%	1.9%
East	9.5%	9.5%
South East	1.4%	2.1%
South West	1.5%	2.1%
West	3.1%	3.3%

D3_Horizontal Sliding with Solar Control

	28 Living Room	26 Bed Room
North West	53	116
North East	57	126
East	223	253
South East	65	143
South West	69	144
West	217	251

	Above 28	Above 26
North West	1.2%	2.6%
North East	1.3%	2.7%
East	5.1%	5.8%
South East	1.5%	3.4%
South West	1.6%	3.3%
West	4.9%	5.7%

E1_Pivot with Purge Ventilation

	28 Living Room	26 Bed Room
North West	55	18
North East	55	17
East	51	23
South East	59	20
South West	58	20
West	48	23

	Above 28	Above 26
North West	1.2%	0.4%
North East	1.3%	0.4%
East	1.2%	0.5%
South East	1.3%	0.5%
South West	1.3%	0.4%
West	1.1%	0.5%

E2_Tilt and Turn with Purge Ventilation

	28 Living Room	26 Bed Room
North West	51	31
North East	54	29
East	53	37
South East	58	33
South West	58	34
West	50	38

	Above 28	Above 26
North West	1.2%	0.7%
North East	1.2%	0.7%
East	1.2%	0.8%
South East	1.3%	0.7%
South West	1.3%	0.8%
West	1.1%	0.9%

E3_Horizontal Sliding with Purge Ventilation

	28 Living Room	26 Bed Room
North West	51	35
North East	54	34
East	54	42
South East	58	38
South West	59	38
West	50	40

	Above 28	Above 26
North West	1.2%	0.8%
North East	1.2%	0.8%
East	1.2%	0.9%
South East	1.3%	0.9%
South West	1.3%	0.9%
West	1.1%	0.9%

Existing Fire Safety Strategy Grenfell Tower Regeneration Project, London



Draft

A Report to: Kensington & Chelsea TMO
Project No: 381927
Document Reference: JVA3186R

Date: 16/08/12
Issue No: D01
Page: 1

**Testing
Advising
Assuring**

Revision History

Issue No : D01	Issue Date : 16/08/12
Reason for Revision: First Draft	

Prepared by:	Cate Cooney Senior Consultant (For and on behalf of Exova Warringtonfire)
Reviewed by:	Dr Clare Barker Principal Consultant (For and on behalf of Exova Warringtonfire)

Validity

This report is formulated on the basis of the information and experience available at the time of preparation. It is applicable to the above-mentioned project only in accordance with the client's instructions. It is only valid provided no other modifications are made other than those for which a formal opinion has been sought and given by Exova Warringtonfire.

Document No.: JW3186R	Page No.: 2 of 16
Project No: 301922	Issue Date: 16/08/12
Client: Kensington & Chelsea TMO	Issue No.: D01
E-E-QU-FT-CS-WR-F-1007(Iss 04)	

Contents

1	INTRODUCTION	5
2	PURPOSE GROUP	7
3	B1 MEANS OF WARNING AND ESCAPE	8
3.1	Requirement.....	8
3.2	Means Of Warning.....	8
3.2.1	Levels 1 and 2.....	8
3.2.2	Level 3.....	8
3.2.3	Level 4.....	8
3.2.4	Individual Apartments.....	8
3.2.5	Common Areas.....	8
3.3	Means Of Escape.....	9
3.3.1	Evacuation principals – Levels 1, 2 and 4.....	9
3.3.2	Internal layouts – Levels 1 and 2.....	9
3.3.3	Internal layouts – Level 4.....	9
3.3.4	Evacuation principals – Residential.....	10
3.3.5	Internal layout - Apartments.....	10
3.3.6	Common Areas.....	10
3.4	Smoke Ventilation.....	10
4	B2 INTERNAL FIRE SPREAD (LININGS)	12
4.1	Requirement.....	12
5	B3 INTERNAL FIRE SPREAD (STRUCTURE).....	13
5.1	Requirement B3 (1) Load-bearing Elements.....	13
5.1.1	Protected Shafts.....	13
5.1.2	Areas of Special Fire Hazard	13
5.1.3	Fire Stopping Within Concealed Spaces	13
6	B4 – EXTERNAL FIRE SPREAD.....	14
6.1	General Philosophy.....	14
6.2	External Wall Construction.....	14
6.3	Space Separation	14
7	REQUIREMENT B5 – ACCESS AND FACILITIES FOR THE FIRE SERVICE	15
7.1	Provision Of Fire Mains	15
7.2	Vehicle Access and Hydrants	15
7.3	Fire Fighting Shafts.....	15
7.4	Venting Of Smoke And Heat From Basements	15

8	CONCLUSIONS & RECOMMENDATIONS	16
---	-------------------------------------	----

Draft

Document No.:	JW3186R	Page No.:	4 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
		E-E-QU-FT-CS-WR-F-1007(Iss 04)	

1 Introduction

Grenfell Tower is a 24 storey tower block in Kensington, West London built in the 1970s.

The building contains a basement level, and a mixture of uses to the spaces on the first 4 storeys including a boxing club, offices and nursery with residential apartments above. The building contains a total of 120 apartments, having 6 apartments on each floor from level 5 to 24 with rooftop plant.

This existing fire safety strategy covers the fire precautions in place in the existing building as built in the 1970s, drawn up from information gathered through a non invasive site survey, a desktop study of the original plans from the microfiche archive and the current fire risk assessment.

It is expected and therefore assumed that the existing building has been built to the prevailing standards of the day, thought originally to be the Building Regulations 1965 which did little more than require the structure of the building to have fire resistance (the design of the building predates the guidance of the 1971 Code of Practice CP3). The London Building Acts (Amendment) Act 1939 however required features to be included in the building which are very comparable with today's standards in terms of fire fighter access. The date of later developments is unknown.

It is assumed that the various provisions required by of the above legislation have been maintained since the building was constructed and subsequent amendments have been carried out with the approval of the regulating authority of the day.

As brief description of the layout of the building is detailed below.

LEVEL 1 / GROUND

The building can be entered at ground level on the South and North elevations, where access is available to the community areas / boxing. Separated at this level are external entries to the base of the refuse chute, substation, basement boiler house and an entry to the lifts serving the residential floors. The single stair to the residential floors does not connect with the basement and is separated from the ground level accommodation (to be confirmed). In the main core, only the lifts only serve this level, the walkway level and the residential levels. The residential stair base is found at the walkway level.

LEVEL 2 / MEZZANINE

The mezzanine level is accessed from 2 No stairs from the ground level. The accommodation to the North of the core looks into the ground level boxing club area. All accommodation on the ground and mezzanine levels are assumed to be under the same management. Escape is available in alternative directions via the 2 No stairs; an internal escape and an external stair which also serves other floor levels above the ground level.

LEVEL 3 / WALKWAY / DECK

The walkway level is located above the mezzanine level and is mainly open sided providing an external environment to areas around the main stair core, where the lobby is accessible from opposing elevations. A small amount of accommodation has been added to this level and an additional external stair has been added to serve the accommodation. This is assumed to be separated from the fire fighting lobby with 2 hour construction and 1 hour fire doors. This is the main entrance level to the residential floors and the stair serving all floors is available from this level. Raised walkways from the surrounding approaches lead onto the open pedestrian deck, which is also served by the external stair from the ground floor.

LEVEL 4 / OFFICES / FORMER DOCTORS SURGERY

Above the walkway level, there is a level which is currently used as offices, but was originally intended as a doctors surgery. There is access in the lobby area of this level into the service risers contained in the main core via a cleaners cupboard and store which contains the rising services and refuse chute. This

Document No.:	JW3186R	Page No.:	5 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
		E-E-QU-FT-CS-WR-F-1007(Iss 04)	

level appears to have undergone little alteration from the original design of the floor.

LEVELS 5 – 23 / RESIDENTIAL FLOORS

The residential accommodation starts at level 5, above the offices / doctors and continues to the top storey / level 23. Each level contains 6 No flats created around an entrance hallway. Each flat opens into the common single stair core which contains the stair, 2 No lifts in a common shaft, risers and refuse room, where the refuse chute is located. The chute communicates directly with the ground floor refuse chamber, which appears to form its own independent protected shaft.

LEVEL 24 / PLANT

The rooftop plant room is positioned on the roof deck and is covered by a lightweight weatherproof housing. The plant housing covers the central area with an external walkway created between face of the building and the plant room wall for external access to the roof, and this is continuous around the perimeter of the building.

Draft

Document No.:	JW3186R	Page No.:	6 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
		E-E-QU-FT-CS-WR-F-1007(Iss 04)	

2 Purpose Group

Many of the provisions within the current Regulatory guidance relate to the existing use of the building. The use classifications buildings are termed purpose groups and represent various levels of hazard. A building can consist of more than one purpose group provided that each is separated from the other by fire resisting construction.

As defined by current guidance in Approved Document B, there are three distinct purpose groups within the building.

Residential - Purpose Group 1a

Assembly –Purpose Group 5

Offices – Purpose Group 3

Draft

Document No.:	JW3186R	Page No.:	7 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
E-E-QU-FT-CS-WR-F-1007(Iss 04)			

3 B1 Means of Warning and Escape

3.1 Requirement

"The building shall be designed and constructed to provide appropriate provisions for the early warning of fire and appropriate means of escape in case of fire to a place of safety outside the building capable of being safely and effectively used at all material times."

3.2 Means Of Warning

3.2.1 Levels 1 and 2

It is unknown whether the community areas and nursery are covered by an automatic fire detection system (AFD) or a manual system triggered by manual call points. The provision of AFD would not necessarily have been required at the time of construction, indeed today a manual system may be the minimum level required by the Regulatory guidance, as the travel distances to the closest storey / final exit from the building would comply with current permitted travel distances.

There is detection within the ground floor lift lobby. The provision of this detector would only serve to inform the management of the building of a fire and presumably disable the operation of the lifts.

3.2.2 Level 3

The walkway level forms the base of the core to the residential levels and is only covered by AFD for the operation of the smoke extract system. The activation of the detection on this level should also appear on the fire alarm panel.

3.2.3 Level 4

It is unknown whether the office / doctors levels are covered by AFD, again this may not have been required.

3.2.4 Individual Apartments

All apartments on the residential floors contain an entrance hallway. It is assumed that the apartments include smoke detection to at least the protected entrance hall, but it is unknown whether this is a mains operated AFD system.

3.2.5 Common Areas

An audible fire alarm is not required to common areas of residential buildings. Should there be an incident in the common areas, the fire resisting compartment enclosing each flat unit will provide an area of relative safety, and the fabric of the building is assumed to have been designed so that there is limited risk of fire spread. In accordance with BS 5588 pt 1, the risk of fire starting in corridors or stairways intended for use only as means of escape can be regarded as negligible as long as they are kept clear of obstructions and are not used for storage. Control of this is a duty of the management under the Regulatory Reform (Fire Safety) Order 2005.

Evacuation of flats beyond the dwelling of fire origin would be carried out under the control of the attending fire service if necessary.

Document No.:	JW3186R	Page No.:	8 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
		E-E-QU-FT-CS-WR-F-1007 (Iss 04)	

3.3 Means Of Escape

3.3.1 Evacuation principals – Levels 1, 2 and 4

Evacuation strategies are based upon defined principals of the awareness, familiarity and mobility of the occupants of the building, or building part; and the geometry, use and internal layout of the space.

Within the non residential levels of the building, it can be assumed that the occupants are awake, but not necessarily familiar with the building layout and escape routes. The means of escape design is determined amongst other factors by:

- Means of warning and ability to be aware of a fire before escape becomes untenable,
- Limitation of the distance to exits for escape and a choice of routes where a single direction of escape is excessive,
- Adequacy of escape routes for the number of occupants present.

In this instance simultaneous evacuation of these levels is most appropriate.

3.3.2 Internal layouts – Levels 1 and 2

From levels 1 and 2, escape is available in alternative directions from the community areas, to external air on the ground floor. This area of the building is assumed to be under a single tenancy as community use, and therefore the control of the space would be managed by one organisation.

The boxing club on ground floor is approximately 180m², with a maximum occupancy based on a floor space factor of 1m² per person of 180 people. The room is served by a single exit door on the external elevation to the North elevation. Travel distances to the exit are within permissible single direction of travel of 18m. An additional exit would be required for an occupancy exceeding 60 people. The use of this room is therefore limited by the omission of an alternative escape route.

There is an open void above the boxing area, into the mezzanine above housing the nursery. A balcony connects the nursery on opposite sides of the central core. Escape can be made away from the void (unless on the balcony, where there is full vision into the boxing club) without having to pass within 4.5m of the opening.

3.3.3 Internal layouts – Level 4

Level 4 contains the office accommodation and is entered via the external escape stair and lift serving levels 1-4. There is no access to the stair or lifts in the central core shown on the original construction drawings, however lift landing doors appear to be shown on the existing drawings provided. It is assumed that AFD is present in the entrance lobby, open plan area and corridors as a minimum. The corridor off the open plan room continues around the North side of the central core and discharges into the entrance lobby.

If the accommodation communicates with the fire fighting shaft / lifts, then the core in this area should be protected to 2 hours fire resistance and 1 hour fire doors. As there is a single escape route from the building at this level, the exit should be lobbied to provide a minimum of 30 minutes fire resisting construction and there should be no combustible materials contained within the entrance lobby. It would also be beneficial to cover the risk rooms off the escape route with AFD, ie to include the refuse chute and cleaners cupboard and consider separation of these rooms from the entrance lobby.

Travel distances, as the layout offers escape in more than one direction back to the entrance lobby, provided the lobby is adequately protected, this would be satisfactory.

Document No.:	JW3186R	Page No.:	9 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
		E-E-QU-FT-CS-WR-F-1007(Iss 04)	

3.3.4 Evacuation principals – residential

The recommendations in the current guidance of Approved Document B support an evacuation strategy which is based upon the following assumptions:

- The fire is generally within a dwelling;
- There is no reliance on rescue for evacuation, other than via the main core;
- Due to an assumed high degree of compartmentation and therefore a low probability of fire spread beyond the dwelling of fire origin, simultaneous evacuation of the building is unlikely to be considered necessary; and,
- Although fires may occur in the common parts of the building, the materials and construction used there should prevent the fabric from being involved beyond the immediate vicinity.

It is recognised, however, that the occupants of neighbouring dwellings may feel a need to leave and will, in some circumstances, seek to find their way out of the building. For this reason, it is necessary to make certain provisions for securing the means of escape both within individual apartments and within the common circulation areas as a whole.

The requirements for residential property are sub divided into the common areas and flat internal layouts.

3.3.5 Internal layout - Apartments

The internal layouts of the existing flats are based around an internal corridor / entrance hall. This corridor need only be enclosed in materials affording 30 minutes fire resistance where the travel distance from the furthest point in the flat to the entrance door exceeds 9m. Doors leading into a protected corridor (ie where more than 9m) should be rated to a minimum FD 20 standard but need not be self-closing. The flat entrance door should offer a minimum of an FD30(s).

In accordance with ADB, the minimum standard fire alarm should comply with the current standard of BS 5839: *Fire detection and fire alarm systems for buildings, Part 6: Code of practice for the design and installation of fire detection and alarm systems in dwellings*⁽⁶⁾ is to provide AFD to at least an LD3 system. Whether or not a mains fed fire alarm system is contained in the existing flats is unknown. **It is recommended that the system is upgraded to incorporate this standard as a minimum.**

3.3.6 Common Areas

The common area off the single stair is a lobby approach. Where apartment buildings are served by one common stair, the travel distances between the stair door and any entrance door should not exceed 7.5m and the lobby must be ventilated. The distance to the stairs from the flat entrance doors appears to be more than 7.5m from the flats with entrance doors to the North of the lift shaft, the maximum of which is approximately 8.3m (scaled from microfiche plans, to be checked on site). This excessive distance of less than 1m results in an increase in travel of less than 1 second and would be considered to be acceptable under current standards and risk assessment.

3.4 Smoke Ventilation.

From the information available it is assumed that the common area to each residential floor is ventilated via a smoke extract shaft and an adjacent fresh air riser, located on the North elevation of the core, between the core and 2 No flats. The openings into the shafts are at high level on each floor and both shafts appear to be closed at the base, which is in accordance with current guidance. The dimensions of the shafts are unknown; from the microfiche archive drawings they appear to be in the region of 400mm x 600mm each, between their internal walls. These measurements are not able to be precisely scaled and should be checked on site. The shafts appear to continue up to the roof of the plant housing, where they are terminated. The details of the shaft termination cowls / protrusions are unknown.

To meet with current standards, a naturally vented shaft would require a minimum dimension of 1.5m²

Document No.:	JW3186R	Page No.:	10 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
		E-E-QU-FT-CS-WR-F-1007(Iss 04)	

and the vent into the shaft from the lobby should be a minimum of 1m². The existing shaft is clearly not providing an equivalent level of ventilation naturally and it is recommended that the shaft be ventilated via mechanical means

The existing openings into the lobby areas of the residential floors to the smoke and fresh air ventilation shafts are controlled via mechanical dampers activated by a smoke detector in each lobby. It is assumed that the fire alarm panel is programmed to open the dampers on the fire floor and at the walkway level, creating a natural ventilation shaft for smoke extract from the internalised core.

It is understood, from the Aecom document detailing the upgrades proposed to the system, that there is a mechanical element to the smoke ventilation, which can be manually operated by the fire service on arrival to assist in the removal of smoke. It is understood that the fan(s) are positioned at the base of the shaft. It is unknown how the fresh air ventilation shaft operates in a fire condition (the rate of extraction the system currently achieves both naturally and mechanically). It is also not known how the existing system performs as a natural shaft for the purposes of escape prior to fire service intervention.

The existing system is unsatisfactory from a modern perspective, as the smoke extract shaft is significantly undersized (the shaft would also double as a fire fighting lobby, which requires a shaft area of 3m² under current guidance). An overhaul of the dampers and a change of the mechanical element to operate automatically is proposed, however, unless the existing fans are capable in automatic mode of producing the equivalent extract rates to that of a compliant modern system, the upgrade will not meet the aspiration of achieving current standards. This also casts into doubt the justification on grounds of escape time, the excessive travel distance as outlined in 3.3.8 above. As the ventilation provision is critical to the stay in place evacuation principle, it is strongly recommended that the performance of the automatic system of mechanical ventilation as existing and as proposed is assessed in order to ensure that a satisfactory level of safety is provided to the residents throughout the tower.

Ventilation of smoke is provided to the head of the stair via a weathered permanently open ventilator positioned on the roof of the plant room. The current guidance requires this vent to give a 1m² free area. The free area of the existing provision is unknown. Inlet air to the stair is provided by a louvred vent at the base of the stair at level 3, the walkway level.

Document No.:	JW3186R	Page No.:	11 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
		E-E-QU-FT-CS-WR-F-1007(Iss 04)	

4 B2 Internal Fire Spread (Linings)

4.1 Requirement

"To inhibit the spread of fire within the building the internal linings shall:

- a) *adequately resist the spread of flame over their surfaces; and*
- b) *have, if ignited, a rate of heat release which is reasonable in the circumstances.*

In this paragraph "internal linings" mean material lining any partition, wall, ceiling or other internal structure."

The interior wall and ceiling surfaces in a building can have a significant influence on how fast a fire may develop. It is particularly important that, in circulation spaces including staircases, where the rapid spread of fire is most likely to prevent occupants from escaping, surface linings are restricted by making provision for them to have low rates of heat release and surface spread of flame.

The wall and/or ceiling linings will satisfy the following classifications given in the ADB, when tested under either the National Classifications, in accordance with BS 476: Part 7 or under the European classifications in accordance with BS EN 13501: Part 1

Location	National Classification	European Classification
Small rooms of area not more than 30m ² in non-residential accommodation	3	D-s3, d2
Other rooms	1	C-s3, d2
Circulation spaces	0	B-s3, d2

Table1: Classification of Surface Linings

The existing surfaces to the building are assumed to be satisfactory.

5 B3 Internal Fire Spread (Structure)

5.1 Requirement B3 (1) Load-bearing Elements

"The building shall be designed and constructed so that, in the event of fire, its stability will be maintained for a reasonable period."

The period of fire resistance required is linked to the purpose group for the building taking into account the height of the top floor, depth of any basement and whether the building is sprinklered or not.

Where any element supports another, the supporting element should possess at least the resistance of the other. In this instance, all load bearing elements of structure, such as the structural frame and floors, would currently require sprinkler protection throughout and a minimum of 120 minutes fire resistance. The existing building is not sprinklered and the fire resistance of the elements of structure are unknown but assumed to meet 2 hours. Whilst it is unlikely that the building would be acceptable under current standards, the requirement for residential buildings with floors more than 30m above ground level to have sprinkler suppression is a relatively recent requirement and would not have been a requirement at the time of the construction and is considered therefore to provide a satisfactory level of safety as an existing structure.

5.1.1 Protected Shafts

Shafts containing stairs and lifts, refuge chutes, risers etc. need to be protected in their entirety if they pass through compartment floors or walls. Table A2 indicates these should be to a 120 minute standard.

Any doors into protected shafts should normally be FD30S self-closing fire doors with smoke seals. This effectively gives the 60 minutes resistance from 30 into the shaft and 30 minutes out. Lift doors need not have smoke seals. Service shafts can either be enclosed as above or fire stopped at floor level. As all the risers appear to be contained within the fire fighting shaft, it is assumed that the level of fire resistance between the shafts and the risers, including the access doors / hatches achieve a 120 minute level of fire resistance or fire stopped to the same level at the penetrations through the floors. It is recommended that the provision of fire resistance is assessed and verified as achieving a satisfactory standard of fire resistance. Whilst the standard of fire resistance for means of escape may be lower than 2 hours, the 2 hour standard would have been expected at the time of construction under local acts and therefore is assumed to be in place.

5.1.2 Areas of Special Fire Hazard

Areas of special fire hazard (plant rooms) located in the basement are separated with construction and doors that will afford a minimum 30 minutes fire resistance.

5.1.3 Fire Stopping Within Concealed Spaces

"The building shall be designed and constructed so that unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited."

There are limits to the extent to which any cavities can exist, for example between walls and cladding and between ceilings and roofs. Fire stopping via appropriate cavity barriers are assumed to be in place. These elements are not usually visible without invasive surveying and it is recommended that these elements are assessed within void flats to a level which would provide confidence in whether or not the provision is satisfactory.

Document No.:	JW3186R	Page No.:	13 of 16
Project No.:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
		E-E-QU-FT-CS-WR-F-1007(Iss 04)	

6 B4 – External Fire Spread

The requirement of Regulation B4 is that the external walls of the building shall resist the spread of fire over their surface and from one neighbouring building to another.

6.1 General Philosophy

The objective of this requirement is to ensure that there is sufficient separation between buildings to prevent fire spread and to ensure that fire does not spread up the building façade.

6.2 External Wall Construction

The external surface of the building, which is more than 18m, should have a surface classification of Class 0 (national class) or class B-s3, d2 or better (European class). The external surfaces appear to be of concrete and glazed openings in metal frames, which would be satisfactory for the purposes of external fire spread.

6.3 Space Separation

The further apart that one building is from another, the lower the potential for fire spread. When evaluating the potential for fire spread, one would normally use either the distance from a building façade to the site boundary or where appropriate a relevant boundary such as the centreline of a public road.

With residential buildings, the spread of fire between buildings on the same site must be considered.

The Enclosing Rectangles Method (sometimes referred to as the Geometric Method) was used to assess the space separation requirements of the development. This technique is described in the BRE publication 187, "External Fire Spread: building separation and boundary distances".

To determine the minimum position of the boundary from the building, the unprotected area of the relevant compartment is projected on to a plane of reference. This unprotected area projection can be enclosed in an 'enclosing rectangle'.

It is both reasonable and recognised to assume that the size of a potential fire will depend upon the level of compartmentation provided within the building. It follows, therefore, that a fire may involve a complete compartment, but should not spread into adjacent compartments. This assumption is also supported in paragraph 14.2 of ADB.

The largest compartment is taken as the worst case scenario. This is the height and length of the building over levels 1 and 2 on the North elevation (elevation where the playgroup extends through to the underside of level 3). As level 3 (walkway) is assumed to be compartmented from the levels below. This gives a total façade rectangle of 22.4 x 5.22m and an enclosing rectangle of 6m x 24m. This gives a distance of 7.0m to allow 100% of the façade to be unprotected. The boundary distances around the building appear to be clear of any building to this distance and would therefore provide satisfactory distance to allow 100% of the façade to the unprotected.

Document No.:	JW3186R	Page No.:	14 of 16
Project No.:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
E-E-QU-FT-CS-WR-F-1007(Iss 04)			

7 Requirement B5 – Access And Facilities For The Fire Service

7.1 Provision Of Fire Mains

The height of the building means that a fire fighting shaft is required for the residential floors and one is provided (as stated in the current fire risk assessment). There should be a dry rising main within the fire fighting shaft and the outlets from fire mains should be sited within the fire fighting stair. The main is located in the lobby approach. This is an existing condition.

7.2 Vehicle Access and Hydrants

There should be access for a pump appliance to within 18m of each fire main inlet connection point. The inlet should be visible from the appliance. This is provided.

Vehicle access routes should meet the requirements of Table 21 in Approved Document B and turning facilities should be provided in any dead-end access route that is more than 20m long. This appears to be provided and is an existing condition.

Hydrants should be available within 90m of the inlet to the dry riser. As a urban area and existing building with many structures, it is assumed that sufficient hydrant supplies are available.

7.3 Fire Fighting Shafts

As the building height is greater than 18m a fire fighting shaft should be provided, which should contain a fire fighting lift. Fire fighting shafts should be located so that every part of every storey (other than fire service access level) is no more than 60m from the fire main outlet measured on a route suitable for laying hose, which is more than achieved. The fire risk assessment describes the provision of a fire fighting shaft and fire fighting / evacuation lifts with dry rising main. Current guidance would be for a wet rising main, as the building is over 50m in height. The provision of a wet main saves time in fire fighting operations due to the increased time for a dry main to be primed by the pumping appliance. The time delay in priming the dry riser is not considered to have an adverse effect on fire fighting operations due to the high levels of compartmentation and fire resistance of the building elements of structure.

7.4 Venting Of Smoke And Heat From Basements

The basement / boiler house level appears to be in excess of 200m² which could require venting of the basement, dependant on the availability of external walls and level of compartmentation within the basement area. Plans of the basement are not currently available. Further comment will be made when these become available. There is no communication between the stair or lifts with the basement area.

Document No.:	JW3186R	Page No.:	15 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
		E-E-QUFT-CS-WR-F-1007(Iss 04)	

8 Conclusions & Recommendations

The existing building as constructed is assumed to meet the standards for fire resistance to the elements of structure and of the requirements for fire fighting facilities, however there are areas of the building design which reduce the level of safety to a level which warrants further investigation. These items have significant consequences in the event of a fire on the means of escape and the potential for breaches in compartmentation.

1. The performance of the smoke ventilation system
2. The separation of the risers and ancillary accommodation entered directly off the fire fighting shaft.
3. Separation of the residential accommodation and non residential accommodation via the central core.

Draft

Document No.:	JW3186R	Page No.:	16 of 16
Project No:	301922	Issue Date:	16/08/12
Client:	Kensington & Chelsea TMO	Issue No.:	D01
E-E-QUFT-CS-WR-F-1007 (Iss 04)			

To: Bruce Sounes[bruce@studioe.co.uk]
From: Marc Watterson (IBI Taylor Young (Handforth))
Sent: Fri 24/08/2012 3:26:28 PM
Subject: 6075 - Grenfell Tower Refurbishment RBKC Issue 2
[6075 - Grenfell Tower Refurbishment RBKC - Issue 2.pdf](#)

6075 - Grenfell Tower Refurbishment RBKC Issue 2

Please click [here](#) to access the documents for this issue

Bruce, Paddy

Please see below a link to download files with all our submission information. Please can this, together with your plans and the DAS, be burnt to CDs as follows:

- 2 for the LPA
- 1 to Paul Dunkerton
- 1 to me (please can you post this back to me?)

I have posted to you all the submission information so far (2 packages for Tuesday delivery, before 1pm), so you will just need to add your plans and the DAS (2 copies of all) and the two CDs and then deliver to the LPA (the customer services area where we usually meet the LPA) on Tuesday afternoon. I would be grateful if you could let me know when this has been delivered.

Any problems or questions, please give me a call.

Thanks, and have a good weekend.

Marc Watterson

taylor young|ty

chadsworth house
wilmslow road
handforth
cheshire
sk9 3hp
Tel

Fax

marc.watterson@tayloryoung.co.uk

www.tayloryoung.co.uk

please consider the environment before printing this e-mail: thank you.

[legal notice](#)

The content of this e-mail is intended solely for the use of the individual or entity to whom it is addressed. If you have received this communication in error please notify the author by replying to this e-mail immediately. Be aware that forwarding it, copying it, or in any way disclosing its content to any other person, is strictly prohibited.

To: Bruce Sounes[bruce@studioe.co.uk]
Cc: alun.dawson@appleyards.co.uk[alun.dawson@appleyards.co.uk]; Grenfell[Grenfell@studioe.co.uk]; david.hale@appleyards.co.uk[david.hale@appleyards.co.uk]; Paul Dunkerton[pdunkerton@kctmo.org.uk]; 'A.McQuatt@maxfordham.com'['A.McQuatt@maxfordham.com']; Marc Watterson[marc.watterson@tayloryoung.co.uk]; Chris Churchman[c.churchman@churchmanla.co.uk]; Jon Bannister[j.bannister@churchmanla.co.uk]
From: Mark Anderson
Sent: Wed 29/08/2012 8:56:37 AM
Subject: RE: Grenfell Tower Regeneration Project - Environmental improvements

Good morning Bruce,

My question relates solely to the Grenfell Tower Regeneration Project and is intended to investigate any environmental improvement potential that may be incorporated within the project so as to address issues raised through observations from residents to date.

Examples being; ecological, PV, rainwater/gray water harvesting, solar, wind power.

I am not expecting us to cover this unless raised by RBKC on Thursday.

As for the wall etc., I think we raise these with the EMB when we meet it. This may be Thursday afternoon.

Regards
Mark

Mark Anderson
Director of Assets & Regeneration

t: [REDACTED]



e: manderson@kctmo.org.uk
www.kctmo.org.uk
292a Kensal Road, W10 5BE

Before printing, please think about the environment

From: Bruce Sounes [mailto:bruce@studioe.co.uk]
Sent: 28 August 2012 15:38
To: Mark Anderson
Cc: alun.dawson@appleyards.co.uk; Grenfell; david.hale@appleyards.co.uk; Paul Dunkerton; 'A.McQuatt@maxfordham.com'; Marc Watterson; Chris Churchman; Jon Bannister
Subject: RE: Grenfell Tower Regeneration Project - Environmental improvements

Dear Mark,

Does this request have anything to do with the EMB and is it focussed on the estate beyond the tower? Do you need something concrete by Thursday morning (meeting with Cllr Coleridge)?

Numerous improvements have been mentioned so far and some may be justified:

- x More comprehensive CCTV.
- x Improved external lighting
- x Redecoration to the common parts.
- x Improvements to the Resource Centre - so that it becomes a community space.
- x Replace the breeze block wall at the eastern end of the Walkway.

- x The escape stairs across the estate seem to be pretty poorly treated. The one near the tower that is still publicly accessible could be improved.
- x There are maintenance issues – for instance the staining through the open concrete joint below.



- x I find the graffiti wall very problematic. It's not a Banksy or Shepard Fairy. It's bad. It's not neutral territory and its entirely at odds with the architectural (and corporate) vision for the estate. It doesn't belong in an expensive new park next to a newly clad building. The youth could engage with their environment in a much more controlled and productive way if the EMB were serious about it. For instance the Public Art requirement for the KALC project is still to be agreed and there could be budget for doing something with the wall.

Is this along the lines you were looking for?

Regards

Bruce Sounes

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] | www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010

BCSE Award Inspiring Design Primary School 2008 & Academy 2010

BSF Award Excellence in Student Engagement 2009

Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent by and on behalf of Studio E and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from

the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorized representative. (delete ident of this message)

From: Mark Anderson [<mailto:manderson@kctmo.org.uk>]
Sent: 23 August 2012 11:12
To: Bruce Soules
Cc:
Subject: Grenfell Tower Regeneration Project - Environmental improvements

Good morning,

As a follow up to the resident enquiries around environmental improvements, I would like the design team to consider and provide guidance on potential environmental improvements that could be incorporated in the design and the implications of doing so.

I am seeking outline guidance only at this stage.

This is to be dealt with separately to the planning submission and if progressed would need to be handled as an amendment to the planning application to be submitted tomorrow.

Please advise me of a suitable timescale within which this may be considered.

Regards
Mark

Mark Anderson
Director of Assets & Regeneration

t: [REDACTED]



e: manderson@kctmo.org.uk
www.kctmo.org.uk
292a Kensal Road, W10 5BE

Before printing, please think about the environment

This e-mail message has been scanned for Viruses and Content and cleared by **MailMarshal**

DISCLAIMER

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email.

Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd. accepts no liability for any damage caused by any Virus transmitted by this email.

This e-mail message has been scanned for Viruses and Content and cleared by **MailMarshal**

DISCLAIMER:

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email.

Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd. accepts no liability for any damage caused by any Virus transmitted by this email.

Testing. Advising. Assuring.

Project No:	301922
Project:	Grenfell Tower
Doc Ref:	JW13703DN
Issue No:	01
Date:	12 September 2012

Grenfell Tower - Fire Safety Strategy

1 Introduction

This Design Note provides an outline fire safety strategy for the proposed refurbishment of the building, with particular emphasis on means of escape and access and facilities for the fire service

2 Statutory controls

The building alterations will be subject to the requirements of The Building Regulations 2010 and will have to be carried out:

- In accordance with the requirements of Schedule 1 of the Building Regulations 2010; and
- Such that the existing arrangements are no worse than they were before the alterations were carried out.

The alterations must also make the building no worse in terms of compliance with the Regulatory Reform (Fire Safety) Order 2005 and Section 20 of the London Building Acts (Amendment) Act 1939.

3 Compliance with The Building Regulations 2010

3.1 Compliance with B1 (means of warning and escape)

3.1.1. MEANS OF WARNING

Self contained fire detectors will need to be provided within all new apartments to an "LD3" standard as specified in BS 5839-6⁽¹⁾.

The boxing club and office accommodation at Walkway Level and the nursery and reception/office suite at ground level will need to be provided with a fire detection and alarm system to an "L3" standard as defined in BS 5839-1⁽²⁾.

Smoke detectors will need to be provided in the common parts to:

- activate the smoke extract system serving them;
- to activate any fire/smoke curtains provided to safeguard the means of escape; and
- to cause an alarm of fire to be given to those parts of the building which are not residential apartments (this appears to be a feature of the existing fire safety arrangements for the building).

3.1.2. MEANS OF ESCAPE

To provide a satisfactory standard of means of escape from both the existing (unaltered) parts and to the altered parts of the building the measures outlined below will be necessary.

EXISTING PARTS

The existing smoke extract system serving the common lobbies will need to be refurbished and/or modified to reflect statutory requirements and any recommendations made by the statutory authorities regarding this system will need to be considered.

Any changes/improvements recommended in the Fire Risk Assessment for the building will need to be implemented.

ALTERED PARTS

OFFICE LEVEL

COMMON AREA

The new entrance doorways to the apartments will need to be self closing "FD30S" doors.

The vent shafts for smoke extract will need to be modified as necessary to reflect the strategy for the existing parts (see above).

WITHIN APARTMENTS

Each entrance hall will need to be enclosed by construction having a 30 minute standard of fire resistance with the doorways therein fitted with "FD20" doors which need not be self closing (this will not apply to the doors to bathrooms and wcs which need not be fire doors provided these rooms are separated from adjoining habitable rooms by walls having a 30 minute standard of fire resistance)

There need only be one exit from each apartment provided that the travel distance from the apartment entrance door to the door to the furthest habitable room does not exceed 9m.

WALKWAY LEVEL

COMMON AREA

The boxing club and office suite will need to be separated from the common lobby by construction having at least a 30 minute standard of fire resistance and approached from the common lobby by protected lobbies (lobbies enclosed by construction having at least a 30 minute standard of fire resistance incorporating inner and outer self closing "FD30S" doors).

These lobbies will need to be ventilated directly to the exterior by openings not less than 0.4m² in area.

The common area will need to be "fire sterile".

ACCOMMODATION AT THIS LEVEL

To meet travel distance requirements, an alternative escape from the boxing club will be needed. This will have to be to the common area via a ventilated, protected lobby as described above.

As stairs serving residential accommodation should not also serve other accommodation, it may be necessary to provide sprinkler (or water mist) systems to the boxing club and office suite.

(NOTE: some modification of the above requirements may be possible subject to negotiations with the statutory authorities)

MEZZANINE LEVEL

COMMON AREA

The new entrance doorways to the apartments will need to be self closing "FD30S" doors.

The vent shafts for smoke extract will need to be extended to serve this level.

WITHIN APARTMENTS

Each entrance hall will need to be enclosed by construction having a 30 minute standard of fire resistance with the doorways therein fitted with "FD20" doors which need not be self closing (this will not apply to the

doors to bathrooms and wcs which need not be fire doors provided these rooms are separated from adjoining habitable rooms by walls having a 30 minute standard of fire resistance)

There need only be one exit from each apartment provided that the travel distance from the apartment entrance door to the door to the furthest habitable room does not exceed 9m. In this connection, the secondary exit from the southern end of each of the E and W apartments can be omitted

GROUND LEVEL

COMMON AREA

The nursery and reception/office suite will need to be separated from the common lobby by construction having at least a 30 minute standard of fire resistance. In the case of the nursery, this separation should be imperforate. In the case of the reception/office suite, this should be approached from the common area by a protected lobby (a lobby enclosed by construction having at least a 30 minute standard of fire resistance incorporating inner and outer self closing "FD30S" doors).

This lobby will need to be ventilated directly to the exterior by an opening not less than 0.4m² in area.

The common area will need to be "fire sterile".

ACCOMMODATION AT THIS LEVEL

As stairs serving residential accommodation should not also serve other accommodation, it may be necessary to provide sprinkler (or water mist) systems to the reception/office suite.

(NOTE: some modification of the above requirements may be possible subject to negotiations with the statutory authorities).

3.2 Compliance with B5 (access and facilities for the fire service)

DRY RISING MAIN

It will be necessary to re-site the existing inlet to the dry rising main (which, it is understood, is located internally within the common area) to a suitable location on the external face of the building within 18m of (and in sight of) where a pumping appliance would pull up.

4 Compliance with The Regulatory Reform (Fire Safety) Order 2005

4.1 First aid fire-fighting equipment

It will be necessary to provide first aid fire-fighting equipment (portable fire extinguishers) in the non residential areas of the building. These should be selected and located in accordance with the recommendations of BS 5506-8⁽³⁾.

4.2 Fire Risk Assessment


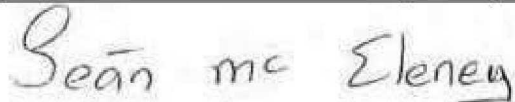
It will be necessary to update the Fire Risk Assessment in the light of the proposed changes to the building.

5 Compliance with Section 20

It might be necessary to provide openable windows for smoke ventilation to the new accommodation.

6 References

1. BS 5839-6: 1995. Fire detection and alarm systems for buildings – Part 6: Code of practice for the design and installation of fire detection and alarm systems in dwellings
2. BS 5839-1: 2002. Fire detection and alarm systems for buildings – Part 1: Code of practice for system design, installation, commissioning and maintenance
3. BS 5306-8: 2000. Fire extinguishing installations and equipment on premises – Part 8: Selection and installation of portable fire extinguishers – Code of practice

Prepared by:	 Terry Ashton Associate (for and on behalf of Exova Warringtonfire)	12/09/12
Reviewed by:	 Sean McEleney Graduate Engineer (for and on behalf of Exova Warringtonfire)	12/09/12



To: marc.watterson@tayloryoung.co.uk[marc.watterson@tayloryoung.co.uk]
Cc: Grenfell[Grenfell@studioe.co.uk]
From: Bruce Sounes
Sent: Sun 23/09/2012 10:59:53 AM
Subject: FW: Grenfell Tower Refurbishment - Relocated stair option

Marc,

We met with Mark Anderson on Friday and he agreed the change described below. It is going to take us at least a week to update the drawings and visuals, possibly more if we include the D&A Statement. Three visuals are ready, possibly only one is affected. It is too late to do anything about the physical model which will be ready Monday.

Please can you come back to us on possible implications with Ed and his team? Perhaps they won't be thinking about it until after Wednesday?

Regards

Bruce
Studio E LLP

From: Bruce Sounes
Sent: 20 September 2012 13:41
To: Mark Anderson
Cc: Grenfell
Subject: RE: Grenfell Tower Refurbishment - Relocated stair option

Hi Mark,

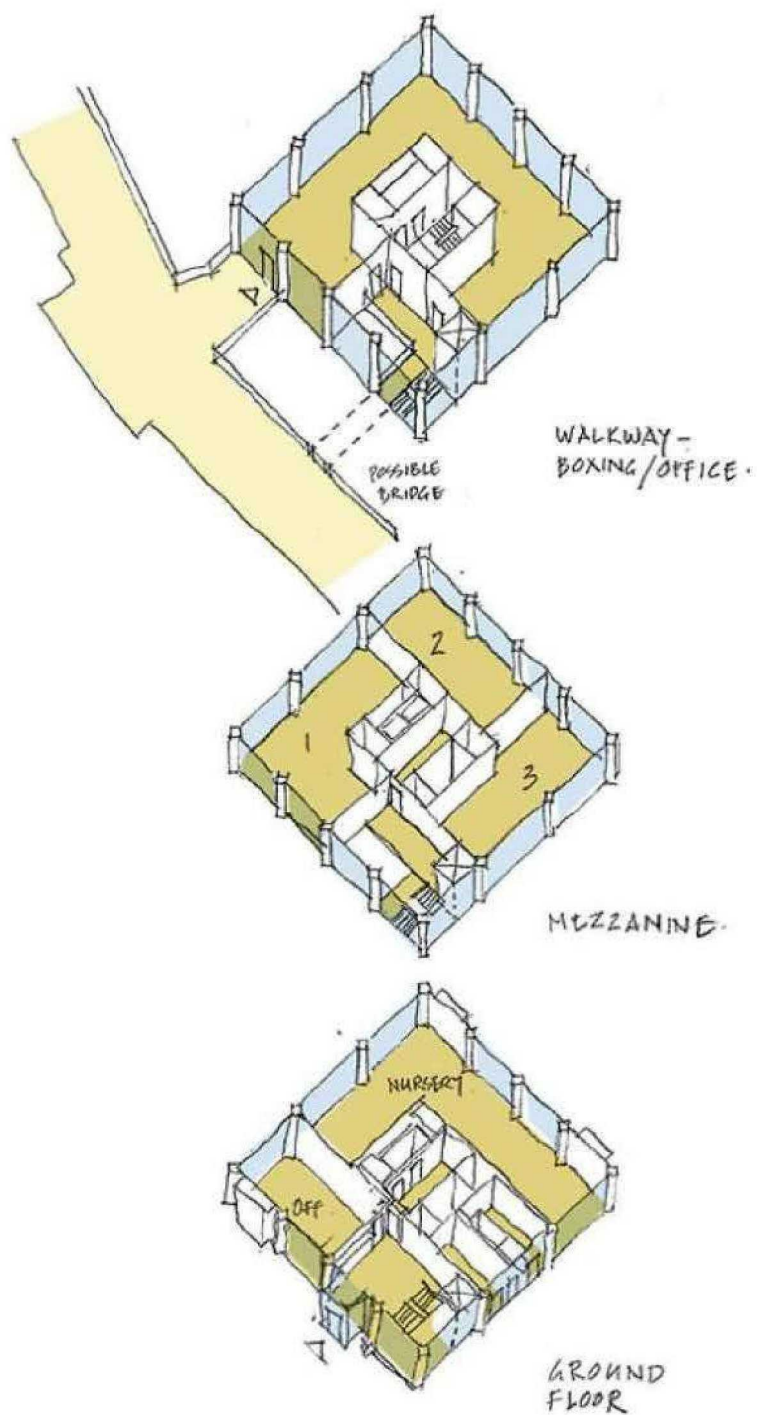
I am uncomfortable forwarding this (attached) because I'm not sure this is what you had in mind.

The disadvantages are:

- x A temporary escape will need to be created from Walkway to ground while the stair/lift is built. (I think KALC want to remove the other external stair early on but perhaps we can hold onto it)
- x The large lobby at Walkway level suggests losing the entrance and lobby from deck level altogether. We could introduce a void all the way down to ground, creating a triple height entrance.

There are advantages:

- x Glazed stair on prominent corner.
- x We would move the main entrance over 1 bay to the east and centrally on the bay, which we can't now because of the basement escape.
- x More net usable area at Walkway



Please let me have any comments?

Regards

Bruce Sounes

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN



Queen's Award for Enterprise: Sustainable Development 2010
BCSE Award School Architect of the Year 2008 & 2010
BCSE Award Inspiring Design Primary School 2008 & Academy 2010
BSF Award Excellence in Student Engagement 2009
Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent to and may be for Studio E and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorized representative independent of this message.

From: Mark Anderson [mailto:manderson@kctmo.org.uk]
Sent: 19 September 2012 11:20
To: Bruce Soules
Subject: RE: Grenfell Tower Refurbishment - Relocated stair option

Good morning Bruce,

Did I mention retaining the existing lift ?

I would like you to look at removing the existing stair and lift and handing the recent planning application proposal for the new lift and stair.

I think this may also allow us to connect the existing fire escape stair from the upper floors to the new one.

We would then omit the office at the boxing club level and the Estate Inspectors office at Ground floor and locating these within the new office space created within the garage spaces.

I will call later.

I have Grenfell meetings in my diary for Friday not tomorrow.

Regards
Mark

Mark Anderson
Director of Assets & Regeneration

t: [REDACTED]



e: manderson@kctmo.org.uk

www.kctmo.org.uk

292a Kensal Road, W10 5BE

 Before printing, please think about the environment

From: Bruce Sounes [<mailto:bruce@studioe.co.uk>]

Sent: 18 September 2012 20:07

To: Mark Anderson

Cc: Paul Dunkerton; alun.dawson@appleyards.co.uk; Chweecheen Lim; Grenfell

Subject: Grenfell Tower Refurbishment - Relocated stair option

Dear Mark,

Please see attached the option you described, relocating the stair and keeping the existing lift. The lift shaft is shown removed from the residential floor at Walkway+1 which has a cost but otherwise two bedrooms will be lost.

Are we still meeting at 3pm tomorrow?



Regards

Bruce Sounes

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T  | F  www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010

BCSE Award Inspiring Design Primary School 2008 & Academy 2010

BSF Award Excellence in Student Engagement 2009

Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent from or on behalf of Studio E and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file. Users prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorized representative independent of this message.

DISCLAIMER:

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email. Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd accepts no liability for any damage caused by any Virus transmitted by this email.

To: Mark Anderson[manderson@kctmo.org.uk]; David Hale[david.hale@appleyards.co.uk]
Cc: Bruce Sounes[bruce@studioe.co.uk]; Paul Dunkerton[pdunkerton@kctmo.org.uk]
From: Alun Dawson
Sent: Fri 28/09/2012 9:07:05 AM
Subject: RE: Project Templates - Grenfell Tower Regeneration Project

Mark

In response to your email below, comments as follows:

- x Business Case – we have issued you a copy of our Project Brief document for comment (it was appended to our Appointment... can you please confirm this was received) which covers most of the areas of your template. However, as there are some subtle differences we will import into your format and complete as far as possible and return (it would be helpful if you could let us have any feedback on the content of our own document in the interim as this will form the basis).
- x Risk Register – we do have our own format, but it looks very similar to your own and certainly does the same job. David is in the progress of arranging a date for a risk workshop, but let us know if you would prefer we use your own format...?
- x Project Initiation Document – we will complete your form and return ASAP (and also append to our Stage C Report for the end of next week)

Trust all of the foregoing is acceptable, kind regards

Alun

Alun Dawson BSc (Hons) MCIOB MAPM

Associate Director



High Holborn House • 52-54 High Holborn • London • WC1V 6RL • United Kingdom

• Mob: [REDACTED] www.appleyards.co.uk

Appleyards: now part of Artelia International: same team, enhanced expertise

This message and any attachments (the "message") is intended solely for the addressees and is confidential. If you receive this message in error, please delete it and immediately notify the sender. Any use not in accord with its purpose, any dissemination or disclosure, either whole or partial, is prohibited except formal approval. The internet can not guarantee the integrity of this message. ARTELIA (and its subsidiaries) shall (will) not therefore be liable for the message if modified.

Appleyards Limited: Registered No. 3935522 England. Vat Reg. No. 232 2357 94
Dobson White Boulcott Limited trading as Appleyards: Registered No. 5086063 England. Vat Reg. No. 539 0912 36
Registered Office: Tubs Hill House, London Road, Sevenoaks, Kent, TN13 1BL

From: Mark Anderson [mailto:manderson@kctmo.org.uk]
Sent: 20 September 2012 11:38
To: Alun Dawson; David Hale
Cc: 'Bruce Sounes'; Paul Dunkerton
Subject: Project Templates - Grenfell Tower Regeneration Project

Good morning,

Internally we are required to follow a Project management methodology and I attach templates that relate to this.

I am mindful that you are also managing the governance aspects on KCTMO's behalf and wish to ensure that we do not duplicate your role and documentation.

Would you please advise me as to whether it is appropriate for us to conclude the attached documentation or alternatively to make use of your own documentation ?

Thank you
Mark

Mark Anderson
Director of Assets & Regeneration

t: [REDACTED]



e: manderson@kctmo.org.uk
www.kctmo.org.uk
292a Kensal Road, W10 5BE

Before printing, please think about the environment

This e-mail message has been scanned for Viruses and Content and cleared by **MailMarshal**

DISCLAIMER:

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email.

Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd. accepts no liability for any damage caused by any Virus transmitted by this email.

To: 'marc.watterson@tayloryoung.co.uk'[marc.watterson@tayloryoung.co.uk]
Cc: Bruce Sounes[bruce@studioe.co.uk]; Paul Dunkerton[pdunkerton@kctmo.org.uk]; Siobhan Rumble[srumble@kctmo.org.uk]
From: Mark Anderson
Sent: Fri 28/09/2012 9:02:16 AM
Subject: Re: Grenfell Tower Application

Good morning

We shall pick this up next week and provide evidence that there is no loss

Who is the objector as I have no record of this

Regards

Mark

From: Marc Watterson [mailto:marc.watterson@tayloryoung.co.uk]

Sent: Friday, September 28, 2012 09:58 AM

To: Paul Dunkerton

Cc: Bruce Sounes <bruce@studioe.co.uk>; Mark Anderson

Subject: FW: Grenfell Tower Application

Paul

Please see below the objection from the highways officer regarding Grenfell Tower.

As you can see the key issues are the displaced parking spaces from the garages balanced with the additional flats and potential demand from parking for the office use.

I tried to extract the relevant information from the data you sent me but this has not satisfied the officer. Is there any more detailed work that identifies all the parking spaces that are linked with the estate (i.e. not general / visitor parking) and whether they are occupied or vacant?

We have also had objections from the local resident's group who are challenging the statement:

"The need for the regeneration of Grenfell Tower was based on an assessment of the wider Lancaster West Estate which identified the Tower as the top priority for investment on the Estate"

When we discussed this we talked about this being led by the heating position and it being worst in the tower but is there anything more formal that identifies this 'assessment'? I think that the objector has also been in direct communication with Mark but I just need to be clear in our position.

Thanks

Kind Regards

Marc Watterson
Principal Town Planner

IBI TaylorYoung

Chadsworth House
Wilmslow Road
Handforth
Cheshire
SK9 3HP

DDI

Tel

Fax

marc.watterson@tayloryoung.co.uk
www.tayloryoung.co.uk
IBI TaylorYoung is part of the [IBI Group](#).

please consider the environment before printing this e-mail: thank you.

[legal notice](#)

From: Edward.George@rbkc.gov.uk [mailto:Edward.George@rbkc.gov.uk]

Sent: 27 September 2012 16:47

To: Marc Watterson

Subject: Grenfell Tower Application

Marc

Please see below transportation comments in relation to the Grenfell Tower application, please address this objection.

RBK&C TRANSPORTATION COMMENTS				
PP No: 12/03163	Address: Grenfell Tower, Grenfell Road, LONDON, W11 1TH			Date of obs: 14/09/2012
Proposal: Refurbishment of existing Grenfell Tower including new external cladding and fenestration, reconfiguration of lower 4 levels to provide 7 new residential units (use class C3), replacement nursery (use class D1) and boxing club (use class D2) facilities, replacement canopy, external public realm works, redevelopment and change of use of existing garages to refuse collection area and office accommodation (use class B1).				
More info needed	No Objection	No objection STC	Concern Raised	Objection
				✓
Initial Observations		Transportation Officer:		DC Officer:
Full Observations	✓	James Mc Cool		Edward George
Further Observations (no.)				
<p>Comments: This proposal seeks to reconfigure the base of the tower, retaining existing uses whilst providing seven new flats and new office accommodation.</p> <p>The proposed residential units must be permit free to satisfy CT1(c). The borough experiences very high levels of on-street parking demand such that the occupancy level of spaces is at saturation levels in most of the borough and at most times of the day and night. The whole borough is subject to one Controlled Parking Zone and therefore the parking demand generated by new residential developments will not necessarily be focused in the area surrounding the development. In order to ensure that new developments do not worsen this situation the Transport SPD requires that all new additional residential units be permit free. The proposal is objectionable in the absence of a permit free agreement and contrary to the Transport SPD and CS Policies CT1 (b) and (c).</p> <p>The scale of the nursery and the boxing club would not change significantly. Their continued operation would have no transport impacts. The introduction of small amount of office floorspace to the site would not be objectionable in principle; however, the proposed office accommodation would result in the loss of five parking garages.</p> <p>Under Policy CT1 (b) applicants must demonstrate that development would not result in any material increase in traffic congestion or on-street parking pressure. In most circumstances the loss of off-street</p>				

residential car parking leads to the displacement of parking demand on street exacerbating local parking pressures and contributing to traffic congestion, as vehicles circulate looking for a free space.

The application submission does not assess whether or not the loss of the garages would displace parking demand on street, save an assertion that the garages are underused.

We would expect an application of this type to be accompanied by a survey of all the parking spaces on the estate, so the impact of losing five spaces can be assessed. This site abuts the KALC site where the loss of a significant number of off street parking spaces is proposed. The cumulative impact of losing five further spaces should be considered.

The proposal would compromise efforts to provide a satisfactory pedestrian environment on Grenfell Road. The required footway widening works would displace estate residents' parking demand. There is an opportunity for this displaced parking demand to be accommodated within the estate in existing garages. The application proposal would significantly prejudice this possibility.

The application submission fails to demonstrate that the development would not detrimentally impact on parking conditions. Accordingly the proposal is objectionable and contrary to CT1 (b).

The proposed changes to the hard landscaping at the foot of the tower are not objectionable.

Relevant policies: CT1(b)

Recommendation: Objection

Signed:

Regards

Edward George
Senior Planning Officer
Strategic Developments
The Royal Borough of Kensington & Chelsea

The Royal Borough of Kensington and Chelsea.

This e-mail may contain information which is confidential, legally privileged and/or copyright protected. This e-mail is intended for the addressee only. If you receive this in error, please contact the sender and delete the material from your computer.

This e-mail message has been scanned for Viruses and Content and cleared by **MailMarshal**

DISCLAIMER:

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom

they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email.

Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd. accepts no liability for any damage caused by any Virus transmitted by this email.

To: Adrian Jess[adrian@studioe.co.uk]
Cc: Grenfell[Grenfell@studioe.co.uk]
From: Stefano Strazzullo
Sent: Tue 02/10/2012 2:09:24 PM
Subject: RE: Grenfell Tower - DTM Meeting

Dear Adrian,
I will speak to Keith and Gavin (our civil engineer) to get an answer to your questions.
Regards,
Stefano

Stefano Strazzullo Senior Engineer
Curtins Consulting

T. [REDACTED] | F. [REDACTED] stefano.strazzullo@curtins.com

From: Adrian Jess [mailto:adrian@studioe.co.uk]
Sent: 02 October 2012 11:13
To: Stefano Strazzullo
Cc: Grenfell
Subject: Grenfell Tower - DTM Meeting

Stefano,

I'm putting an agenda together for tomorrows meeting.

Can you either give me a call or drop me a note on anything you want to see included.

One of the things that popped up discussing VE with Churchman's was their inclusion for a new road base in the costs.

Has there been any testing carried out on the existing road base as part of KALC / Grenfell, if so, does the tested area correspond with proposed vehicle movement around the tower. I think Keith York of Curtins transport has already done some work on this.

I assume the worst case will probably be a fire engine on the Eastern side of the building which may or may not be impacted by how far the basement level extends beyond the tower.

Please give me a call.

Regards,

Adrian Jess
Project Architect

For and on behalf of
STUDIO E LLP
Palace Wharf, Rainville Road, London W6 9HN
T [REDACTED] | F [REDACTED] www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010
BCSE Award School Architect of the Year 2008 & 2010
BCSE Award Inspiring Design Primary School 2008 & Academy 2010
BSF Award Excellence in Student Engagement 2009
Sustainable City Award 2009

 Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent for and on behalf of Studio E LLP and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorised representative independent of this message.

To: Marc Watterson[marc.watterson@tayloryoung.co.uk]; Chris Churchman[c.churchman@churchmanla.co.uk]; Keith.York@curtins.com[Keith.York@curtins.com]
Cc: Stefano Strazzullo[Stefano.Strazzullo@curtins.com]; Grenfell[Grenfell@studioe.co.uk]
From: Adrian Jess
Sent: Mon 15/10/2012 2:47:46 PM
Subject: RE: Grenfell Tower - Site traffic
[1279-SK056-Rev00.pdf](#)

Marc / Chris / **Keith**,

We had a meeting on Friday with the TMO to discuss the current layouts ahead of the planning re-submission this Thursday.

During the meeting there was some discussion regarding vehicle movement in and around the site. The TMO expressed a desire to restrict parking in particular along the access route to the garages. The attached sketch shows the bollards along the front of the proposed baseline units moved out to create a single track access which then sweeps back towards the existing garage gate position. (private car shown in green).

This has a number of advantages from our point of view, more pedestrian space in front of the proposed offices, restricted space for illegal parking etc. If we have overlooked any reason why this is not feasible can you please look over the attached sketch and let us know.

The issue of how the loading area under the walkway is going to be managed was also discussed but there doesn't seem to be a clear strategy as yet. There are concerns that the existing area is being abused through a mixture of illegal parking and undefined turning area which conflicts with the clients aspiration for a shared pedestrian / vehicle space around the base of the tower including the area adjacent to the baseline entrance and proposed extension under the walkway.

The attached sketch also includes an option to move the retractable bollards closer to the proposed inspector's office for better security / ease of management with a view to also restrict baseline delivery traffic to outside the site by providing a dedicated Y turning at the road head outside the site by using part of the North South Route.

There are a number of advantages in terms of safety in under the walkway inc.reducing the amount of traffic, better visibility for turning in daylight. Having dedicated turning in constant use should also aid self policing of illegal parking.

I'm aware that there are possible knock on implications for KALC public realm but if I could have your comments that would be appreciated before we take it to the TMO as a possible design option.

Your prompt response on this would be appreciated.

Regards,

Adrian Jess
Project Architect

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] F [REDACTED] | www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010

BCSE Award Inspiring Design Primary School 2008 & Academy 2010

BSF Award Excellence in Student Engagement 2009

Sustainable City Award 2009



ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent for and on behalf of Studio E LLP and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorised representative independent of this message.

To: Adrian Jess[adrian@studioe.co.uk]; Marc Watterson[marc.watterson@tayloryoung.co.uk]; Chris Churchman[c.churchman@churchmanla.co.uk]
Cc: Stefano Strazzullo[Stefano.Strazzullo@curtins.com]; Grenfell[Grenfell@studioe.co.uk]
From: Keith York
Sent: Tue 16/10/2012 12:06:02 PM
Subject: RE: Grenfell Tower - Site traffic

Adrian,

Thanks for your email.

I would have to agree that these proposals you have sketched would seem to risk shifting the 'problem' towards the KALC scheme. Even ahead of considering the need for unobstructed vehicular movement along the N/S Link, we need to consider the safety of pedestrians and cyclists. Vehicles making a 3 point turn at the end of the N/S link does not particularly come across as a safe solution.

In addition, the clutter of the numerous bollards; columns; tree; and railings in this area as highlighted by Bruce could risk collisions from drivers not having sufficient time to see the retractable bollards so soon after negotiating the bend from Grenfell Road.

An alternative would be to position any vehicle control point circa 15m to the west of where you have shown the retractable bollards on your sketch. This would allow vehicles to approach this control point and reverse with left steering wheel lock back towards the bin store adjacent to the inspector's office before re-emerging onto Grenfell Road in forward gear. I know this option would still require the area to be controlled and free of obstruction but like you say, the inspector's office offers surveillance of this area. I expect an improved lighting scheme would easily address the daylight issue relating to being under the building at this location.

I trust this is helpful. If you do need a little more assistance with swept paths/design development please do let me know and we'll happily help out.

Kind regards,
Keith

Keith York Associate

Curtins Consulting

T. [REDACTED] M. [REDACTED] keith.york@curtins.com

From: Adrian Jess [mailto:adrian@studioe.co.uk]

Sent: 15 October 2012 15:48

To: Marc Watterson; Chris Churchman; Keith York

Cc: Stefano Strazzullo; Grenfell

Subject: RE: Grenfell Tower - Site traffic

Marc / Chris / **Keith**,

We had a meeting on Friday with the TMO to discuss the current layouts ahead of the planning re-submission this Thursday.

During the meeting there was some discussion regarding vehicle movement in and around the site. The TMO expressed a desire to restrict parking in particular along the access route to the garages. The attached sketch shows the bollards along the front of the proposed baseline units moved out to create a single track access which then sweeps back towards the existing garage gate position. (private car shown in green).

This has a number of advantages from our point of view, more pedestrian space in front of the proposed offices, restricted space for illegal parking etc. If we have overlooked any reason why this is not feasible can you please look over the attached sketch and let us know.

The issue of how the loading area under the walkway is going to be managed was also discussed but there doesn't seem to be a clear strategy as yet. There are concerns that the existing area is being abused through a mixture of illegal parking and undefined turning area which conflicts with the clients aspiration for a shared pedestrian / vehicle space around the base of the tower including the area adjacent to the baseline entrance and proposed extension under the walkway.

The attached sketch also includes an option to move the retractable bollards closer to the proposed inspector's office for better security / ease of management with a view to also restrict baseline delivery traffic to outside the site by providing a dedicated Y turning at the road head outside the site by using part of the North South Route.

There are a number of advantages in terms of safety in under the walkway inc.reducing the amount of traffic, better visibility for turning in daylight. Having dedicated turning in constant use should also aid self policing of illegal parking.

I'm aware that there are possible knock on implications for KALC public realm but if I could have your comments that would be appreciated before we take it to the TMO as a possible design option.

Your prompt response on this would be appreciated.

Regards,

Adrian Jess
Project Architect

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] | F [REDACTED] | www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010

BCSE Award Inspiring Design Primary School 2008 & Academy 2010

BSF Award Excellence in Student Engagement 2009

Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent by and on behalf of Studio E LLP and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing title box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly checked for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an attributed representative independent of this message.

Budget Cost Estimate nr. 1

prepared for

**Kensington and Chelsea Tenant Management Organisation
(KCTMO)**

relating to

**Grenfell Tower Refurbishment Works
Kensington, London**

June 2012

Notes :-

- 1 The estimate is based on prices at 2nd Quarter 2012. Please note that if the project is deferred to next year then the BCIS tender price index forecast is currently indicating an increase in tender price levels of 1.3%, from 2nd Quarter 2012 (224) to 2nd Quarter 2013 (227).
- 2 The estimate assumes that the works will be procured on a two stage tender basis, keeping IESE contractor (currently contracted under KALC) and Design Team will be novated at Stage E.
- 3 Allowances for the scope of the works have been based on the information from Studio E LLP received on 28th May (Drawing nr. 1279 SK 003, 004d, 009 and 010 and Design Team Meeting on 24th May 2012
- 4 Floor areas stated are largely derived from areas indicated on the drawings (1:200 at A1), but are indicative at this stage and subject to verification as more accurate details become available.
- 5 Costs assume a construction period of approximately 64 weeks (15 months) and works being carried out during normal working hours.
- 6 All Mechanical and Electrical services are compliant with current regulations and standard. No replacement is allowed for unless specifically stated.

Exclusions :-

No allowance has been made for the following;

- A Tender price increases beyond 3rd Quarter 2012
- B Removal of any contaminated substances, e.g. Asbestos
- C Public Realm, Drainage, soft landscaping, internal re-decoration/refurbishment works to existing 20-storey flats
- D Statutory fees including Planning and Building Control.
- E Site investigation, survey works for checking existing structural framework, drainage, existing services installations, etc., asbestos survey, contamination survey, topographical surveys.
- F Decants, removals and relocation costs.
- G Finance and legal costs
- H Out-of-hours working; requirement for 'noisy working restriction' is included in the preliminaries allowance.
- I Full VAT liability.
- J Loose furniture, fixtures and equipment, other than where indicated.
- K Internal refurbishment/fitting out to new Boxing Club (transform from existing garage)

GROSS INTERNAL FLOOR AREA (m²)

Ground including New Boxing Club and Nursery (+6385)	813.00
Mezzanine (+8995)	502.00
Walkway Level (+11605)	502.00
Walkway Level + 1	56.00
Office Level (+15874)	502.00
20-storey Residential Level (+19770 and above); GFA of 10,040m2	Excluded
	<hr/> 2,375.00

2,375.00 m2

Grenfell Tower Refurbishment Works

Budget Cost Estimate Breakdown:

Item	Descriptions	Qty	Unit	Rate £	Total £	Options	Total £
1	<u>Scope of Works</u>						
A	Demolition of existing stairs and lift enclosure (SE corner) from Ground (6385) to Existing Family and Children's Services Office level (15874)	160	m²	150	24,000		
B	Demolition of existing wall partition and doors to Existing Store, Lobby, Offices, etc.	920	m²	55	50,600		
C	Strip out of existing areas to be reformed including existing floor finishes, ceiling finishes	1,800	m²	20	36,000		
D	Removal of stepped ramp	80	m²	200	16,000		
E	Alteration to existing levels and New paving to stepped ramp removed	100	m²	200	20,000		
F	New enclosure to secure garage area (subject to confirmation); allow	1	item	50,000	50,000		
G	Clearance of existing Garages and preparation for New Boxing Club	180	m²	20	3,600		
H	Upgrade lighting and soffit treatment to deck for Boxing Club	180	m²	200	36,000		
I	New shell/enclosure for new Boxing Club	400	m²	400	160,000		
J	Infill flooring/new floor plates to existing void in existing Boxing Club, staircase area from Ground to Existing Office level	390	m²	350	136,500		
K	New enclosure to cover areas at Walkway to create new residential units	427	m²	500	213,500		
L	Forming floor opening (4m x 3.5m) on Mezzanine	1	Item	5,000	5,000		
M	New staircase (9.5m high) and forming new lift core including building into existing structure	1	Item	30,000	30,000		
N	New Platform lift	1	nr	30,000	30,000		
O	New reception/offices, common area etc. at Ground, Mezzanine Floor including new partition, new floor, wall and ceiling finishes, upgrade/modification of M&E services	1,133	m²	1,100	1,246,300		
P	New residential units at Walkway Level and Office Level including new partition, new floor, wall and ceiling finishes, upgrade/modification of M&E services	1,060	m²	1,200	1,272,000		
Q	Remove existing windows and New double-glazed pivot windows to whole tower	1,958	m²	450	881,100		
R	<u>Option 1:</u> New cladding including insulation (allow say VMZinc Rain screen Cladding) to whole tower	4,324	m²	260	1,124,240		
S	<u>Option 2:</u> New Render including insulation and inner leaf at £200/m² (Assumed existing fittings are sound and can be fixed secure to existing cladding without any replacement required)	4,324	m²	200		884,800	
T	Remove existing canopy and install new canopy	300	m²	600	180,000		
U	Cap-off and modification/adaption of existing communal heating system	1	item	10,000	10,000		
V	Cap-off incoming heating and hot water services to apartments and connect new combi boilers to existing pipework. (Assumed existing pipework can be reused for combi boiler)	128	nr	250	32,000		
W	New combi boilers to all flats, replacing the existing communal heating system (Excludes new radiators and replacement of pipework)	128	nr	2,500	320,000		
X	New Heating system and Pipe works for Office, Nursery, Boxing Club, common area at Ground floor and Mezzanine	1,423	m²	50	71,150		
Y	New communal satellite	1	item	50,000	50,000		
Z	New CCTV system (allow say 5 cameras)	1	item	30,000	30,000		
Z1	New substation for electric supply	1	item	140,000	140,000		
							6,167,990
2	Preliminaries costs (Construction period of 64 weeks), say 15% of Construction Cost:						925,199
3	Sub-total:						7,093,189
4	Contingency allowance @ 10%, say	10.0%					709,319
5	Total Estimated Construction Cost at current prices at 2nd Quarter 2012 (excluding VAT):					Say	7,803,000

NOTES FROM MEETING 7

Project: Grenfell Tower Refurbishment

File ref.: 1279-M1-013

Notes from Project Meeting held on Thursday 9 August 2012 at 14h00 at Appleyards

Present:

M. Anderson	RBKC TMO
Paul Dunkerton	RBKC TMO (TMO)
Colin Chiles	Leadbitter (LB)
Alun Dawson	Appleyards (AY)
David Hale	Appleyards
Chweecheen Lim	Appleyards
Stefano Strazzullo	Curtins Consulting (CC)
Andrew McQuatt	Max Fordham LLP
Matt Smith	Max Fordham LLP
C Churchman	Churchman Landscape Architects (CLA)
B. Sounes	Studio E LLP (SE)

Distribution:

As present

J. Caine	Curtins
Bill Watts	Max Fordham LLP
Keith Bushell	Appleyards
Jane Simpson	Jane Simpson Access
Terry Ashton	Exova
Clare Barker	Exova
Marc Watterson	Taylor Young

CLIENT BUSINESS

Action

Design Team to incorporate new residential units at Mezzanine level. SE to forward drawings to MF to test daylighting	SE
Conversion of garages opposite entrance to be included in Planning Application. To include space for recycling. (SE confirmed first with M. Watterson)	SE
Syntegra to be appointed to do BREEAM, as required by Planning.	AY
Stage C & D reports required for sign off by TMO.	All to note
2 Bed void flat (no. 145) due to become available shortly. The two void flats will be available for any detailed investigations.	
TMO will notify tenants about the removal of the satellite dishes fixed to the elevations.	TMO

SERVICES

MF to review proposal to remove vent on SW corner to permit views in/out of	MF
---	----

new stair

MF to review cold bridge details at ground. It will be difficult to avoid in the overlaid situation. MF

Existing CCTV system to be extended – MF to get details of existing system. MF

MF to give report on feasibility of installing the new heating/DHW system while keeping the existing fully operational. Also drawing showing weights of equipment on roof. MF

CONTRACTOR

K. O'Brian from Leadbitter will input on Construction Management Plan (Received but not submitted).

Leadbitter believe the noise of fixings being drilled into the concrete facades might generate the most complaints. They propose to do some testing (percussive vs diamond drilling) over the next fortnight. The latter may be quieter but also slower, more expensive and possibly provide lower pull out strengths. Mast climbers are proposed for the overcladding works. LB

Leadbitter will visit void flats to review extent of demolition & alteration. This will be critical for costing. LB

Draft programme of work has been prepared. (To be issued) Leadbitter Resident Liaison Officer (RLO) will be involved in negotiating access to tenants flats. There is a potential overlap with TMO resource which needs to be clarified. LB

Leadbitter request whole team makes use of 4 Projects. Invites to be sent to TMO. All to note

LANDSCAPE

Scope of work to extend to garages, Baseline Studios

Bike parking to be moved in opening up entrance. CLA

From the existing measures in place at the base of the tower it can be assumed that illegal parking has been an issue in the past. The balustrades and bollards limit access even across the pavement and there is a gate protecting the location for the fire tender to reach the dry riser in the entrance. It is proposed to maintain a level of control but using a retractable bollard system, managed by the Estate Inspectors.

Concern has been raised by the Estate inspectors about the potential damage to the road surface by turning vehicles. CLA

STRUCTURES

Concrete condition survey ongoing.

PREVIOUS ACTIONS

Leadbitter believe an IESE agreement similar to that used on KALC will be required and undertook to review the option of re-cycling the agreement on Grenfell Tower. LB

Leadbitter will prepare a draft programme. The outline proposal is : LB

- x Planning submission: end of August
- x Stage E/F & procurement: August/September/October
- x Start on site: February 2013

Programme to consider need for decanting (eg Nursery, Boxing club) and phasing/sequencing work to individual flats.

Co-ordination of cladding, heating and seasons critical. Input required from Leadbitter. LB

MF to provide markup or strategy drawing for changes to roof plant room to assist with pricing and coordination. MF.

MF procuring survey of existing pipework (risers and cast-in) to establish feasibility of re-using pipework.

Curtins to review scope drawings, in particular areas requiring complex demolition eg lift pit, existing lift and stair, upstand beam to existing boxing club. CC

Curtins to review impact of proposed hot water storage at roof level. CC/MF

AY to prepare upgrade to cost plan based on updated drawings tabled at meeting, including external works proposed to south of tower. Middle of following week AY

KB comment on asbestos register clarified: existing registers are several years old and make reference to reviewing condition. Has this been done? TMO

There is no existing fire strategy for the building. Exova to proceed. Exova

NEXT MEETING

Meeting scheduled for 23 August postponed for 6 September. 2pm @ Appleyards

To: alun.dawson@appleyards.co.uk[alun.dawson@appleyards.co.uk];
david.hale@appleyards.co.uk[david.hale@appleyards.co.uk]
Cc: Bruce Sounes[bruce@studioe.co.uk]; Paul Dunkerton[pdunkerton@kctmo.org.uk]
From: Mark Anderson
Sent: Thur 20/09/2012 10:37:56 AM
Subject: Project Templates - Grenfell Tower Regeneration Project
[PID Template Ver002 DRAFT.docx](#)
[Business Case Template Ver002 DRAFT.docx](#)
[Risk Register Template ver002.xlsx](#)

Good morning,

Internally we are required to follow a Project management methodology and I attach templates that relate to this.

I am mindful that you are also managing the governance aspects on KCTMO's behalf and wish to ensure that we do not duplicate your role and documentation.

Would you please advise me as to whether it is appropriate for us to conclude the attached documentation or alternatively to make use of your own documentation ?

Thank you
Mark

Mark Anderson
Director of Assets & Regeneration

t: [REDACTED]



e: manderson@kctmo.org.uk
www.kctmo.org.uk
292a Kensal Road, W10 5BE

Before printing, please think about the environment

This e-mail message has been scanned for Viruses and Content and cleared by **MailMarshal**

DISCLAIMER:

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email.

Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd. accepts no liability for any damage caused by any Virus transmitted by this email.

To: Grenfell[Grenfell@studioe.co.uk]
From: Bruce Sounes
Sent: Mon 22/10/2012 11:18:15 AM
Subject: FW: Grenfell Tower london

K:\SEA Projects\1279 Grenfell Tower\Admin\F Pre Contract\F3 Subcon Supp Eng's\Windows\Metal Technology

From: Geof Blades [mailto:geof.blades@cepgroup.co.uk]
Sent: 22 October 2012 11:08
To: Adrian Jess
Cc: Bruce Sounes; Dave Winborne
Subject: FW: Grenfell Tower london

Hi Adrian,

Further to our meeting last week ref the above project, please find attached window specification information. We trust you find these beneficial and, should you require any further information please do not hesitate to contact me, or if you prefer to contact Metal Technology direct please contact Dave Winborne on the below email or telephone number.

Kind regards

Geof Blades

All CEP companies listed are registered in England and Wales and have their registered office at Verulam Road, Stafford, ST16 3EA.

CEP Architectural Facades Ltd. Registered No 3244260

CONFIDENTIALITY NOTICE This e-mail and its contents, together with any attachments, are confidential to the sender and the intended recipient(s). If you are not the intended recipient or agent responsible for delivery to the intended recipient any unauthorised storage, use, disclosure, copying, distribution or dissemination of this e-mail or any part thereof is strictly prohibited and may be illegal. If you receive this e-mail in error please advise us by telephone on + 44 (0) 1785 223435 and delete and destroy this e-mail and any attachments and any copies thereof from your system immediately.

Although any attachments to this e-mail have been checked for viruses we make no representation and give no warranty as to the absence of viruses and you should scan this e-mail and attachments for viruses.

From: Dave Winborne [mailto:dave.winborne@metaltechnology.com]
Sent: 22 October 2012 09:24
To: Geof Blades
Subject: RE: Grenfell Tower london

Morning Geof,

Please find enclosed the specification and sales literature for the 5-20 HI+ and 5-35 HI + tilt turn window systems. We have recently installed the new 5-35 HI + window into student accommodation on the old Hammersmith Palais site in west London.

If I can be of any further assistance please do not hesitate to contact me.

Kind Regards

Dave Winborne
Architectural Advisor/Business Development Manager
Metal Technology Ltd
Mobile [REDACTED]
Fax- [REDACTED]

Email- dave.winborne@metaltechnology.com
Web- www.metaltechnology.com

To: Bruce Sounes[bruce@studioe.co.uk]; Adrian Jess[adrian@studioe.co.uk]; Blaine Cagney[blaine@studioe.co.uk]
Cc: Alun Dawson[alun.dawson@appleyards.co.uk]
From: David Hale
Sent: Thur 25/10/2012 8:12:02 AM
Subject: Grenfell Tower, Actions etc from Risk Workshop

Gents

I have almost finished the first draft risk register and rather than send you the draft document and have you fish for actions I have scheduled below the following actions for the design team to include within notes from last week's DTM:

- x Max Fordham to confirm exact requirements under Part L of regulations to prevent any further expansion of Scope
- x Max Fordham to confirm requirements if we provide new electrical service to kitchen extract fans/ provision
- x Leadbitter to strategize access plan for both site and emergency traffic – to be co-ordinated with KALC site
- x Leadbitter to contact fire brigade now to start dialogue and confirm their expectations
- x Design team to agree Contract site boundary
- x TMO to issue an escalation flow chart showing method of escalation concerning any resident violence/ refusal to grant access/ etc
- x TMO to issue team with list of 'red-flag' residents to allow safe working and so we can take precautions, i.e. no solo visits
- x Marc Watterson to give steer in likely planning conditions in reference to KALC – i.e. increase in spec of hard landscaping therefore cost increase
- x Studio E/ TMO to liaise with residents over planning substitution to mitigate risk of objections from planning consultation period
- x Leadbitter to implement intrusive asbestos surveys over 2-bed void and ancillary areas where access and contamination is risk adverse
- x Leadbitter to propose Resident Liaison Officer asap to have input into consultations
- x ALL – issue list of deputy available to mitigate risk of personnel change having negative impact
- x Leadbitter to begin liaison with Building Control (MA confirmed local authority must be used)
- x Appleyards to confirm Scope of any Party Wall Awards required
- x Appleyards / Leadbitter to finalise Preconstruction Agreement and allow LB to resource effectively

Any questions let me know

Thanks

Dave

David Hale

Graduate PM



Tubs Hill House • London Road • Sevenoaks • Kent • TN13 1BL • United Kingdom

Mob: +44 (0)7940 123456 www.appleyards.co.uk

Appleyards: now part of Artelia International: same team, enhanced expertise

This message and any attachments (the "message") is intended solely for the addressees and is confidential. If you receive this message in error, please delete it and immediately notify the sender. Any use not in accord with its purpose, any dissemination or disclosure, either whole or partial, is prohibited except formal approval. The internet can not guarantee the integrity of this message. ARTELIA (and its subsidiaries) shall (will) not therefore be liable for the message if modified.

Appleyards Limited: Registered No. 3935522 England. Vat Reg. No. 232 2357 94

Dobson White Boulcott Limited trading as Appleyards: Registered No. 5086063 England. Vat Reg. No. 539 0912 36

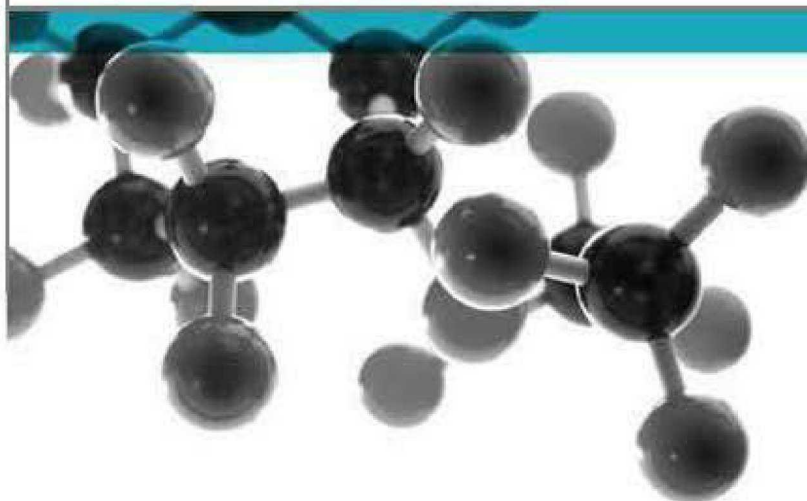
Registered Office: Tubs Hill House, London Road, Sevenoaks, Kent, TN13 1BL

Exova Warringtonfire
Bramah House
65-71 Bermondsey Street
London
SE1 3XF
United Kingdom

T: [REDACTED]
F: [REDACTED]
E: london@exova.com
W: www.exova.com



Grenfell Tower Outline Fire Safety Strategy




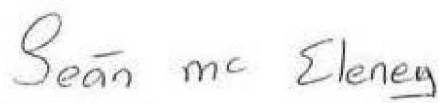
A Report to: Studio E LLP
Project No: 301922
Document Reference: MT13779R

Date: 31/10/12
Issue No: 01
Page: 1

Testing
Advising
Assuring

Revision History

Issue No : 01	Issue Date : 31/10/12
Reason for Revision: First issue	

Prepared by:	 Terry Ashton Associate (For and on behalf of Exova Warringtonfire)
Reviewed by:	 Sean McEleney Graduate Engineer (For and on behalf of Exova Warringtonfire)

Validity

This report is formulated on the basis of the information and experience available at the time of preparation. It is applicable to the above-mentioned project only in accordance with the client's instructions. It is only valid provided no other modifications are made other than those for which a formal opinion has been sought and given by Exova Warringtonfire.

Contents

1	INTRODUCTION	4
2	STATUTORY CONSIDERATIONS	5
2.1	The Building Regulations 2010	5
2.2	The Regulatory Reform (Fire Safety) Order 2005	5
2.3	London Building Acts (Amendment) Act 1939	5
3	PROPOSED OUTLINE FIRE SAFETY STRATEGY	6
3.1	Compliance with The Building Regulations 2010	6
3.1.1	Compliance with B1	6
3.1.2	Compliance with B2	7
3.1.3	Compliance with B3	7
3.1.4	Compliance with B4	8
3.1.5	Compliance with B5	8
3.2	Compliance with the Regulatory Reform (Fire Safety) Order 2005	8
3.3	Compliance with Section 20	8
4	REFERENCES	9

1 Introduction

The proposed development is the refurbishment of Grenfell Tower, a 24 storey residential block incorporating a boxing club at ground storey level, a nursery at mezzanine level (between the ground storey and walkway level) and office accommodation in the mezzanine level between walkway level and first storey level.

The refurbishment comprises:

- The creation of a new reception area and office at ground storey level;
- The re-siting of the nursery to ground storey level;
- The creation of new residential apartments in the mezzanine over the ground storey;
- The re-siting of the boxing club to walkway level;
- The creation of a community office at walkway level;
- The creation of new residential apartments in the mezzanine over walkway level; and
- Improvements to the building services.

This report details the applicable statutory controls in respect of fire safety and contains an outline fire safety strategy for compliance with these statutory controls.

The report is based upon discussions held with the design team and on drawings (numbers 1279 RE 110 05, 1279 RE112 04, 1279 RE113 04 and 1279 RE114 03) produced by Studio E LLP.

Document No.:	MT13779R	Page No.:	4 of 9
Project No.:	301922	Issue Date:	31/10/12
Client:	Studio E LLP	Issue No.:	01
		E-EQU-FT-CS-WR-F-1007 (Iss 01)	

2 Statutory Considerations

2.1 The Building Regulations 2010

The building work will have to be carried out in conformity with the requirements of Schedule 1 of the Regulations. To satisfy Regulation 4, it will be necessary to ensure that, where a building is altered, it is no more unsatisfactory in relation to the requirements of Schedule 1 than it was before the works were carried out.

The requirements of Schedule 1 relating to fire safety are:

- a) B1 (means of warning and escape);
- b) B2 (internal fire spread (linings));
- c) B3 (internal fire spread (structure));
- d) B4 (external fire spread); and
- e) B5 (access and facilities for the fire service).

Compliance with these requirements is normally achieved by meeting the standards contained in Approved Document B (ADB)^① and/or BS9991^②.

2.2 The Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order came into effect on 1 October 2006. One effect of this Order is that the owner (or the "responsible person" as defined in the Order) will have to carry out a fire risk assessment (or have a fire risk assessment carried out on his/her behalf). Compliance with the Regulatory Reform Order is normally achieved by following the guidance given in the DCLG Guide^③.

2.3 London Building Acts (Amendment) Act 1939

The building is subject to the requirements of Section 20 of the London Building Acts (Amendment) Act 1939. Under the provisions of Section 20, the Council (the Royal Borough of Kensington & Chelsea) may make requirements for the provision of the following:

- a) fire extinguishing appliances and installations;
- b) effective means of removing smoke in case of fire; and
- c) adequate means of access to the site of the building for fire brigade personnel and appliances.

The Council may also make requirements in respect of defined "special fire risk" areas in the building (such as transformer rooms, generators and boiler rooms).

Compliance with the requirements of Section 20 is normally achieved by meeting the standards contained in the LDSA Section 20 Guide^④.

3 Proposed Outline Fire Safety Strategy

3.1 Compliance with The Building Regulations 2010

3.1.1 Compliance with B1 (means of warning and escape)

FIRE DETECTION/ALARM SYSTEM

The nursery, the boxing club and the ground and walkway offices will all be provided with at least a Type "M" system as defined in BS 5839-1[®]. Each system in these three elements will be "stand alone" but interlinked so that an outbreak of fire in one of them will be enunciated on all fire alarm control panels.

New apartments will be provided with "LD3" systems of detection and sounders as defined in BS 5839-6[®].

MEANS OF ESCAPE

NURSERY

The nursery will have at least two exits direct to the exterior.

BOXING CLUB

The boxing club will have two exits: one direct to the walkway; and the other to the lift lobby of the residential tower from where access will be available to the exterior via the new stair from walkway level to ground storey level.

APARTMENTS

The new apartments in the mezzanine over walkway level will have access to the existing escape stair serving the residential tower.

The new apartments in the mezzanine over the ground storey will have access to the new stair serving the residential tower.

OFFICES

The new office at ground storey level and community room in the mezzanine over the ground storey will have exits direct to the new stair linking the existing stair serving the residential tower with the exit at ground storey level.

NEW STAIR

The new stair will be separated from the remainder of the accommodation at each level by construction having a standard of fire resistance to satisfy B5 (see below). The exits to this new stair from the new office at ground storey level, the community room on the mezzanine above the ground storey and from the boxing club at walkway level will be via lobbies enclosed to a standard of fire resistance to satisfy B5 (see below) incorporating self closing inner and outer doors to at least a "FD30S" standard.

Each of these lobbies will be ventilated to the exterior by an opening at least 0.4m² in area which will either be direct to the exterior or via suitably protected ducts. The vents will be automatic in operation and activated by smoke detectors sited within each of the areas. As an alternative to this arrangement, the community room on the mezzanine above ground storey level will be vented direct to the exterior by an automatic opening vent 0.4m² in area.

APARTMENTS

The new apartments will have protected entrance halls (i.e. entrance halls enclosed by construction having a 30 minute standard of fire resistance with the doorways therein fitted with "FD20" doors). Bathrooms and WCs will not be enclosed by fire resisting construction but, where they abut other rooms, they will be separated from the latter by walls having a 30 minute standard of fire resistance.

Document No.: MT13779R
Project No.: 301922
Client: Studio E LLP

Page No.: 6 of 9
Issue Date: 31/10/12
Issue No.: 01

E-EQU-FT-CS-WR-F-1007 (6 of 6)

The travel distance from the apartment entrance door to the door to the furthest habitable room will not exceed 9m.

An exception to these arrangements will be the apartments on the mezzanine above the ground storey. Here, the habitable rooms will be provided with escape windows (windows with an unobstructed area of 0.33m² and at least 450mm high and 450mm wide with the bottom of the openable area not more than 1100mm above floor level).

SMOKE VENTILATION OF COMMON LOBBIES

The existing smoke extract arrangements within the common lobbies in the residential tower will be overhauled and the fresh air inlet/smoke extract shafts extended to serve the new common lobby in the mezzanine above walkway level.

EMERGENCY LIGHTING

Where necessary, emergency lighting will be provided in the escape routes from the building designed in accordance with the recommendations of BS 5266^⑦.

3.1.2 Compliance with B2 (internal fire spread (linings))

All new wall and ceiling linings will be the equivalent of the following:

- a) in circulation spaces and escape routes other than circulation spaces within the apartments – Class 0 (using the UK testing methods) or Class B-s3, d2 (using the European testing methods); and
- b) elsewhere – Class 1 (using the UK testing methods) or Class C-s3, d2 (using the European testing methods) although a Class 3 standard or Class D-s3, d2 could be used within rooms not exceeding 30m² in non residential accommodation or 4m² in area within the apartments.

(NOTE: the European testing methods referred to above are the new methods developed as part of a harmonisation program for fire testing within Europe as detailed in BS EN 13501-1: 2002^⑧. Materials achieving the classifications to either the new European test method or the UK test methods are considered to be acceptable).

3.1.3 Compliance with B3 (internal fire spread (structure))

FIRE RESISTANCE OF ELEMENTS OF STRUCTURE

All new elements of structure will be constructed to have the same standard of fire resistance as that of the existing elements. This is assumed to be 120 minutes for the structural frame and 60 minutes for floors.

COMPARTMENTATION

Compartment walls and/or floors will be provided:

- a) Between apartments and other apartments;
- b) Between apartments and common areas;
- c) Between the nursery and the remainder of the building;
- d) Between the boxing club and the remainder of the building; and
- e) Between the offices and the remainder of the building.

Document No.:	MT13779R	Page No.:	7 of 9
Project No.:	301922	Issue Date:	31/10/12
Client:	Studio E LLP	Issue No.:	01
		E-EQU-FT-CS-WR-F-1007 (ISSUE)	

Compartment walls and floors will have a 60 minute standard of fire resistance unless they form part of the structural frame of the building (where they will have a 120 minute standard of fire resistance). Doorways within compartment walls will be fitted with self closing doors having a 60 minute standard of fire resistance except where a different standard will be necessary to satisfy B5 (see below).

3.1.4 Compliance with B4 (external fire spread)

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.

3.1.5 Compliance with B5 (access and facilities for the fire service)

A new inlet to the existing dry rising main will be provided in a location where it will be within 18m (and in sight of) where a pumping appliance could pull up.

Access to the building for fire service personnel will either be at ground storey level or walkway level. If access is obtained at ground storey level, fire service personnel will have to proceed up the internal stair to either the mezzanine above the ground storey or to walkway level. Outlets from the dry rising main will be provided in the common lobbies at both these levels and in the mezzanine over walkway level.

The entrance hall containing the stair will be separated from all the accommodation by construction having a 120 minute standard of fire resistance. All connections to the accommodation in this enclosure (except the connections to the common lobbies) will be via lobbies enclosed to the same standard of fire resistance with the openings fitted with self closing doors of the following standard:

- To the accommodation – "FD60S"; and
- To the stair – "FD30S".

As stated above, these lobbies will be ventilated.

3.2 **Compliance with the Regulatory Reform (Fire Safety) Order 2005**

It is considered that the fire safety measures described above will satisfy the requirements of the Regulatory Reform (Fire Safety) Order.

Portable fire-fighting equipment (fire extinguishers) will be provided in the nursery, boxing club and office accommodation in accordance with the recommendations of BS 5306-8⁹.

3.3 **Compliance with Section 20**

It is considered that the fire safety measures described above will meet most of the objectives of Section 20.

Openable windows equal to 2.5% of the area of each of the altered storeys will be provided. These will, where practicable, be sited on opposing faces of the building to provide cross ventilation.

4 References

1. Approved Document B. Fire safety. Volume 2 – Buildings other than Dwellinghouses. Department for Communities and Local Government - TSO 2006
2. BS 9991: 2011. Fire safety in the design, management and use of residential buildings
3. Fire Safety Risk Assessment – sleeping accommodation. Department for Communities and Local Government 2006
4. London District Surveyors Association Fire Safety Guide No. 1. Fire Safety in Section 20 Buildings – LDSA Publications 1998
5. BS 5839-1: 2002. Fire detection and alarm systems for buildings: Part 1: Code of practice for system design, installation, commissioning and servicing
6. BS 5839-6: 2004. Fire detection and alarm systems for buildings - Part 6: Code of practice for the design, installation and maintenance of fire detection and fire alarm systems in dwellings
7. BS 5266: Part 1: 1999 Emergency lighting. Code of practice for emergency lighting of premises other than cinemas and certain other specified premises used for entertainment
8. BS EN 13501-1: 2002. Fire classification of construction products and building elements. Classification using data from reaction to fire tests
9. BS 5306-8: 2000. Fire extinguishing installations and equipment on premises. Part 8: Selection, and installation of portable fire extinguishers – Code of practice

To: A.McQuatt@maxfordham.com[A.McQuatt@maxfordham.com]
Cc: M.Smith@maxfordham.com[M.Smith@maxfordham.com]; Grenfell[Grenfell@studioe.co.uk]
From: Adrian Jess
Sent: Thur 01/11/2012 10:15:22 AM
Subject: FW: Grenfell Tower
[MT13779R.Iss.01 - Grenfell Tower - OFSS.pdf](#)

Andrew / Matt,

You might find this useful. In setting out the level of fire detection and emergency lighting

Regards,

Adrian Jess
SE LLP

From: Margaret Treanor [mailto:Margaret.Treanor@Exova.com]
Sent: 31 October 2012 16:22
To: Adrian Jess
Subject: Grenfell Tower

Our Ref: 301922/MT13779E

Hi Adrian

Please find attached Issue 01 outline fire safety strategy for the above project. The report is sent by email only. A paper copy can be provided on request if required.

If we can be of any further assistance, please do not hesitate to contact us.

Regards

Margaret Treanor
Divisional Support Services Assistant
Exova Warringtonfire



Exova Warringtonfire
Bramah House
65-71 Bermondsey Street
London
SE1 3XF
T: [REDACTED]
F: [REDACTED]

margaret.treanor@exova.com
<http://www.exova.com>
Testing. Advising. Assuring.

This transmission may contain information that is privileged, confidential and /or exempt from disclosure under applicable Law.

If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or use of the information contained herein is STRICTLY PROHIBITED. If you receive this transmission in error, please immediately

contact the sender and destroy the material in its entirety, whether in electronic or hard copy format.

Exova is the trading name of Exova Group Limited, Exova Group BV and all subsidiaries therein.

Exova Group Ltd. Registered office: 6 Coronet Way, Centenary Park, Salford, Manchester M50 1RE. Registered in the United Kingdom, Company Number 06720350.

Exova Warringtonfire Aus Pty Ltd Registered office: Unit 2, 409-411 Hammond Road, Dandenong, VIC 3175, Australia, ABN 81 050 241 524.

Exova Group BV is registered in The Netherlands.

Please consider the environment before printing this e-mail and any associated attachments.

To: Margaret Treanor[Margaret.Treanor@Exova.com]; Alun Dawson[alun.dawson@appleyards.co.uk]
Cc: Bruce Sounes[bruce@studioe.co.uk]; Terry Ashton[Terry.Ashton@Exova.com]
From: David Hale
Sent: Thur 25/10/2012 10:50:33 AM
Subject: RE: 301922 Grenfell Tower - James Lee

Hi Margaret

I have picked this up with TMO and will let you know how to proceed.

Thanks
Dave

David Hale

Graduate PM



Tubs Hill House • London Road • Sevenoaks • Kent • TN13 1BL • United Kingdom

Tel: +44 (0)1793 555555 Mob: +44 (0)7799 555555 www.appleyards.co.uk

Appleyards: now part of Artelia International: same team, enhanced expertise

This message and any attachments (the "message") is intended solely for the addressees and is confidential. If you receive this message in error, please delete it and immediately notify the sender. Any use not in accord with its purpose, any dissemination or disclosure, either whole or partial, is prohibited except formal approval. The internet can not guarantee the integrity of this message. ARTELIA (and its subsidiaries) shall (will) not therefore be liable for the message if modified.

Appleyards Limited: Registered No. 3935522 England. Vat Reg. No. 232 2357 94

Dobson White Boulcott Limited trading as Appleyards: Registered No. 5086063 England. Vat Reg. No. 539 0912 36

Registered Office: Tubs Hill House, London Road, Sevenoaks, Kent, TN13 1BL

From: Margaret Treanor [mailto:Margaret.Treanor@Exova.com]

Sent: 25 October 2012 10:21

To: Alun Dawson

Cc: Bruce Sounes; David Hale; Terry Ashton

Subject: RE: 301922 Grenfell Tower - James Lee

Importance: High

Alun

Please can you advise the status of our fee proposal ref: MT13495FP dated 09/05/12 for a fixed fee of £8600 + VAT (copy attached for convenience) for the UPGRADE WORKS. To date we have not received any further details related to whom we should be invoicing or a Purchase Order (if applicable). Our fees to date against this work (Stage C) currently stand at £1950.25 + VAT for the period 22/05/12 to 10/10/12. A response by return would be appreciated to enable us to invoice this month.

We have already received acceptance of our fee proposal MT545FP dated 12/06/12 for a fixed lump sum of £2865 + VAT for the EXISTING CONDITION whereby we were instructed to invoice KCTMO and quote G3566E on invoices.

Regards

Margaret Treanor: Divisional Support Services Assistant, Fire Engineering (Europe), London

T: +44 (0)20 7616 6666 F: +44 (0)20 7616 6666

Exova Warringtonfire



<hr< ST1:PLACE=""> size=2 width="100%" align=center tabindex=-1>

From: Alun Dawson [<mailto:alun.dawson@appleyards.co.uk>]

Sent: 18 July 2012 13:01

To: Terry Ashton

Cc: Bruce Soules; David Hale

Subject: RE: 301922 Grenfell Tower - James Lee

Terry

I just wanted to drop you a short note, to confirm that the Client has now confirmed your proposed fee is approved – to which end we would now ask that you engage with Bruce @ Studio E, in respect of the above project forthwith.

We are currently reviewing how to formalise consultant appointments – as it may be that we have one main appointment with Studio E who then sub-consult to all other parties (incl yourselves), which may take a week or so to resolve

Can you please confirm by return you are happy to proceed in the interim on the basis of this email as an instruction on behalf of the Client in respect of the same.

Kind regards

Alun

From: James Lee [<mailto:James.Lee@Exova.com>]

Sent: 17 July 2012 08:51

To: bruce@studioe.co.uk; Alun Dawson; manderson@kctmo.org.uk; Chris Churchman; ColinChiles@Leadbitter.co.uk; john.caine@curtins.com; Jon Bannister

Cc: Terry Ashton

Subject: 301922 Grenfell Tower - James Lee

Morning All,

I am writing to inform you that I shall be leaving Exova Warringtonfire at the end of this week. After my departure, you will be left in the capable hands of Terry Ashton (cc'd into this email) who will take responsibility for my projects.

The time has come for me to bid you farewell as I move on in my career. Please allow me to thank you for a great business relationship. It has been my honor and delight to have worked with you and I do hope that our paths may cross again.

Regards,

James Lee
Consultant, Fire Engineering (Europe)
Exova Warringtonfire



Exova Warringtonfire
Bramah House
65-71 Bermondsey Street
London SE1 3XF

T: [REDACTED]
F: [REDACTED]

james.lee@exova.com
<http://www.exova.com>

Testing. Advising. Assuring.

This transmission may contain information that is privileged, confidential and /or exempt from disclosure under applicable Law.

If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or use of the information contained herein is STRICTLY PROHIBITED. If you receive this transmission in error, please immediately contact the sender and destroy the material in its entirety, whether in electronic or hard copy format.

Exova is the trading name of Exova Group Limited, Exova Group BV and all subsidiaries therein.

Exova Group Ltd. Registered office: 6 Coronet Way, Centenary Park, Salford, Manchester M50 1RE. Registered in the United Kingdom, Company Number 06720350.

Exova Warringtonfire Aus Pty Ltd Registered office: Unit 2, 409-411 Hammond Road, Dandenong, VIC 3175, Australia, ABN 81 050 241 524.

Exova Group BV is registered in The Netherlands.

Please consider the environment before printing this e-mail and any associated attachments.

This transmission may contain information that is privileged, confidential and /or exempt from disclosure under applicable Law.

If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or use of the information contained herein is STRICTLY PROHIBITED. If you receive this transmission in error, please immediately contact the sender and destroy the material in its entirety, whether in electronic or hard copy format.

Exova is the trading name of Exova Group Limited, Exova Group BV and all subsidiaries therein.

Exova Group Ltd. Registered office: 6 Coronet Way, Centenary Park, Salford, Manchester M50 1RE. Registered in the United Kingdom, Company Number 06720350.

Exova Warringtonfire Aus Pty Ltd Registered office: Unit 2, 409-411 Hammond Road, Dandenong, VIC 3175, Australia, ABN 81 050 241 524.

Exova Group BV is registered in The Netherlands.

Please consider the environment before printing this e-mail and any associated attachments.

To: David Lloyd Jones[david@studioe.co.uk]
Cc: Andrzej Kuszell[andrzej@studioe.co.uk]
From: Bruce Sounes
Sent: Thur 08/11/2012 9:54:35 AM
Subject: RE: grenfell Review

As soon as Andrzej is here and available.

Bruce

From: David Lloyd Jones
Sent: 08 November 2012 09:38
To: Bruce Sounes
Cc: Andrzej Kuszell
Subject: RE: grenfell Review

Yes, what time?

D

From: Bruce Sounes
Sent: 07 November 2012 16:42
To: David Lloyd Jones
Cc: Andrzej Kuszell
Subject: grenfell Review

David,

Have you got time tomorrow to do a design review for Heston? Would have liked to do it today but Stage C is dragging on while we wait for the others to forward their material. And I'm several hours in debt to sleep from Monday and Tuesday.

Bruce

To: Bruce Sounes[bruce@studioe.co.uk]
Cc: Paul Dunkerton[pdunkerton@kctmo.org.uk]
From: Mark Anderson
Sent: Fri 30/11/2012 1:05:54 PM
Subject: GTRP color scheme

Good afternoon
I have taken soundings internally about the color scheme
The general approach is liked and supported
The color palette (yellow orange red etc) is not so well supported
What thoughts do you have on alternative color palettes ?
Regards
Mark

This e-mail message has been scanned for Viruses and Content and cleared
by MailMarshal
#####

.
.
.
DISCLAIMER:

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email.

Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd. accepts no liability for any damage caused by any Virus transmitted by this email.

This e-mail and all attachments is CONFIDENTIAL.
If received in error please delete it. The TMO monitors and records all e-mail that it sends and receives.
Unless stated explicitly, this message does NOT form a legally binding contract or agreement.

To: Paul Dunkerton[pdunkerton@kctmo.org.uk]
Cc: Mark Anderson[manderson@kctmo.org.uk]; Grenfell[Grenfell@studioe.co.uk]
From: Adrian Jess
Sent: Thur 06/12/2012 6:18:20 PM
Subject: FW: Grenfell Tower Highways appointment
[Grenfell Tower - Curtins Transport Fee Proposal 04.12.12.pdf](#)

Paul / Mark,

Please find attached a fee proposal from Curtin's Highways for design consultation on Grenfell Tower up to Stage D.

We are of the view that for the highways advice to be effective a face to face meeting with the estate management would be necessary. As Keith is based in Manchester he will probably need a couple of days minimum notice to arrange travel to site.

Would it be possible to set something up early next week?

Regards,

Adrian
SE LLP

From: Keith York [mailto:Keith.York@curtins.com]
Sent: 06 December 2012 15:28
To: Adrian Jess
Subject: RE: Grenfell Tower Highways appointment

Hello Adrian,

Please find attached proposal for you review and to forward on to the client.

It would be good to catch up following your meeting today and we can sort out what needs doing over the course of next week (eg contact details for meetings etc).

Many thanks,
Keith

Keith York Associate
Curtins Consulting
T. [REDACTED] M. [REDACTED] | keith.york@curtins.com

From: Adrian Jess [mailto:adrian@studioe.co.uk]
Sent: 04 December 2012 17:41
To: Keith York
Cc: Grenfell
Subject: RE: Grenfell Tower Highways appointment

Keith,

I haven't heard back from Paul Dunkerrton. I think from your point of view assume you are not required to attend this Thursday, if we do get a last minute meeting with the estates management I can feed back what they say.

Regards,

Adrian
SE LLP

From: Keith York [mailto:Keith.York@curtins.com]
Sent: 03 December 2012 10:37
To: Adrian Jess

Subject: Re: Grenfell Tower Highways appointment

Hi Adrian,

I tried to reach you this morning but I understand you may be out and about.

I was out of the office last week and have since managed to hurt my back at the weekend! I should be fine in a day or so.

Can you give me a call on my mobile please (07525 233 734) and we can talk about the Grenfell scheme. I've kept Thursday free on the premise that our appointment is approved etc.

Many thanks,
Keith

From: Adrian Jess [<mailto:adrian@studioe.co.uk>]
Sent: Wednesday, November 28, 2012 04:04 PM
To: Keith York
Cc: Grenfell <Grenfell@studioe.co.uk>; Stefano Strazzullo
Subject: Grenfell Tower Highways appointment

Hi Keith,

I'm not sure if Stefano has spoken to you or not but it was decided at the last Grenfell project meeting that we need a bit a bit of design support in terms of the vehicle movements, access and control around the base of the tower, baseline deliveries area and the undercroft garage conversions.

If you could put a fee bid together that will help us define the highways scope of works and see us through to the end of the current stage D. The intention is to finalise the stage D report by Fri the 14th so I think you will need to allow for:

- x attending 1 design workshop at our office (next Thurs. 6th @ 2pm)
- x attendance at a site meeting to sit down with the estate managers (TBC by TMO)
- x Swept path drawings for the baseline service yard and access to the refuse area at the base of the tower
- x A summary of the highways scope and design proposals for inclusion in a Stage D report.

Please give me a call to discuss further when you are back in the office.

This will be for a direct appoint with the TMO.

Regards,

Adrian Jess
Project Architect

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] | F [REDACTED] | www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010

BCSE Award Inspiring Design Primary School 2008 & Academy 2010

BSF Award Excellence in Student Engagement 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent for and on behalf of Studio E LLP and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP.

To: Paul Dunkerton[pdunkerton@kctmo.org.uk]
Cc: Mark Anderson[manderson@kctmo.org.uk]; Bruce Sounes[bruce@studioe.co.uk]
From: Marc Watterson
Sent: Tue 04/12/2012 4:54:02 PM
Subject: Grenfell - determination timescales

Paul

You may be aware that RBKC planning authority is under increasing pressure to determine more of their applications within given national timescales, in this case 8 weeks. As you know, with the ongoing negotiations we are likely to exceed that timeframe. One way that the LPA can avoid this contributing to poor statistics is to agree a 'Planning Performance Agreement'. This is a simple document that we, on your behalf, and RBKC sign that in effect extends the timescale. This is fairly common practice and has been done for KALC for example.

I trust that you are comfortable with this – we will of course work to a successful determination as quickly as possible in any event.

Please give me a call if you wish to discuss.

Kind Regards

Marc Watterson
Principal Town Planner

IBI Taylor Young

Chadsworth House
Wilmslow Road
Handforth
Cheshire
SK9 3HP

DDI

Tel

Fax



marc.watterson@tayloryoung.co.uk
www.tayloryoung.co.uk

Season's greetings to all our clients and colleagues. IBI Taylor Young will not be sending cards this year but will instead be sponsoring a series of charitable fund raising events to be undertaken by staff during 2013.

IBI Taylor Young is part of the [IBI Group](#).

please consider the environment before printing this e-mail: thank you.

[legal notice](#)

To: Bruce Sounes[bruce@studioe.co.uk]; Grenfell[Grenfell@studioe.co.uk]
Cc: 11833 Grenfell Tower[11833.GrenfellTower@appleyards.co.uk]; Mark Anderson[manderson@kctmo.org.uk]; 'Paul Dunkerton'[pdunkerton@kctmo.org.uk]
From: David Hale
Sent: Fri 07/12/2012 10:21:35 AM
Subject: RE: Grenfell Tower Regeneration Project, Stage D

Hi Bruce

Thanks for the update – it sounds as if we have a clearer way forward now.

I am a bit surprised to see a green scheme back again – I thought that the AAP was against green..? We were also going to have some images in context to show relationship to KALC.

Can the next iteration get over to the planners by the end of today..?

Regards

Dave

David Hale

Graduate PM



Tubs Hill House • London Road • Sevenoaks • Kent • TN13 1BL • United Kingdom

GROUP: **Artelia** Mob: **[REDACTED]** www.appleyards.co.uk

Appleyards: now part of Artelia International: same team, enhanced expertise

This message and any attachments (the "message") is intended solely for the addressees and is confidential. If you receive this message in error, please delete it and immediately notify the sender. Any use not in accord with its purpose, any dissemination or disclosure, either whole or partial, is prohibited except formal approval. The internet can not guarantee the integrity of this message. ARTELIA (and its subsidiaries) shall (will) not therefore be liable for the message if modified.

Appleyards Limited: Registered No. 3935522 England. Vat Reg. No. 232 2357 94

Dobson White Boulcott Limited trading as Appleyards: Registered No. 5086063 England. Vat Reg. No. 539 0912 36

Registered Office: Tubs Hill House, London Road, Sevenoaks, Kent, TN13 1BL

From: Bruce Sounes [mailto:bruce@studioe.co.uk]
Sent: 06 December 2012 20:47
To: David Hale; Grenfell
Cc: 11833 Grenfell Tower; Mark Anderson; 'Paul Dunkerton'
Subject: RE: Grenfell Tower Regeneration Project, Stage D

David, Mark,

Please see attached the response from the Planners via Marc Watterson. It is good to hear the Authority is keen to make a decision.

I also spoke to Edward George yesterday and his comment was that with the enhanced top to the tower and the removal of the canopy they were less concerned about the need for a bold colourful statement. They want something lighter. The last image produced today is attached (and needs to be lighter). We think the elevated crown around the plant might make more sense, possibly as a perforated or translucent element.

The list of deliverables, in draft is attached and will be circulated.

Leadbitter have not yet made contact with us about a follow-on appointment.

Regards

Bruce Sounes

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] | F [REDACTED] | www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010

BCSE Award Inspiring Design Primary School 2008 & Academy 2010

BSF Award Excellence in Student Engagement 2009

Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent for and on behalf of Studio E and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorized representative independent of this message.

From: David Hale [<mailto:david.hale@appleyards.co.uk>]

Sent: 06 December 2012 17:47

To: Bruce Sounes; Grenfell

Cc: 11833 Grenfell Tower; Mark Anderson; 'Paul Dunkerton'

Subject: Grenfell Tower Regeneration Project, Stage D

Hi Bruce

Further to our telecom this morning please let us know how your dialogue with the planning officer goes tomorrow with regards to the latest substitution – have you any steer on when this would hit a committee...?

Assuming no further major changes we can compile the Stage D report for issue next week.

In the background if you could, as agreed, start to compile your list of deliverables for issue to Leadbitter (and as agreed advise the remaining consultants to do the same) and so therefore begin the novation discussions.

Regards

Dave

David Hale

Graduate PM



Tubs Hill House • London Road • Sevenoaks • Kent • TN13 1BL • United Kingdom

Tel : [REDACTED] • Mob: [REDACTED] • www.appleyards.co.uk

Appleyards: now part of Artelia International: same team, enhanced expertise

This message and any attachments (the "message") is intended solely for the addressees and is confidential. If you receive this message in error, please delete it and immediately notify the sender. Any use not in accord with its purpose, any dissemination or disclosure, either whole or partial, is prohibited except formal approval. The internet can not guarantee the integrity of this message. ARTELIA (and its subsidiaries) shall (will) not therefore be liable for the message if modified.

Appleyards Limited: Registered No. 3935522 England. Vat Reg. No. 232 2357 94

Dobson White Boulcott Limited trading as Appleyards: Registered No. 5086063 England. Vat Reg. No. 539 0912 36

Registered Office: Tubs Hill House, London Road, Sevenoaks, Kent, TN13 1BL

To: Bruce Sounes[bruce@studioe.co.uk]; 'Marc Watterson'[marc.watterson@tayloryoung.co.uk]
Cc: Grenfell[Grenfell@studioe.co.uk]; 'David Hale'[david.hale@appleyards.co.uk]; Paul Dunkerton[pdunkerton@kctmo.org.uk]
From: Mark Anderson
Sent: Mon 10/12/2012 12:29:45 PM
Subject: RE: Grenfell Tower - Rooftop

Good afternoon,

Further to our discussion on Friday and having taken soundings internally, we are not inclined to take forward the suggested art approach and prefer the previously suggested crown arrangement.

I look forward to receipt of the latest design proposals later this week.

Thank you
Mark

Mark Anderson
Director of Assets & Regeneration

t: [REDACTED]



e: manderson@kctmo.org.uk
www.kctmo.org.uk
292a Kensal Road, W10 5BE

Before printing, please think about the environment

From: Bruce Sounes [mailto:bruce@studioe.co.uk]
Sent: 07 December 2012 17:17
To: 'Marc Watterson'
Cc: Grenfell; Mark Anderson; 'David Hale'
Subject: Grenfell Tower - Rooftop

Marc,

Please see attached a proposal for introducing a graphic to an enhanced plant enclosure. Might be eligible for funding from public arts budget.

I've done a crude photomontage comparison of a crown-on-edge or crown inboard. I agree the on-edge is better, for instance with a perforated material as below, but a graphic would be over-kill in this instance.

There are cons against on-edge option: demolition and more metal on the roof and a lot more cost.



In terms of zinc cladding we would propose the Rheinzink Blue Grey throughout:

[Google Images Search - Rheinzink Blue Grey](#)

I think the composite VMZinc is too dark, but we are unsure whether the Rheinzink composite is available in the UK, or the cost. There may be other bright alternatives in aluminium, but not zinc.

Please can we speak first thing on Monday?

Regards

Bruce Sounes

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] | F [REDACTED] | www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010
BCSE Award Inspiring Design Primary School 2008 & Academy 2010
BSF Award Excellence in Student Engagement 2009
Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent for and on behalf of Studio E and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorised representative independent of this message

This e-mail message has been scanned for Viruses and Content and cleared by **MailMarshal**

DISCLAIMER:

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email.

Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd accepts no liability for any damage caused by any Virus transmitted by this email.

To: Mark Anderson[manderson@kctmo.org.uk]
Cc: Marc Watterson[marc.watterson@tayloryoung.co.uk]
From: Bruce Sounes
Sent: Mon 10/12/2012 10:04:27 PM
Subject: RE: Grenfell Tower - Rooftop

Mark,

I apologise for sending you information piecemeal but see below some thoughts explored today. Both options show a ~2.6m high ribbon element.

Perforated mesh, faceted:



Aluminium Slats, 75x200mm, coloured:



I don't want to pre-judge these – both potentially work well – I'll wait until the morning.

Speaking to Marc earlier today the Planners responded positively to the dappled base (not the red). I'm not clear how base, middle and top relate to one another yet.



Regards

Bruce

From: Mark Anderson [mailto:manderson@kctmo.org.uk]
 Sent: 10 December 2012 12:30

To: Bruce Sounes; 'Marc Watterson'
Cc: Grenfell; 'David Hale'; Paul Dunkerton
Subject: RE: Grenfell Tower - Rooftop
Importance: High

Good afternoon,

Further to our discussion on Friday and having taken soundings internally, we are not inclined to take forward the suggested art approach and prefer the previously suggested crown arrangement.

I look forward to receipt of the latest design proposals later this week.

Thank you
Mark

Mark Anderson
Director of Assets & Regeneration

t: [REDACTED]



e: manderson@kctmo.org.uk
www.kctmo.org.uk
292a Kensal Road, W10 5BE

Before printing, please think about the environment

From: Bruce Sounes [<mailto:bruce@studioe.co.uk>]
Sent: 07 December 2012 17:17
To: 'Marc Watterson'
Cc: Grenfell; Mark Anderson; 'David Hale'
Subject: Grenfell Tower - Rooftop

Marc,

Please see attached a proposal for introducing a graphic to an enhanced plant enclosure. Might be eligible for funding from public arts budget.

I've done a crude photomontage comparison of a crown-on-edge or crown inboard. I agree the on-edge is better, for instance with a perforated material as below, but a graphic would be over-kill in this instance.

There are cons against on-edge option: demolition and more metal on the roof and a lot more cost.



In terms of zinc cladding we would propose the Rheinzink Blue Grey throughout:

[Google Images Search - Rheinzink Blue Grey](#)

I think the composite VMZinc is too dark, but we are unsure whether the Rheinzink composite is available in the UK, or the cost. There may be other bright alternatives in aluminium, but not zinc.

Please can we speak first thing on Monday?

Regards

Bruce Sounes

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] | F [REDACTED] | www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010
BCSE Award Inspiring Design Primary School 2008 & Academy 2010
BSF Award Excellence in Student Engagement 2009
Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent for and on behalf of Studio E and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorised representative independent of this message

This e-mail message has been scanned for Viruses and Content and cleared by **MailMarshal**

DISCLAIMER:

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email.

Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd accepts no liability for any damage caused by any Virus transmitted by this email.

To: Bruce Sounes[bruce@studioe.co.uk]
From: Marc Watterson
Sent: Wed 12/12/2012 9:09:06 AM
Subject: RE: Grenfell Tower - Envelope development

Bruce

Like the idea of the taller crown – like you not quite convinced on the use of colour in these images but am sure that can be resolved...

Kind Regards

Marc Watterson
Principal Town Planner

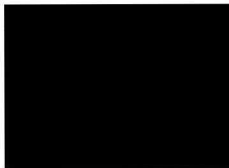
IBI Taylor Young

Chadsworth House
Wilmslow Road
Handforth
Cheshire
SK9 3HP

DDI

Tel

Fax



marc.watterson@tayloryoung.co.uk

www.tayloryoung.co.uk

Season's greetings to all our clients and colleagues. IBI Taylor Young will not be sending cards this year but will instead be sponsoring a series of charitable fund raising events to be undertaken by staff during 2013.

IBI Taylor Young is part of the [IBI Group](#).

please consider the environment before printing this e-mail: thank you.

[legal notice](#)

From: Bruce Sounes [mailto:bruce@studioe.co.uk]

Sent: 11 December 2012 22:16

To: Marc Watterson

Subject: Grenfell Tower - Envelope development

Marc,

We're getting closer. In answer to my question from last night: I propose to link the parts with colour.

We think the crown could be improved by increasing the height – 0.5m or 1m or more. I tried numerous options and have settled on the close-boarded idea for the slats. I think we may be able to leave the existing beams in situ.

What do you think of attached? It's not quite ready to issue to Ed. I don't think the green travels up (or down) the building in an entirely convincing manner and I would like to do an option increasing the height of the crown. I'm thinking the windows will not be as dark as we showed previously

Available Trespa colours below.



Regards

Bruce Sounes

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] 6 | F [REDACTED] 6 | www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010
BCSE Award School Architect of the Year 2008 & 2010
BCSE Award Inspiring Design Primary School 2008 & Academy 2010
BSF Award Excellence in Student Engagement 2009
Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent for and on behalf of Studio E and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly reviewed for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorized representative independent of this message.

Grenfell Tower Summary Costs;

Current scheme

	Main Elements	Cost
(A)	8 new social housing units consisting of two X 1- bed flats, two X 2-bed flats on mezzanine level and four X 4-bed flats on walkway + 1	£884,253.69
(B)	Minor refurbishment works to existing 20-storey flats and lobbies, i.e. services encasement and bulkhead plasterboard ceiling (120 units)	£170,000.00
(C)	Nursery and Offices	£462,239.01
(D)	Baseline work spaces/Garage Offices= 293m2	£530,674.10
(E)	Boxing club	£517,691.50
(F)	Public realm	£223,075.00
(G)	Demolitions	£182,170.00
(H)	External cladding and roof to main building	£2,342,226.00
(I)	Central Services	£2,164,945.70
1	Estimated Construction Cost Excluding Preliminaries and Contingency; Sub-total (A to I):	£7,477,269.00
2	Preliminaries (15% of construction costs) (includes overheads and profit)	£1,121,590.35
	Sub-total 1	£8,598,859.34
3	Client's Contingency Allowance (fixed sum)	£765,000.00
4	Estimated Construction Costs	£9,364,000.00

Professional Fees	£ 900,000.00
Surveys	£ 50,000.00
Planning and Building Control Fees	£ 100,000.00
KCTMO / S106 Fees	£ 180,000.00
Client Contingency on fees above @ 10%	£ 123,000.00

OVERALL PROJECT COST (EXCL VAT) £ 10,717,000.00

Issues with current scheme

- x Current construction cost assessed by Appleyards £ 9.36m Vs Leadbitter costs for current scheme £ 10.048m
- x Large expenditure for boxing club and nursery with no revenue return,
- x Current heating solution does not consider options for boiler plant which also serves finger blocks. Alternative scheme gives options to upgrade finger blocks at later date.
- x Garage conversion to offices is desirable and not essential
- x Does not allow for kitchen and bathroom replacements, or electrical rewires for Decent Homes standards
- x Crown is expensive and purely aesthetic
- x No allowance for communal decorations which would support our cyclical programme
- x Does not include opportunity to up grade door entry system

Savings from Value Engineering options

Proposal	Savings	Other implications	TMO Yes/No
Leaving the nursery and boxing club in situ.	-£573k	Disappointment of Nursery and Boxing club that they are no longer receiving the promised scheme. Consideration to whether small budget could be allowed for refresh - say 10k for Nursery and Boxing club. Both will still benefit from improved temperature controls. Nursery will still benefit from play area included within KALC scheme.	
The revised scheme will have 7 units of social housing flats, consist of three 4-bed flats on walkway level and four 4-bed flats on Walkway +1 level; total cost £791k	-93,252k	The impact of 7 number 4 bed units is a high proportion of large units compact in lower section of building.	
Cost options for heating proposals. Omit – heat pumps, gas supply up building from basement to roof, central hot water, meters where included. Add – new gas boilers to basement for Grenfell tower only (where existing), heat interface units with meter included.	-200k	All residents to have metered heating and hot water, and better local control of heating. Service supplies up the entire building is reduced from 4 to 3 pipes which will facilitate installation. Plant will be in basement rather than roof. Possible reduction in BREEAM score and environmental benefits due to loss of heat pumps – may be able to offset if doing more kitchen and bathroom renewals	
Cold water alternative design that will omit refurbishment of cold water tanks on roof and add new tank into basement with pumps to supply building.	??	This design option will reduce costs but has yet to be fully investigated. New design will mean that on power failure there will be no cold water supply to units. TMO to advise if this option should be investigated.	

SEA00014274_0164

Omit Access to walkway Omitting the lift	-£10k -£42k	Omitting this will cause planning concern as access is being reduced as part of scheme without this. Planning consultant and architect to investigate planning views and options by 24 th May.	
Change of internal and external light fittings to lower specification and from LED to conventional.	-£155k	Increase in running costs and maintenance due to change from LED to conventional lamps. Risk that external lighting spec may not be able to be reduced as will need to match into KALC specification for planning consistency – however, likely that KALC will make a similar proposal	
Complete omission of any works to existing garages, bin store (Item D on page 1) including conversion into offices	531k		
Reduce high level cladding from 4m to 2m on roof of building – removing the crown	-£40k	Planners will need to be consulted as they were keen to see defined top, middle and bottom to the building. Planning consultant advisor suggests colour change of cladding to upper level could provide this definition.	
Total	£1,644,252		

Actual construction

Appleyards stage D cost plan as of 4th April excluding Preliminaries and Contingency: £ 7,477,269

Minus Value engineer savings as above: £
1,644,252

Total £ 5,833,017

Add contractors 15% Preliminaries: (which includes O/H & profit): £
874,952

Add Client's Contingency: (fixed sum): £
765,000

Total Construction Costs: £ 7,472,969

Potential Additions (estimated cost)

Cost options for inclusion of kitchens / Bathrooms (say £ 4000 for kitchen and £ 4000 for bathroom) keystone information suggest 38 new kitchens, 70 bathrooms	£ 432,000
Potential cost of alternative access to walkway level in finger blocks (if planning insists on this due to removal of stepped ramp).	£ 20,000
Keep in Under-croft soffit to include uplighting and downlighting with new suspended ceiling to cover.	£ 60,000
Communal decorations (estimated cost from Keystone)	£ 216,000
Upgrade door entry system (existing system will need to be moved anyway to allow for any works)	£ 123,733
Total cost of all systems on Lancaster West 1	
Allowance for moving nursery to temporary location, storage cost, removal company	£ 10,000
Allow a provisional sum for renewing floor and walling finishes to existing nursery and boxing club	£ 45,000

Total above: £ 906,733

Add total from removing VE options: £ 7,472,969

Total with new scheme options as above: £ 8,379,702

Professional Fees: £ 900,000

Surveys: £ 50,000

Planning and Building Control Fees: £ 100,000

KCTMO / S106 Fees: £ 180,000

Client Contingency on fees above @ 10% £ 123,000

OVERALL PROJECT COST (EXCL VAT) £ 9,732,702

SEA00014274_0166

Stage D Cost Plan as Mark Anderson Board Report 8th January 2013

Demolition Works to Garages	£ 28,135
Refurbishment Works to Garages	£ 474,900
Demolition Works to Tower	£ 182,170
Refurbishment Works to Tower	£5,720,764
Landscaping Works	£ 246,350
Main Contractor Preliminaries	£ 997,848
Contingency @ 10%	£ 765,017
Total Construction Cost	£ 8,415,184
Professional Fees	£ 900,000
Surveys	£ 50,000
Planning and Building Control Fees	£ 100,000
KCTMO / S106 Fees	£ 180,000
Contingency @ 10%	£ 123,000
OVERALL PROJECT COST (EXCL VAT)	<u>£ 9,768,184</u>

SEA00014274_0167

Consultation Plan to planning application submission

TMO send out Newsletter	14/05/2013	Update residents that the project team need to review designs and current planning application
TMO programme board	23/05/2013	Update Board with design changes and associated cost. Also Inform Board of action plan and resident consultation plan.
Project team meeting	04/06/2013	Team to firm up new designs and discuss associated cost.
Consultation with boxing club	10/06/2013	Inform both boxing club and nursery why we are changing designs and how these changes will affect them.
Consultation with nursery	10/06/2013	
Residents evening meeting	17/06/2013	Inform residents that we are looking at the designs to assist with benefits for the block and as well as future maintenance to TMO. Presentation boards will be on display showing design changes.
TMO programme board	20/06/2013	Discuss design changes, progress with action plan and outcome of resident meeting
TMO send out Newsletter	31/07/2013	To discuss surveys and access requirements as well as progress with project and designs
Residents evening meeting	08/08/2013	Residents to view design prior to planning application submission
TMO programme board	15/08/2013	Discuss planning application due to be submitted on 16th Aug, also discuss outcome of residents meeting
Submission of planning application	16/08/2013	

Freephone
0800 137 111
www.kctmo.org.uk



Delivering excellent
Housing services
Through resident led
Management

Bruce Sounes

Studio E
Palace Wharf
Rainville Road
London W69HN

Direct Line: [REDACTED]
Facsimile: [REDACTED]
E-mail: pdunkerton@kctmo.org.uk

Date: 3rd June 2013

Dear Bruce

Grenfell Tower Refurbishment project

We are writing to advise you of our intention, as discussed at our meeting on 9th May, to reconcile all fees for work carried out to the end of April 2013 on the Grenfell Tower project.

We understand your fees to the end of April 13 are in accordance with your schedule based on the contract value upon appointment and as it grew in accordance with the cost reports:

Fees to the end of April 13:	£134,900
Less previously paid:	£95,000
Less 10% for incomplete Stage D:	£8,075
Amount to be paid:	£31,825

Also, as advised at the 9th May meeting, we are now re-mobilising the project following the re-briefing exercise.

It is our intention to set in place formal contract arrangements with you for this re-briefed project through construction to completion and we will be in touch shortly to seek fees for the follow on services.

In recognition that we have put a hold on progressing the project to allow for the re-briefing and that you will be required to re-mobilise your team for the project going forward, it is our intention to negotiate a reasonable uplift in your fees commensurate with the additional input required to develop the revised scheme, at a revised construction value, to a RIBA stage D proposal, capable of delivery.

Whilst writing, we are seeking confirmation that you will warrant your design work completed to date and that this warranty will carry on into your formal appointment to the re-briefed project.

We intend to confirm appointments going forward as soon as practicable.

We look forward to continuing to work with you to deliver this challenging and exciting project.

The Royal Borough of Kensington & Chelsea Tenant Management Organisation Ltd.
Network Hub, 292a Kensal Road, London W10 5BE

Studio E – Appleyards fee calculation 28 May 2013

Construction Value		£ 6,800,000.00	£ 8,000,000.00	£8,500,000.00	Cumulative
Fee	4.75%	£ 323,000.00	£ 380,000.00	£ 403,750.00	
Stage A-B	5.0%	£ 16,150.00			£ 16,150.00
Stage C	10.0%		£ 38,000.00		£ 54,150.00
Stage D	20.0%			£ 80,750.00	£ 134,900.00
Project on Hold					
Stage E	15.0%			£ 60,562.50	£ 195,462.50
Stage F1	12.5%			£ 50,468.75	£ 245,931.25
Stage F2	12.5%			£ 50,468.75	£ 296,400.00
Stage K	25%			£ 100,937.50	£ 397,337.50

Previous Invoices

12/1086	15/06/2012			£ 28,500.00	£ -
12/1116	15/07/2012			£ 28,500.00	£ -
12/1135	20/08/2012			£ 12,666.67	£ -
12/1150	20/09/2012			£ 12,666.67	£ -
12/1169	20/10/2012			£ 12,666.67	£ -

Total Paid to
date

£ 95,000.00

Outstanding Stage D					£ 134,900.00
Less paid to date					£ 95,000.00
Less 10% for incomplete stage D					£ 8,075.00
Outstanding (due)					£ 31,825.00

Yours sincerely



Paul Dunkerton
Project Manager for Assets and Regeneration

W: EDWARD WROBE, RICHARD CRAIG.



0

24/06/2013

- OKAY WITH PRINCIPLES FOR INDEPENDENT ACCESS ARRANGEMENTS TO FINANCE LOCKS
- E WILL LONG TERM PLAN
- O IT RIDGE -
- RC - NEED SURVEY.
- RICHARD WILL BACK ON 0

PART KUNING - HF INVOLVEMENT.

1/06/2013

END OF OCT.

28/10 -

100 + 100
100 x 100

To: BOOTH Philip[philip.booth@uk.arteliagroup.com]
Cc: Paul Dunkerton[pdunkerton@kctmo.org.uk]; David Gibson[dgibson@kctmo.org.uk]; kathryn.brindley@ibigroup.com[kathryn.brindley@ibigroup.com]; Marc Watterson (IBI Taylor Young (Handforth))[marc.watterson@tayloryoung.co.uk]
From: Bruce Sounes
Sent: Mon 22/07/2013 11:03:51 AM
Subject: RE: Grenfell Tower Regeneration - Follow up to meeting with Cllr Feilding-Mellen
[1279-SE LLP_Drg.Issue_PL.pdf](#)
[130722 Substitute drawings.docx](#)

Phil,

Link to amended drawings (2 changes from 12 July issue: revision box added to PL111 and blow up of garages added, PL125):

<https://cloud.studioe.co.uk/public.php?service=files&t=c8c5ca9d4ad6548bc33ab1e76eb3a60b>

We have printed out a full set as attached and will forward to Edward George this afternoon. Marc Watterson asked for a quick commentary on the changes, also attached for Taylor Young to include in their re-submission.

Regards

Bruce Sounes

For and on behalf of:

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] | F [REDACTED] www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010

BCSE Award Inspiring Design Primary School 2008 & Academy 2010

BSF Award Excellence in Student Engagement 2009

Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent from or on behalf of Studio E and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing status box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, conclusions and other information expressed in this message are not given or endorsed by Studio E LLP unless otherwise indicated by an authorized representative independent of this message.

From: Bruce Sounes
Sent: 19 July 2013 18:04
To: 'BOOTH Philip'
Cc: Paul Dunkerton; David Gibson; 'kathryn.brindley@ibigroup.com'
Subject: RE: Grenfell Tower Regeneration - Follow up to meeting with Cllr Feilding-Mellen

Philip,

Please confirm the TMO/RBKC have no further comments and we will proceed on Monday.

Regards

Bruce Sounes

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] | F [REDACTED] | www.studioe.co.uk



Queen's Award for Enterprise: Sustainable Development 2010

BCSE Award School Architect of the Year 2008 & 2010

BCSE Award Inspiring Design Primary School 2008 & Academy 2010

BSF Award Excellence in Student Engagement 2009

Sustainable City Award 2009



Please consider the environment before printing this email.

ELECTRONIC INFORMATION TRANSFER DISCLAIMER

This email and any files transmitted with it are sent to and on behalf of Studio E and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender. All attached files are copyright and may only be used for the purpose stated in the drawing sheet box. In the event that the files are altered in anyway, it is a condition of use that the Studio E name and logo be removed from the modified file, unless prior written agreement has been obtained. Studio E will assume no responsibility for the accuracy, adequacy, and integrity of the files, and recommends that the files be thoroughly screened for viruses prior to installation. Opinions, comments and other information expressed in this message are not given or endorsed by Studio E LLP. Risks, otherwise indicated by an attached red representative, independent of this message.

From: BOOTH Philip [<mailto:philip.booth@uk.arteliagroup.com>]

Sent: 19 July 2013 17:34

To: Bruce Sounes

Cc: Paul Dunkerton; David Gibson

Subject: RE: Grenfell Tower Regeneration - Follow up to meeting with Cllr Feilding-Mellen

Bruce,

Has planning been re-invigorated?

Philip Booth



Associate Project Manager

ARTELIA UK

Tubs Hill House • London Road • Sevenoaks • Kent • TN13 1BL • United Kingdom

Tel: [REDACTED] • Mob: [REDACTED] • www.uk.arteliagroup.com



From: BOOTH Philip
Sent: 17 July 2013 17:21
To: 'David Gibson'; Paul Dunkerton; 'Bruce Sounes'
Subject: RE: Grenfell Tower Regeneration - Follow up to meeting with Cllr Fellding-Mellen

David,

Thanks for the update. Your idea to resubmit on Friday if we haven't had any adverse feedback from Cllr sounds good to me.

Bruce please can you be in readiness to resubmit the planning information to reinvigorate on Friday should we not have any feedback.

Kind regards

Philip



Philip Booth

Associate Project Manager

ARTELIA UK

1ubs Hill House • London Road • Sevenoaks • Kent • TN13 1BL • United Kingdom

Tel : [REDACTED] Mob : [REDACTED] : www.uk.arteliagroup.com



From: David Gibson [<mailto:dgibson@kctmo.org.uk>]
Sent: 17 July 2013 16:03
To: Paul Dunkerton; BOOTH Philip
Subject: FW: Grenfell Tower Regeneration - Follow up to meeting with Cllr Fellding-Mellen

Paul, Philip,

Confirmation that info on the design has been passed onto the C'ller. I suggest we give a day or 2 to check if there is any response, and perhaps aim for Friday submission to the planners. Please confirm if this seems possible.

thanks

David Gibson
Head of Capital Investment



t: [REDACTED]

m:

a: The Network Hub, 292a Kensal Road, London, W10 5BE

Before printing, please think about the environment

From: Peter Maddison
Sent: 17 July 2013 09:57
To: David Gibson
Subject: Fw: Grenfell Tower Regeneration - Follow up to meeting with Cllr Feilding-Mellen

Director of Assets and Regeneration

t: [REDACTED]

m:

a: The Network Hub, 292a Kensal Road, London, W10 5BE

From: Peter Maddison
Sent: Tuesday, July 16, 2013 05:35 PM
To: Cllr.Feilding-Mellen@rbkc.gov.uk <Cllr.Feilding-Mellen@rbkc.gov.uk>
Subject: FW: Grenfell Tower Regeneration - Follow up to meeting with Cllr Feilding-Mellen

Dear Cllr Feilding-Mellen

Please find attached a report from Studio E Architects regarding the cladding system proposed for Grenfell Tower.

Also the links in Bruce's e-mail below give a "flythrough" of the ground floor design of the tower.

We are aiming to submit a revised planning application in the next couple of days. Can you please let me know if you are happy for us to proceed?

If you would like a further conversation on this matter, please let me know.

Many thanks

Peter

Peter Maddison
Director of Assets and Regeneration



t: [REDACTED]
m: [REDACTED]
a: The Network Hub, 292a Kensal Road, London, W10 5BE

 Before printing, please think about the environment

From: Bruce Sounes [<mailto:bruce@studioe.co.uk>]
Sent: 16 July 2013 14:17
To: Peter Maddison
Cc: Paul Dunkerton; Philip Booth (philip.booth@appleyards.co.uk); Blaine Cagney; David Gibson
Subject: Grenfell Tower Rengeneration - Follow up to meeting with Cllr Fellding-Mellen

Dear Peter,

I've prepared a rough [flythrough](#) around the proposed podium to Grenfell Tower. This could be developed further but it is time consuming to prepare and I think the drawings and visuals prepared for the meeting are enough to describe everything. [Link to boards](#) (approx 60MB)

Please also see attached a mini-report on the proposed zinc as discussed on Wednesday. I haven't littered it with too many pictures because there are links to the web pages in the document.

Look forward to receiving your comments.

Regards

Bruce Sounes

For and on behalf of

STUDIO E LLP

Palace Wharf, Rainville Road, London W6 9HN

T [REDACTED] F [REDACTED] | www.studioe.co.uk

From: Bruce Sounes [<mailto:bruce.rita@gmail.com>]
Sent: 16 July 2013 13:57
To: Bruce Sounes
Subject: You are invited to view "Bruce Sounes's photo"



[View Video](#)

If you are having problems viewing this email, copy and paste the following into your browser:

<https://picasaweb.google.com/lh/photo/ewsXEPEsGGtpFqMkuXUeLaXh5PMdcT99z2iErGSckr0?feat=email>

To share your photos or receive notification when your friends share photos, [get your own free Picasa Web Albums account](#)



This e-mail message has been scanned for Viruses and Content and cleared by **MailMarshal**

DISCLAIMER:

This E-mail and any files transmitted with are intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the System Administrator. This message may contain confidential

information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email.

Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Kensington & Chelsea TMO Ltd. Finally, the recipient should check this email and any attachments for the presence of viruses. Kensington & Chelsea TMO Ltd accepts no liability for any damage caused by any Virus transmitted by this email.

This message and any attachments (the "message") is intended solely for the addressees and is confidential. If you receive this message in error, please delete it and immediately notify the sender. Any use not in accord with its purpose, any dissemination or disclosure, either whole or partial, is prohibited except formal approval. The internet can not guarantee the integrity of this message. ARTELIA (and its subsidiaries) shall (will) not therefore be liable for the message if modified.

ARTELIA PROJECTS UK LTD - Registered Office : The Broadgate Tower 3rd Floor 20 Primrose Street London - EC2A 2RS - Trading as ARTELIA UK
Registered in England and Wales under Company Number 3913368

Freephone
0800 137 111
www.kctmo.org.uk



Delivering excellent
Housing services
Through resident led
Management

Bruce Sounes

Studio E
Palace Wharf
Rainville Road
London W69HN

Direct Line: [REDACTED]
Facsimile: [REDACTED]
E-mail: pdunkerton@kctmo.org.uk

Date: 3rd June 2013

Dear Bruce

Grenfell Tower Refurbishment project

We are writing to advise you of our intention, as discussed at our meeting on 9th May, to reconcile all fees for work carried out to the end of April 2013 on the Grenfell Tower project.

We understand your fees to the end of April 13 are in accordance with your schedule based on the contract value upon appointment and as it grew in accordance with the cost reports:

Fees to the end of April 13:	£134,900
Less previously paid:	£95,000
Less 10% for incomplete Stage D:	£8,075
Amount to be paid:	£31,825

Also, as advised at the 9th May meeting, we are now re-mobilising the project following the re-briefing exercise.

It is our intention to set in place formal contract arrangements with you for this re-briefed project through construction to completion and we will be in touch shortly to seek fees for the follow on services.

In recognition that we have put a hold on progressing the project to allow for the re-briefing and that you will be required to re-mobilise your team for the project going forward, it is our intention to negotiate a reasonable uplift in your fees commensurate with the additional input required to develop the revised scheme, at a revised construction value, to a RIBA stage D proposal, capable of delivery.

Whilst writing, we are seeking confirmation that you will warrant your design work completed to date and that this warranty will carry on into your formal appointment to the re-briefed project.

We intend to confirm appointments going forward as soon as practicable.

We look forward to continuing to work with you to deliver this challenging and exciting project.

The Royal Borough of Kensington & Chelsea Tenant Management Organisation Ltd.
Network Hub, 292a Kensal Road, London W10 5BE

Studio E – Appleyards fee calculation 28 May 2013

Construction Value		£ 6,800,000.00	£ 8,000,000.00	£8,500,000.00	Cumulative
Fee	4.75%	£ 323,000.00	£ 380,000.00	£ 403,750.00	
Stage A-B	5.0%	£ 16,150.00			£ 16,150.00
Stage C	10.0%		£ 38,000.00		£ 54,150.00
Stage D	20.0%			£ 80,750.00	£ 134,900.00
Project on Hold					
Stage E	15.0%			£ 60,562.50	£ 195,462.50
Stage F1	12.5%			£ 50,468.75	£ 245,931.25
Stage F2	12.5%			£ 50,468.75	£ 296,400.00
Stage K	25%			£ 100,937.50	£ 397,337.50

Previous Invoices

12/1086	15/06/2012			£ 28,500.00	£ -
12/1116	15/07/2012			£ 28,500.00	£ -
12/1135	20/08/2012			£ 12,666.67	£ -
12/1150	20/09/2012			£ 12,666.67	£ -
12/1169	20/10/2012			£ 12,666.67	£ -

Total Paid to
date

£ 95,000.00

Outstanding Stage D					£ 134,900.00
Less paid to date					£ 95,000.00
Less 10% for incomplete stage D					£ 8,075.00
Outstanding (due)					£ 31,825.00

Yours sincerely



Paul Dunkerton
Project Manager for Assets and Regeneration

Stage D Cost Plan rev B

prepared for

Kensington and Chelsea Tenant Management Organisation (KCTMO)

relating to

**Grenfell Tower Regeneration Project,
Kensington, London**

23rd August 2013

Notes :-

- 1 The estimate is based on prices at 3rd Quarter 2013 .
- 2 The estimate assumes that the works will be procur ed on a single stage tender basis, through OJEU pro cess.
- 3 Allowances for the scope of the works have been bas ed on the information from Studio E LLP received in August 2013 and previous information issued by Max Fordham and Curtins Consulting and Design Team Meeting on 12th August 2013.
- 4 Floor areas stated are largely derived from areas i ndicated on the drawings (1:200 at A1), but are ind icative at this stage and subject to verification as more accu rate details become available.
- 5 Costs assume a construction period of approximatel y 64 weeks (15 months) and works being carried out during normal working hours.
- 6 All Mechanical and Electrical services are complia nt with current regulations and standard. No repla cement is allowed for unless specifically stated.

Exclusions :-

No allowance has been made within the **Construction Cost** for the following:

- A Tender price increases beyond 1st Quarter 2014
- B Removal of any contaminated substances, e.g. Asbes tos
- C Public Realm, Drainage, internal redecoration/refu rbishment works to existing 20-storey flats
- D Statutory fees including Planning and Building Con trol.
- E Site investigation, survey works for checking exis ting structural framework, drainage, existing servi ces installations, etc., asbestos survey, contamination survey, topographical surveys, fire strategy
- F Decants, removals and relocation costs of existing boxing club and residents
- G Finance and legal costs
- H Out-of-hours working; requirement for 'noisy worki ng restriction' is included in the preliminaries al lowance.
- I Full VAT liability.
- J Loose furniture, fixtures and equipment, other than where indicated.
- K New enclosure, realignment of existing external wal l and wall extension to gate
- L Party Wall issues

Ref	Main Elements	Artelia UK (Updated on 23/8/13)
(A)	Refurbishment of social housing units (Mezz 3 units + Office level 4, total 7 units, Reduced from 8 units)	888,126.76
1	Demolition	Included in (g)
2	Super-structure (in-fill concrete flooring)	73,524.01
3	External wall - new enclosure consists of curtain wallings and concrete upstand	665,000.00
4	Staircases for entrance lobby and fire escapes	£44,000.00
5	Internal wall, stud partitions including acoustic lining and doors and glazed barrier screen	£110,389.00
6	Internal Wall (painting, wall tiling), Floor (timber laminate and acoustic underlay) & Plasterboard Ceiling finishes	£198,915.91
7	Fittings and furnishing including kitchen fittings and cupboards	£86,500.00
8	Sanitary appliances	Inc in M&E
9		
10	Mechanical services including above ground drainage, cold water installation, ventilation, fire alarm, BMS Excludes heating (in (i) Central Services)	£145,208.44
11	Electrical including lighting and power and External lighting	£163,699.40
(B)	Minor refurbishment works to existing 20-storey flats and lobbies, i.e. services encasement and bulkhead plasterboard ceiling (120 units) including communal decorations works	386,019.00
(C)	Nursery and Meeting, Concierge (Ground floor - 490m2)	£479,251.80
1	Demolition	Included in (g)
1a	Allowance for moving nursery to temporary location, storage cost, removal company	£10,000.00
2	Super-structure (in-fill concrete flooring)	£19,020.00
3	External wall - new enclosure consists of curtain wallings and concrete upstand	£24,780.00
4	Staircases for entrance lobby and fire escapes	£44,000.00
5	Internal wall, stud partitions including acoustic lining and doors	£51,689.00
6	Internal Wall (painting), Floor (vinyl flooring, carpet) & Plasterboard Ceiling finishes	£78,680.00
7	Fittings and furnishing including kitchen fittings, worktop, cupboards, reception desk	£40,762.80
8	Sanitary appliances	Inc in M&E
9	Mechanical services including cold water installation, ventilation, fire alarm, BMS, heating	£122,434.01
10	Electrical including lighting and power	£87,906.00
(D)	Basement work spaces/Garage Offices - OMITTED except Undercroft lighting and suspended ceiling (Ground floor - 280m2)	£70,000.00
1	Keep undercroft soffit, new uplighting and downlighting with new suspended ceiling cover	£60,000.00
2	Allowance for some minor refurbishment works to existing garage	£10,000.00
(E)	Boxing club (Walkway level - 460m2, with EMB office 61m2)	£475,696.49
1	Demolition	Included in (g)
2	Super-structure (in-fill concrete flooring)	£37,020.00
3	External wall - new enclosure consists of curtain wallings and concrete upstand	£115,500.00
4	Staircase - omitted	£0.00
5	Internal wall, stud partitions including acoustic lining and doors	£63,376.00
6	Internal Wall (painting), Floor (raised access floor, vinyl) & Demountable suspended ceiling	£76,485.91
7	Fittings	£36,226.25
8	Sanitary and other appliances	Inc in M&E
9	Mechanical services including cold water installation, ventilation, fire alarm, BMS, heating	£11,922.33
10	Electrical including lighting and power	£35,166.00
(F)	Public realm	223,080.00
1	Removal of stepped ramp	£32,000.00
2	New permeable rubber crumb safety surface & New exposed aggregate concrete pavers	162,480.00
3	Trees, shrubs,	5,600.00
4	Cycle stands, bollards and fencing	33,000.00
(G)	Demolitions	182,170.00
	Demolition to existing staircases, steps, masonry walls, partitions, doors, fittings, link bridge	
(H)	External Facade and Roof to main building	2,325,220.00
1	Remove existing and install new powder coated aluminium central pivot windows	1,020,370.00
2	New pre-patinated zinc rainscreen cladding on aluminium rails with insulation fixed to existing concrete on facade	£844,007.00
3	New PPC Aluminium curtain walling system	£227,250.00
4	New render and brickwork	£35,593.00
5	Scaffolding, skips removal, survey, design and site management Preliminaries	Included above & prelim
6	Remove existing cantilever canopy	£15,000.00
7	Allowance for PPC screen/crown on roof top	£60,000.00
8	Allowance for Main Entrance Canopy and Steel Pergola to Nursery	£20,000.00
9	Allowance for existing aerial cabling and receivers to be lifted and existing ladder, roof balustrade and lantern vents to be relocated	£3,000.00
(I)	Central Services	£1,933,714.70
1	Cap off existing services and remove redundant plants and pipework	£99,000.00
2		
	Heating system including new gas boilers to basement, heat interface units with meter included, hot and cold water to existing flats	£1,127,089.70
3	Allow a provisional sum for new extract smoke extract system	198,300.00
4	Domestic Smoke detectors & Carbon Monoxide (CO) detectors	£7,500.00
5	Kitchen extract ventilation & WC and bathroom extract fans replacement	£128,000.00
6	Allowance for extra over to existing communal satellite	£15,000.00
7	Allowance for 10 New CCTV camera	£50,000.00
8	New emergency lighting to common/lobby areas, new conventional lighting in common area, upgrade of existing lighting in existing 20-storey dwellings	£110,072.00
9	Builder's Work in Connection with Services	75,000.00
10	New UK-PN electrical connection (allow £75,000 if require)	
11	Upgrade door entry system (option 1 as on Lancaster West 1)	£123,773.00
1	Estimated Construction Cost Excluding Preliminaries and Contingency; Sub-total (A to I):	6,963,279.00
2	Preliminaries (15% of construction costs)	1,044,492.00
3	Sub-total 1	8,007,771.00
4	Client's Contingency Allowance	765,000.00
5	Estimated Construction Costs	£8,773,000.00
6	Total professional fees and surveys	£950,000.00
7	Planning and Building Control Fees	£100,000.00
8	KCTMO/ S106 Fees	£160,000.00
9	Contingency	£123,000.00
10	Estimated total overall project costs	£10,126,000.00
11	Total overall project funding from TMO	£9,853,000.00
	Difference between overall project Funding and Estimated Project Costs	£273,000.00

Standard Conditions of
Appointment for a

Consultant

2010

This and the following 14 pages (numbered 2–15) set out the Standard Conditions of Appointment for a Consultant 2010 referred to in an Agreement relating to

The Project, namely:

between

The Client, namely:

initials

and

The Consultant, namely:

initials

Royal Institute of British Architects

RIBA Agreements 2010 are produced in association with



**Association of
Consultant
Architects**



**Chartered
Institute of
Architectural
Technologists**



**Royal
Incorporation of
Architects in
Scotland**

RIAS

RSAA

**Royal Society of
Architects in
Wales**



RSUA

**Royal Society of
Ulster Architects**

The components of a Standard Agreement are the Conditions of Appointment, the Schedules of Project Data, Services and Fees and Expenses, any appendices and a Memorandum of Agreement or Letter of Appointment.

This edition of the Standard Conditions of Appointment combines Parts A and B in the 2007 edition. A list of other changes can be found on the reverse of the pack cover sheet and is also available online at www.ribabookshops.com/agreements.

The Standard Conditions of Appointment are applicable for a Client who is acting for business or commercial purposes or is a Public Authority.

The Standard Conditions may also be used for a Client who is a consumer i.e. 'a natural person acting for purposes outside his trade, business or profession' but the agreement will be subject to the Unfair Terms in Consumer Contracts Regulations 1999. The Regulations require the terms of Agreement, i.e. these Conditions and the Memorandum or Letter of Appointment to be individually negotiated – see Standard Agreement 2010: Notes.

Individual architects are required to be registered with the Architects Registration Board (www.arb.org.uk), and are subject to its Code and to the disciplinary sanction of the Board in relation to complaints of unacceptable professional conduct or serious professional incompetence.

© Royal Institute of British Architects, 2010
Standard Conditions of Appointment for a Consultant 2010
Published by RIBA Publishing, 15 Bonhill Street, London EC2P 2EA

First published 2010
RIBA Agreements 2010 replace RIBA Agreements 2007.

Printed and bound in Great Britain

RIBA Publishing is part of RIBA Enterprises Ltd.
www.ribaenterprises.com

All parties must rely exclusively upon their own skill and judgement or upon their advisers when using RIBA Agreements 2010 and neither RIBA nor RIBA Enterprises Ltd assume any liability to any user or any third party.

This publication is for the sole use of the purchaser.

You may use it for one professional services contract only.

You and the other party to your contract may distribute copies of this publication to advisers and to other persons as necessary in connection with the proper performance of your contract.

In any other case, you may not distribute or reproduce the whole or any part of this publication in any work, whether in hard copy, electronic or any other form, without the prior written consent of RIBA Enterprises Ltd.

1 Definitions and interpretation etc.

Definitions

- 1.1 Where defined terms are used in this Agreement they are distinguished by an initial capital letter. The following definitions apply to all documents comprising this Agreement and are in addition to those set out elsewhere in this Agreement.

Brief means the latest statement of requirements for the Project issued or approved by the Client:

- * s* AT* INCEPTION * ANY* INITIAL* STATEMENT* BY* THE* #CLIENT
- * s* AFTER* CLARIFICATION* OF* THE* OBJECTIVES * THE* \$DESIGN* "RIEF* OR * /UTPUT*
- * s* ANY* SUBSEQUENT* DEVELOPMENT* INTO* THE* PROJECT* "RIEF

The Brief shall include any information or drawings prepared by or on behalf of the Consultant and approved by the Client during the development of the Brief.

Collaborate MEANS* TO* COOPERATE* WITH* AND* TO* PROVIDE* TO* OR* RECEIVE* FROM REASONABLY* NECESSARY * AS* AND* WHEN* REQUESTED * FOR* PERFORMING* THE* to carry out their work or services, to consider and, where competent to do so, to comment on such information.

Confidential Information means all information relating to the Client's and the Consultant's business and affairs which either party directly or indirectly receives or acquires from the other party or any representative of the other party either in writing or verbally.

Construction Costs means:

- * s* THE* #CLIENT S* TARGET* COST* FOR* CONSTRUCTING* THE* PROJECT* AS* SPECIFI
- * SUCH* AMOUNT* IS* SPECIFIED* A* FAIR* AND* REASONABLE* AMOUNT * OR* SUBSE
- * s* THE* LATEST* PROFESSIONALLY* PREPARED* ESTIMATE* APPROVED* BY* THE* #CLIENT
- * s* THE* ACTUAL* COST* OF* CONSTRUCTING* THE* PROJECT* UPON* AGREEMENT* OR
- * THE* PROJECT * AND

includes (without limitation):

- * s* THE* COST* AS* IF* NEW* OF* ANY* EQUIPMENT* AND OR * MATERIALS* PROVIDED*
- * CONTRACTOR* FOR* INSTALLATION* DURING* CONSTRUCTION* OF* THE* PROJECT *
- * s* ANY* DIRECT* WORKS* CARRIED* OUT* BY* OR* ON* BEHALF* OF* THE* #CLIENT * AN
- * s* PROVISION* FOR* CONTRACTOR S* PROFIT* AND* OVERHEADS * AND

excludes:

- * s* 6ALUE* !DDED* 4AX *
- * s* FEES
- * s* THE* COSTS* OF* RESOLUTION* OF* ANY* DISPUTE
- * s* THE* #CLIENT S* LEGAL* AND* INHOUSE* EXPENSES
- * s* ANY* LOSS* AND OR * EXPENSE* PAYMENTS* PAID* TO* A* CONTRACTOR
- * s* ANY* ADJUSTMENT* FOR* ANY* LIQUIDATED* DAMAGES* DEDUCTED* BY* THE* #CLIENT

Other Person means any person, company or firm, other than the Consultant or any sub-consultant of the Consultant, including but not limited to consultants, contractors, sub-contractors, specialists, statutory bodies or undertakers, approving or adopting authorities, who have performed or will perform work or services in connection with the Project.

Projects defined in the Project Data.

Project Data means the matters set out in the 'Project Data' schedule, which may be varied by agreement.

Services means the services to be performed by the Consultant specified in the 'Services' schedule, which may be varied by agreement.

Timetable means the Client's initial programme for performance of the Services as specified in the Project Data, or where no such programme is specified it shall be a fair and reasonable period. Subsequently, the Timetable shall be the latest programme approved by the Client.

Interpretation

- 1.2 The headings and notes to the Conditions are for convenience only and do not affect interpretation. Words denoting natural persons include corporations and firms and vice versa.

Communications

- 1.3 Any notice or other document required under this Agreement shall be in writing and given or served by any effective means to the address of the recipient specified in this Agreement or such other address, including a postal address or fax number notified to the other party.

Communications between the Client and the Consultant that are not such notices or documents may be sent to any other address, including an e-mail address, notified by the other party as an appropriate address for specific communications. Communications take effect on receipt, but if not in writing are of no effect unless and until confirmed in writing by the sender or the other party.

Communications sent by special delivery or recorded delivery shall be deemed (subject to proof to the contrary) to have arrived at the appropriate address on the second working day after posting.

Public holidays

- 1.4 Where under this Agreement an action is required within a specified period of days from a specified date, that period commences immediately after that date. The period shall include Saturdays and Sundays but shall exclude any day that is a public holiday.

Duration

- 1.5 The provisions of this Agreement are without prejudice to the respective rights and obligations of the parties and continue in force as long as necessary to give effect to such rights and obligations.

Applicable law

- 1.6 This Agreement is subject to the law of England and Wales or Northern Ireland or Scotland as specified in the Project Data and subject to clause 9.3 the parties submit to the exclusive jurisdiction of the specified jurisdiction.

2 Obligations and authority of the Consultant

Duty of care

- 2.1 The Consultant shall exercise reasonable skill, care and diligence in accordance with the normal standards of the Consultant's profession in performing the Services and discharging all the obligations under this clause 2.

Duty to inform

- 2.2 The Consultant shall keep the Client informed of progress in the performance of the Services and of any issue that may materially affect the Brief, the Construction Cost, the Timetable, or the quality of the Project.

- 2.3 The Consultant shall inform the Client upon becoming aware of:

* *A* NEED* TO* APPOINT* /THER* 0ERSONS * OTHER* THAN* THOSE* NAMED* IN* THE* 0RC
OR* SERVICES* IN* CONNECTION* WITH* THE* 0ROJECT * AND OR

- 2.3.2 any information, decision or action required from the Client or others in connection with performance of the Services.

Collaboration

** 4HE* #ONSULTANT* SHALL* #OLLABORATE* WITH* /THER* 0ERSONS* NAMED* IN* THE* 0ROJECT
appointment is foreseeable and, as applicable, shall co-ordinate and integrate the information received into the Consultant's work.

Consultant's authority

- 2.5 The Consultant shall act on behalf of the Client in the matters set out or necessarily implied in this Agreement or in project procedures agreed with the Client from time to time, but has no authority, without the Client's prior approval:

- * TO* ENTER* INTO* ANY* CONTRACTUAL* OR* OTHER* COMMITMENT* ON* BEHALF*
- * TO* TERMINATE* THE* EMPLOYMENT* OF* /OTHER* PERSONS* APPOINTED* BY* THE

2.5.3 to make or cause to be made any material alteration to or addition to or omission from the Services or the approved design.

In the event of an emergency, the Consultant may issue instructions to a contractor to prevent damage to persons or material damage to the Project without the Client's prior approval, and shall confirm such action in writing to the Client without delay.

Consultant's Representative

- 2.6 The Consultant's Representative shall have full authority to act on behalf of the Consultant for all purposes in connection with performance of the Services but not to vary the terms of the Agreement.

Photography

- 2.7 The Consultant shall have the right to publish photographs of the Project, and the Client shall give reasonable access to the Project for this purpose for 2 years after practical completion of the construction works.

Publicity

- 2.8 The Consultant shall obtain the consent of the Client, which consent is not unreasonably withheld or delayed, before publication of any other information about the Project, unless reasonably necessary for performance of the Services.

Confidentiality

- 2.9 The Consultant shall not disclose to any other person Confidential Information unless:

2.9.1 disclosure is necessary for the proper performance of the Services, or in order to take professional advice in relation to this Agreement or the Services, or in order to obtain/maintain INSURANCE* COVER* AS* REQUIRED* BY* THIS* AGREEMENT

- * IT* IS* IN* THE* PUBLIC* DOMAIN* OTHER* THAN* DUE* TO* WRONGFUL* USE* OR*

2.9.3 disclosure is required by law or because of disputes arising out of or in connection with this Agreement.

3 Obligations and authority of the Client

Client's Representative

- 3.1 The Client's Representative shall have full authority to act on behalf of the Client for all purposes in connection with the matters set out in this Agreement but not to vary the terms of the Agreement.

Information, decisions, approvals, etc

- 3.2 The Client shall supply the initial statement of the Client's requirements and shall advise the relative priorities of the Client's requirements, the Brief, the Construction Cost and the Timetable.
- 3.3 The Client shall provide, free of charge, all the information in the Client's possession, or reasonably obtainable, which is necessary for the proper and timely performance of the Services and the Consultant shall be entitled to rely on such information.
- 3.4 The Client shall give decisions and approvals and shall take such actions necessary for the proper and timely performance of the Services.

Instructions

- 3.5 The Client (or the Lead Consultant, or other consultant designated by the Client) may issue reasonable instructions to the Consultant.
- 3.6 Where the Consultant has responsibility to direct and/or co-ordinate the work or services of or give INSTRUCTIONS TO /OTHER PERSONS SUCH INSTRUCTIONS SHALL BE ISSUED ONLY THROUGH the Consultant shall not be responsible for any instructions issued otherwise.

Applications for consent

- 3.7 The Client shall instruct the making of applications for consents under planning legislation, building acts, regulations or other statutory requirements and others having an interest in the Project. The Client shall pay any statutory charges and any fees, expenses and disbursements in respect of such applications.

Appointment of Other Persons

- 3.8 Where work or services, other than those to be performed by the Consultant, are required, the Client SHALL APPOINT AND PAY /OTHER PERSONS UNDER SEPARATE AGREEMENTS TO PERFORM PRODUCTS AND SHALL REQUIRE THEM TO COLLABORATE WITH THE CONSULTANT SUCH site inspectors or clerks of works.

- * THE CLIENT SHALL CONFIRM IN WRITING TO THE CONSULTANT THE SERVICES TO BE their disciplines and the expected duration of their employment.

The Client acknowledges that the Consultant does not warrant the competence, performance, work, SERVICES PRODUCTS OR SOLVENCY OF ANY SUCH /OTHER PERSONS

- 3.9 The Client shall hold the contractor appointed to undertake construction works and not the Consultant responsible for the management and operational methods necessary for the proper carrying out and completion of the construction works in compliance with the building contract or contracts.

Time and cost

- 3.10 The Client acknowledges that the Consultant does not warrant:

3.10.1 that planning permission and other approvals from third parties will be granted at all, or if GRANTED WILL BE GRANTED IN ACCORDANCE WITH ANY ANTICIPATED TIMESCALE

3.10.2 compliance with the Construction Cost and/or the Timetable, which may need to be reviewed for such matters as, but not limited to:

- * A APPROVED VARIATIONS ARISING FROM DESIGN DEVELOPMENT OR REQUESTED
- * B DELAYS CAUSED BY ANY /OTHER PERSON AND OR
- (c) any other factors beyond the control of the Consultant.

Legal advice

- 3.11 The Client shall procure such legal advice and provide such information and evidence as required for the resolution of any dispute between the Client and any other parties in connection with the project.

Confidentiality

THE CLIENT SHALL NOT DISCLOSE TO ANY /OTHER PERSON CONFIDENTIAL INFORMATION

3.12.1 disclosure is necessary to take professional advice in relation to this Agreement or the SERVICES

- * IT IS IN THE PUBLIC DOMAIN OTHER THAN DUE TO WRONGFUL USE OR DIS

3.12.3 disclosure is required by law or because of disputes arising out of or in connection with this Agreement.

4 Assignment and sub-contracting

Assignment^[1]

- 4.1 Neither the Consultant nor the Client shall at any time assign the benefit of this Agreement or any rights arising under it without the prior written consent of the other, which consent shall not be unreasonably withheld or delayed.

Sub-contracting

- 4.2 With the consent of the Client, which consent shall not be unreasonably withheld or delayed, the Consultant may appoint a sub-consultant or sub-consultants to perform part of the Services. Any such sub-contracting shall not relieve the Consultant of responsibility for carrying out and completing the Services in accordance with this Agreement. Such consent shall not be required in respect of agency or self-employed staff.

Specialist services

- 4.3 If during performance of the Services it is the Consultant's opinion that it would benefit the Client, the CONSULTANT MAY RECOMMEND THAT THE CLIENT APPOINTS /OTHER PERSONS WITH experience to perform part of the Services. If the Client agrees to make such appointment, it shall be MADE WITHOUT UNDUE DELAY /IN SUCH APPOINTMENT THE CLIENT SHALL GIVE who shall be relieved of responsibility and liability for that element of the Services.

- * 4HE CONSULTANT SHALL COLLABORATE WITH SUCH /OTHER PERSONS

5 Fees and expenses

Calculation of fees

- 5.1 The fees for performance of the Services and/or any additional services shall be calculated in accordance with this clause 5 and as specified in the schedule of Fees and expenses.

Basic Fee

- 5.2 The Basic Fee for performance of the Services shall be:

- 5.2.1 where the Project is for the design and carrying out of construction works, including the specified number of site visits during the construction period:

(a) a percentage or percentages applied to the Construction Cost in accordance with clause

* AND OR *

- * B A LUMP SUM OR SUMS IN ACCORDANCE WITH CLAUSE * AND OF

- * C TIME CHARGES IN ACCORDANCE WITH CLAUSE * AND OR

- * D ANY COMBINATION OF THESE * AND OR

(e) another agreed method.

- 5.2.2 for other professional services:

- * A A LUMP SUM OR SUMS IN ACCORDANCE WITH CLAUSE * AND

- * B TIME CHARGES IN ACCORDANCE WITH CLAUSE * AND OR

(c) another agreed method.

Other fees

- ** & OR PERFORMANCE OF /OTHER SERVICES SPECIFIED IN THE SERVICES SCHEDULE Fee, the fee for each service shall be:

- * A LUMP SUM OR SUMS IN ACCORDANCE WITH CLAUSE * AND OR

- * TIME CHARGES IN ACCORDANCE WITH CLAUSE * AND OR

- 5.3.3 another agreed method.

[1] Assignment in Scotland.

Percentage fees

5.4 Where this clause 5.4 applies, the Basic Fee shall be calculated by applying:

* THE* SPECIFIED* PERCENTAGE* APPLIED* TO* THE* FINAL* #ONSTRUCTION* #OST * OR

5.4.2 the relevant specified percentage for each work stage to the Construction Cost at the end of the previous stage.

Lump sums

5.5 Where this clause 5.5 applies, the Basic Fee shall be:

* THE* SPECIFIED* LUMP* SUM* OR* LUMP* SUMS * OR*

5.5.2 a lump sum or lump sums for each work stage calculated by applying the specified percentages to the Construction Cost for the developed design current at the end of RIBA STAGE* \$ * OR

5.5.3 a lump sum for each work stage calculated by applying the relevant specified percentage to the Construction Cost current at the end of the previous stage.

Time charges

5.6 Where this clause 5.6 applies, the time-based fee shall be ascertained by multiplying the time reasonably spent in the performance of the Services by the specified hourly or daily rate for the relevant personnel. Time 'reasonably spent' includes the time spent in connection with performance of the Services and in travelling from and returning to the Consultant's office.

Revision of lump sums and other rates

5.7 Every 12 months, lump sums complying with clause 5.5, less any amounts previously claimed, and rates for time charges shall be revised in accordance with changes in the Average Earnings Index and rates for mileage and printing shall be revised in accordance with changes in the Consumer Price Index.

Each 12-month period shall commence on the anniversary of the Effective Date of this Agreement specified in the Project Data, or where clause 5.5.2 or 5.5.3 applies the date of calculation of the lump sums.

Fee adjustment

5.8 The Basic Fee:

5.8.1 shall be adjusted including due allowance for any loss and/or expense if:

* * A * * * MATERIAL* CHANGES* ARE* MADE* TO* THE* "RIEF* AND OR * THE* #ONSTRUCTION and/or
(b) the Services are varied by agreement.

5.8.2 shall not be adjusted for any reduction of the Construction Cost arising solely from deflationary market conditions not prevailing at the Effective Date. The Basic Fee shall continue to be based on the Construction Cost current prior to the date of such reduction.

Additional fees

5.9 Where the Consultant for reasons beyond the Consultant's reasonable control incurs extra work or loss and expense for which the Consultant would not otherwise be remunerated, the Consultant shall be entitled to additional fees calculated on a time basis as set out in clause 5.6 unless otherwise agreed. Matters in relation to which the Consultant shall be entitled to additional fees include but are not limited to circumstances where:

5.9.1 the Consultant is required to vary any item of work commenced or completed pursuant to this Agreement or to provide a new design after the Client has authorised the Consultant to develop AN* APPROVED* DESIGN

5.9.2 the nature of the Project requires that substantial parts of the design cannot be completed or MUST BE SPECIFIED PROVISIONALLY OR APPROXIMATELY BEFORE CONSTRUCTION

* PERFORMANCE OF THE SERVICES IS DELAYED * DISRUPTED OR PROLONGED

5.9.4 the cost of any work, installation or equipment for which the Consultant performs Services is omitted from or not included in the Construction Cost.

This clause 5.9 shall not apply where any adjustment under clause 5.8.1 applies to the same events.

The Consultant shall inform the Client on becoming aware that this clause 5.9 will apply. This clause 5.9 shall not apply where any change or extra work or expense arises from a breach of this Agreement by the Consultant.

Supplementary agreements

5.10 If the Consultant consents to enter into any supplementary agreement, the terms of which are agreed by the Consultant after the date of this Agreement, the Consultant shall be entitled to payment of the Consultant's reasonable costs of so doing, including but not limited to legal advice, and the amount of any additional professional indemnity insurance premium.

Tender not accepted

5.11 Where the Consultant is instructed by the Client to invite a tender or tenders for work or services in connection with the Project but no tender is made or accepted, the Consultant shall be entitled to fee due up to and including RIBA Work Stage H applied to the Construction Cost or that part of it relating to the said work or services current at the date of invitation to tender.

Expenses and disbursements

5.12 The Client shall reimburse the Consultant for expenses in the manner specified in the Schedule of Fees and expenses.

Maintain records

5.13 The Consultant shall maintain records of time spent on Services performed on a time basis for the purpose of verifying charges under clause 5.6 and shall in addition maintain records of any expenses and disbursements to be reimbursed at net cost. The Consultant shall make such records available to the Client on reasonable request.

Payment

5.14^[2] Payment under this Agreement shall be made as follows:

5.14.1 Payment shall become due to the Consultant on the date of issue of the Consultant's account. The final date for payment of any amount due to the Consultant shall be 28 days from the issue of the relevant account.

5.14.2 The Consultant shall issue accounts at intervals of not less than one month or as specified in the schedule of Fees and expenses setting out any accrued instalments of the fee and other amounts due, less any amounts previously paid and stating the basis of calculation of the amounts due. Instalments of fees shall be calculated on the Consultant's reasonable estimate of the percentage of completion of the Services or stages or other services or any other specified method.

5.14.3 The Consultant shall submit the final account for fees and any other amounts due when the Consultant reasonably considers the Services have been completed.

Payment notices

5.15 The Client shall give a written notice to the Consultant:

[2] In the event of non-payment of any amount properly due to the Consultant under this Agreement, the Consultant is entitled to interest on the unpaid amounts under the provisions of clause 5.19, may suspend use of the licence under the provisions of clause 6, may suspend or terminate performance of Services and other obligations under the provisions of clause 8, or may commence dispute resolution procedures and/or delivery procedures.

5.15.1 within 5 days of the date of issue of an account specifying the amount the Client proposes to PAY* AND* THE* BASIS* OF* CALCULATION* OF* THAT* AMOUNT * AND

5.15.2 not later than 5 days before the final date for payment of any amount due to the Consultant if the Client intends to withhold payment of any part of that amount stating the amount proposed to be withheld and the ground for doing so or, if there is more than one ground, each ground and the amount attributable to it.

If no such notices are given the amount due shall be the amount stated as due in the account. The Client shall not delay payment of any undisputed part of the account.

Set-off

5.16 The Client shall not withhold any amount due to the Consultant under this agreement unless the amount has been agreed with the Consultant or has been decided by any tribunal to which the matter is referred as not being due to the Consultant.

All rights of set-off at common law or in equity which the Client would otherwise be entitled to exercise are expressly excluded.

Payment on suspension or termination

5.17 If the Consultant or the Client issues a notice under clause 8 suspending performance of any or all of the Services or terminating performance of the Services and/or other obligations, the Consultant shall issue an account or accounts on the expiry date of the notice or as soon as reasonably practicable and the Consultant shall be entitled to:

* * * PAYMENT* OF* ANY* PART* OF* THE* FEE* AND* OTHER* AMOUNTS* PROPERLY* DUE
and

* * * PAYMENT* OF* ANY* LICENCE* FEE* DUE* UNDER* CLAUSE* * AND

5.17.3 reimbursement of any loss and/or expense properly and necessarily incurred by the Consultant by reason of the suspension or the termination, save where the Client gives notice of suspension or termination by reason of the material or persistent breach of the Agreement by the Consultant.

5.18 If the reason for suspension is remedied, the Consultant shall be entitled to reimbursement of the reasonable costs of resumption of performance of the Services and other obligations in accordance with clause 8.1.4 (a).

Late payment

5.19 In the event that any amounts are not paid by the Client or the Consultant when properly due, the payee shall be entitled to simple interest on such amounts until the date that payment is received at the daily rate equivalent to 8% over the dealing rate of the Bank of England Rate current at the date that payment becomes overdue, together with such costs reasonably incurred and duly mitigated by the payee (including costs of time spent by principals, employees and advisors) in obtaining payment of any sums due under this Agreement.

The payee's entitlement to interest at the specified rate shall also apply in respect of any amounts that are awarded in adjudication, arbitration or legal proceedings.

Recovery of costs

5.20 The Client or the Consultant shall pay to the other party who successfully pursues, resists or defends any claim or part of a claim brought by the other:

5.20.1 such costs reasonably incurred and duly mitigated (including costs of time spent by principals, EMPLOYEES* AND* ADVISORS * WHERE* THE* MATTER* IS* RESOLVED* BY* NEGOTIATION*

5.20.2 such costs as may be determined by any tribunal to which the matter is referred.

VAT

IN ADDITION TO THE FEES AND EXPENSES THE CLIENT SHALL PAY ANY 6AL Consultant's fees and expenses.

6 Copyright and use of information

Copyright

6.1 The Consultant shall own the copyright in the original work produced in the performance of the Services and generally asserts the Consultant's moral rights to be identified as the author of such work.

6.2 No part of any design by the Consultant may be registered with the Client without the consent of the Consultant in writing.

Use of information

THE CLIENT SHALL HAVE A LICENCE TO COPY AND USE AND ALLOW OTHERS TO Project to copy and use drawings, documents, bespoke software and all other such work produced by or on behalf of the Consultant in performing the Services, hereinafter called the 'Material'.

The Material may be used for the construction of the Project and for the operation, maintenance, repair, reinstatement, alteration, promotion, leasing and/or sale of the Project. The Material may not be used for reproduction of the design for any part of any extension of the Project, and/or for any other project except on payment of a licence fee specified in this Agreement or subsequently agreed.

The Consultant shall not be liable if the Material is modified other than by or with the consent of the Consultant or used for any purpose other than the purposes for which it was prepared.

Provided that:

6.3.1 if it is intended to make any permitted use after the date of the last Service performed under this Agreement:

(a) the Consultant, following a request from the Client, shall confirm the degree of completion of THE MATERIAL AND

* B THE CLIENT SHALL PAY TO THE CONSULTANT ANY SPECIFIED LICENCE

6.3.2 if at any time the Client is in default of payment of any fees or other amounts properly due, the Consultant may suspend further use of the licence on giving 7 days' notice of the intention of DOING SO 5SE OF THE LICENCE MAY BE RESUMED ON RECEIPT OF SUC

6.3.3 the Client obtains or ensures that any third party obtains any necessary licence and pays any fees arising for access to any software used to produce any of the Material.

Patents etc.

6.4 The Basic Fee for performance of the Services shall include all royalties, licence fees or similar expenses in respect of the making, use or exercise by the Consultant of any invention or design for the purpose of performing the Services.

7 Liability and insurance

Time limit for action or proceedings

7.1 No action or proceedings arising out of or in connection with this Agreement whether in contract, in tort^[4], for breach of statutory duty or otherwise shall be commenced after the expiry of the period specified in the Project Data from the date of the last Services performed under this Agreement or, if

[3] Under the Registered Designs Regulations 2001.

[4] Delict in Scotland.

earlier, the date of practical completion of construction of the Project or such earlier date as prescribed by law.

Limit of liability

7.2 In any such action or proceedings:

7.2.1 The Consultant's liability for loss or damage shall not exceed the amount of the Consultant's professional indemnity insurance specified in the Project Data, providing the Consultant has notified the insurers of the relevant claim or claims as required by the terms of such insurance.

7.2.2 No employee of the Consultant, including any officer or director of a company or a member of a limited liability partnership or any agent of the Consultant, shall be personally liable to the Client for any negligence, default or any other liability whatsoever arising from performance of the Services.

Net contribution

7.3 Without prejudice to the provisions of clause 7.2, the liability of the Consultant shall not exceed such sum as it is just and equitable for the Consultant to pay having regard to the extent of the Consultant's responsibility for the loss and/or damage in question and on the assumptions that:

7.3.1 all other consultants and contractors providing work or services for the Project have provided to the Client contractual undertakings on terms no less onerous than those of the Consultant UNDER* THIS* AGREEMENT

7.3.2 there are no exclusions of or limitations of liability nor joint insurance or co-insurance PROVISIONS* BETWEEN* THE* CLIENT* AND* ANY* OTHER* PERSON* REFERRED* TO* IN* TH

7.3.3 all the persons referred to in this clause have paid to the Client such sums as it would be just and equitable for them to pay having regard to the extent of their responsibility for that loss and/or damage.

Professional indemnity insurance

7.4 The Consultant shall maintain until at least the expiry of the period specified in clause 7.1 professional indemnity insurance with a limit of indemnity of not less than the amount or amounts specified in the Project Data provided such insurance continues to be offered on commercially reasonable terms to the Consultant at the time when the insurance is taken out or renewed.

Such insurance shall be:

7.4.1 limited to the amounts (if any) specified in the Project Data as in the aggregate in any year of INSURANCE * AND

7.4.2 subject only to such other limitations, exceptions and exclusions as are commonly included in such policies.

7.5 The Consultant, when reasonably requested by the Client, shall produce for inspection a broker's letter or certificate confirming that such insurance is being maintained.

7.6 The Consultant shall inform the Client if such insurance ceases to be available at commercially reasonable terms or subsequent to the date of this Agreement an aggregate limit applies to any matters other than those specified in the Project Data in order that the Consultant and Client can discuss the best means of protecting their respective positions.

Supplementary Agreements

7.7 Where it is specified in the Project Data:

7.7.1 that the Consultant will be required to enter into a collateral warranty or warranties in favour of funders, purchasers or first tenants and the terms of the warranty together with the names or categories of other parties who will sign such agreements are appended to this Agreement, the Consultant shall enter into such agreement or agreements within a reasonable period of being

requested to do so by the Client, providing that such warranties give no greater benefit to the beneficiaries than is given to the Client under this Agreement and all fees and other amounts PROPERLY DUE TO THE CONSULTANT HAVE BEEN PAID

7.7.2 that a Third Party Rights Scheme in favour of funders, purchasers or first tenants is applicable and appended to this Agreement, the rights of such third parties shall come into effect on the date of receipt by the Consultant of a notice from the Client stating the name of EACH INTERESTED PARTY AND THE NATURE OF THE INTEREST IN THE OR

7.7.3 that a supplementary agreement is applicable under which the Consultant is to provide services to a contractor appointed by the Client to complete the design and construction of the Project, and such agreement is appended to this Agreement, the Consultant shall enter into such agreement with the Client and the contractor appointed to complete the design and construction of the project within a reasonable period of being requested to do so by the Client, providing that all fees and other amounts due have been paid.

Rights of third parties

7.8 Except for the rights conferred by clause 7.7.2, nothing in this Agreement shall confer or is intended confer any right to enforce any of its terms on any person who is not a party to it other than lawful assignees.

8 Suspension or termination

Suspension

8.1 The provisions for suspension are:

8.1.1 The Client may suspend the performance of any or all of the Services and/or other obligations by giving not less than 7 days' notice in writing to the Consultant specifying the Services affected.

8.1.2 The Consultant may suspend performance of the Services and/or other obligations on giving not less than 7 days' notice to the Client of the intention and stating the reasons for doing so in the event:

- (a) that the Client fails to pay any fees or other amounts due by the final date for payment unless, where applicable, the Client has given effective notice under clause 5.15.2 of the INTENTION TO WITHHOLD PAYMENT OF ANY PART OF A CONSULTANT'S
- * * B * * THAT THE CLIENT IS IN MATERIAL OR PERSISTENT BREACH OF THE
- (c) that the Consultant is prevented from or impeded in performing the Services for reasons BEYOND THE CONSULTANT'S REASONABLE CONTROL * OR
- (d) of force majeure.

8.1.3 The Consultant shall cease performance of the suspended Services and/or other obligations in an orderly and economical manner on the expiry of the notice period after receipt or giving of a notice of suspension.

8.1.4 If the reason for a notice of suspension arises from a default:

- (a) which is remedied, the Consultant shall resume performance of the Services or other OBLIGATIONS WITHIN A REASONABLE PERIOD * OR
- (b) which is not remedied by the defaulting party, the other party shall have the right to treat performance of the Services or other obligations affected as terminated on giving reasonable written notice.

8.1.5 Where Services are suspended by the Client and not resumed within 6 months the Consultant shall have the right to treat performance of the Services and/or other obligations affected as terminated on giving at least 7 days' further written notice to the Client.

[5] Not in Scotland.

- 8.1.6 Any period of suspension arising from a valid notice given under clause 8.1.1 or clause 8.1.2 shall be added to the latest Timetable for completion of the relevant Services.

Termination

- 8.2 The provisions for termination are:

- 8.2.1 The Client or the Consultant may by giving reasonable notice to the other terminate performance of the Services and/or other obligations, stating the reasons for doing so and the Services and obligations affected.
- 8.2.2 Performance of the Services and/or other obligations may be terminated immediately by notice from either party if:
- (a) the other party commits an act of bankruptcy or is subject to a receiving or administration order, and/or goes into liquidation, and/or becomes insolvent, and/or makes any ARRANGEMENTS* WITH* CREDITORS * OR
 - (b) the Consultant becomes unable to perform the Services through death or incapacity.

- * * /N* TERMINATION* OF* PERFORMANCE* OF* THE* SERVICES* AND OR * OTHER* OBLIGATIONS not previously provided to the Client shall be delivered on demand to the Client by the Consultant, subject to the terms of the licence under clause 6.3 and payment of any outstanding fees and other amounts due under clause 5.19 plus the Consultant's reasonable copying charges.

9 Dispute resolution

- 9.1 The Client and the Consultant may attempt to settle any dispute or difference arising under the Agreement by negotiation or mediation, if suitable, or either party may refer the matter to adjudication, arbitration or legal proceedings as specified in the Project Data.

Adjudication

- 9.2 The provisions for adjudication are:

- 9.2.1 Where a dispute or difference is to be referred to adjudication, the parties may agree who shall act as adjudicator, or the adjudicator shall be a person nominated at the request of either party by the nominator specified in the Project Data.
- 9.2.2 For the avoidance of doubt, the Adjudicator may allocate between the parties the costs relating to the adjudication, including the fees and expenses of the adjudicator, in accordance with the provisions of clause 5.20.

This provision is ineffective unless it is confirmed in writing by the referring party to the other party and to the adjudicator after notice is given of the intention to refer the dispute to adjudication.

Arbitration

- 9.3 The provisions for arbitration are:

- 9.3.1 Without prejudice to any right of adjudication, where in the Project Data an arbitration agreement is made and either party requires a dispute or difference (except in connection with the enforcement of any decision of an adjudicator) to be referred to arbitration then that party shall serve on the other party a notice of arbitration to that effect and the dispute or difference shall be referred to a person to be agreed between the parties or, failing agreement within 14 days of the date on which the notice is served, a person appointed by the appointor specified in the Project Data on the application of either party.

- 9.3.2 Where the law of England and Wales or Northern Ireland is the applicable law:

[6] The Consultant is expected to operate in-house procedures to promptly handle complaints and disputes relating to specific project or performance matters.

- (a) the Client or the Consultant may litigate any claim for a pecuniary remedy which does not exceed £5,000 or such other sum as is provided by order made under section 91 of the Arbitration Act 1996
- (b) in such arbitration the Construction Industry Model Arbitration Rules (CIMAR) current at the DATE OF THE REFERENCE SHALL APPLY AND
- (c) the arbitrator shall not have the power referred to in Section 38(3) of the Arbitration Act 1996

9.3.3 Where the law of Scotland is the applicable law such arbitration shall be conducted under the rules set out in the current edition of the Scottish Arbitration Code for use in Domestic and International Arbitration.

10 Consumer's right to cancel

- 10.1 The consumer Client has the right to cancel this Agreement for any reason by delivering or sending (including by electronic mail) a cancellation notice to the Consultant at any time within the period of 7 days starting from the date when this Agreement was made.
- 10.2 The notice of cancellation is deemed to be served as soon as it is posted or sent to the Consultant or in the case of an electronic communication on the day it is sent to the Consultant.
- 10.3 If the Consultant was instructed to perform any services before the Agreement was made or before the end of the 7 day period and the instruction or instructions were confirmed in writing, the Consultant shall be entitled to any fees and expenses properly due before the Consultant receives the notice of cancellation.
- 10.4 The notice of cancellation is to be addressed to the Consultant and state:

The Client <name> hereby gives notice that the Agreement with the Consultant <insert name> and signed [on our behalf] by <name of person(s) who [will sign] [signed]> on <date of signing> is cancelled.

Client signature(s):

<address>

<date>

[7] This clause applies where the Project relates to work to the Client's home or a second home including a new home and the Client is a consumer who is acting for purposes outside his/her trade, business or profession and has signed this Agreement in his/her own name i.e. not as a limited company or other legal entity.

From: Graham Kent-Jackson
Location: SEA1 Conference Rm
Importance: Normal
Subject: Accepted: 1279 Bruce Sounes/Paneltec
Start Time: Tue 17/09/2013 9:00:00 AM
End Time: Tue 17/09/2013 11:00:00 AM
Required Attendees: Bruce Sounes

GRENFELL TOWER

06 SEPT 2013

PROPOSALS/QUERIES/DISCUSSION POINTS

MECHANICAL SERVICES

Item	TMO Comments – Minutes from meeting 10/09/13
<p>Boiler Plant:</p> <ol style="list-style-type: none"> 1. Replace existing boiler plant serving the tower with new gas fired modular boilers. The existing boiler plant serving the tower will be disconnected and replaced with the new gas fired boiler plant. It is assumed no further work will be carried out on existing boiler plant. 2. It is assumed there will be at least three boiler modules to provide back-up if one fails. Any views on how resilient the boiler plant should be in the event of boiler failure/maintenance? 3. How sophisticated should the controls be? Should there be a BMS link back to TMO's office or just local, stand-alone control? 4. The existing flue will be used for the new boiler system. The flue will be surveyed to ensure it is clear and also suitable for use with the new boiler plant. 	<ol style="list-style-type: none"> 2. <ul style="list-style-type: none"> ➤ Agreed three boiler modules with two firing at one time. ➤ Matt to provide options for back-up boilers along with costs. 3. <ul style="list-style-type: none"> ➤ TMO like the idea of a BMS link to the office, subject to cost. Matt to make a proposal including an approximation of the associated costs. <p>Fingerblocks – This will be subject to a separate commission to survey and recommend what to do. David to produce a brief for Matt to price and scope.</p>

MAX FORDHAM

Item	TMD Comments – Minutes from meeting 10/09/13
<p>5. Ventilation to boiler room? Allow for new boiler plant in calculations. Studio E want to change ground level ventilation arrangements.</p> <p>6. New heating mains will run up through the building to serve the flats.</p> <p>7. The necessity for water treatment will be assessed as the HIU's may be susceptible to untreated water.</p> <p>8. Controls will be provided to ensure that all existing and new boilers cannot fire at the same time to prevent problems due to insufficient gas pressure.</p> <p>Heating Mains Distribution</p> <p>1. It is proposed to run the main heating pipes vertically through the building with branch connections running through the lift lobby at each floor level. On other projects, significant problems have arisen in the common parts where heat from the pipework has not been dissipated and the heat build-up has resulted in very high temperatures. The best way to limit this is to provide 'super insulation' to reduce the heat emanating from the pipework and then ventilate the space as far as possible. The pipework will be very well insulated, but providing ventilation from the lift lobby will be very difficult. It may be possible to incorporate some passive ventilation into the smoke vent system as</p>	<p>5. ➤ Bruce to produce drawing of what he wants and Matt to confirm ventilation arrangements.</p> <p>6. ➤ Matt to review alternate routes for the mechanical riser and check with Stefano.</p> <p>7. ➤ Matt will include a survey of the current status of the water to see if treatment will be necessary. ➤ Matt to email a summary of the sequence of works including likely disruption to flats that can then be shared with residents.</p> <p>1. ➤ Matt to contact Building Control regarding how to ensure common areas do not overheat. <ul style="list-style-type: none"> Best option would be to pass heat through the smoke extractor Another option is to encase the heating pipes and extract heat that way. Matt to discuss with Stefano </p>

MAX FORDHAM

Item	TMO Comments – Minutes from meeting 10/09/13
<p>this is being renovated, but there may be objections from the Fire Officer.</p> <p>Heating in Flats</p> <ol style="list-style-type: none"> Each flat will have a 'Heat Interface Unit' (HIU) which will be connected to the new heating mains to provide space heating and to heat the hot water supply. The HIU's will be located in the cupboard where the existing Elson tank is located. The HIU's will have two heat exchangers, one for space heating and one for domestic hot water heating. The heating heat exchanger has a primary heating circuit fed from the building's heating system. It also has a secondary circuit which circulates heat to the radiators in the flat. The heat exchanger transfers heat from the primary circuit to the secondary circuit while maintaining complete hydraulic separation between the two circuits. 	<ol style="list-style-type: none"> ➤ Matt to advise on access to the HIU's – possibly by including a removable panel.
<p>Cold Water Services:</p> <ol style="list-style-type: none"> The existing booster pump sets and break tanks located in the basement plant room will be retained. The existing water tanks on the roof will be surveyed and depending on 	

- 203 -

MAX FORDHAM

Item	TMO Comments – Minutes from meeting 10/09/13
<p>of providing no back-up storage in the event of a power supply failure.</p> <p>6. Cold water distribution pipework will be kept as far away as possible from the heating mains in order to avoid heat pick-up.</p> <p>7. Sterilisation of new pipework will be required. Building Control to confirm whether it would be adequate to sterilise just the main CWDS and ignore the branches.</p>	<p>7.</p> <p>➤ Matt to check with Building Control to confirm whether sterilisation will be needed in the branches or not.</p>
<p>Hot Water Services:</p> <p>1. Hot water would be provided by the HIU's in each flat. As described above, the HIU's have two heat exchangers, one for space heating and one for domestic hot water heating. The domestic hot water heating heat exchanger has a primary heating circuit fed from the building's heating system. It also has a secondary circuit which is fed from the cold water supply. The heat exchanger transfers heat from the primary heating circuit to the cold water thereby providing domestic hot water for the flat. Again, complete hydraulic separation is maintained between the two circuits.</p> <p>2. It should be noted that the temperature of the hot water may not be as hot as tenants have previously had available from their Elson tanks. The HIU's are similar in principle to 'Combi' boilers which generate instantaneous hot water and are extensively used in new housing</p>	

MAX FORDHAM

Item	TMO Comments – Minutes from meeting 10/09/13
developments with little complaint from the users.	

Structural Impact <ol style="list-style-type: none"> 1. The current intention is to install the new heating and cold water pipes in a new vertical riser within the lift lobby area. This will require openings to be cut in the floor slab at all levels. 2. At each lift lobby level, the new heating and cold water pipes will branch off to serve each of the flats. These branches will need holes cut in the walls separating the flats and the lift lobby. 	<ol style="list-style-type: none"> 1. <ul style="list-style-type: none"> ➤ Matt to check viability with Stefano.
Metering <ol style="list-style-type: none"> 1. This will be a key issue for TMO. It is anticipated that meters will be provided on the heating system to each flat. Will they also be required on the cold water supplies to the flats? Will they be required to incorporate electricity readings? Presumably, meters will be located 	<ol style="list-style-type: none"> 1. <ul style="list-style-type: none"> ➤ Matt to give more details to TMO so that they can make an informed decision. Provide cost details for both energy use and installation costs. <ul style="list-style-type: none"> ○ Chweecheen to help providing capital costs.

MAX FORDHAM

<p>locally with remote data connection? Will meters be required to have a 'Pay as you Go' feature?</p> <p>2. Assumed metering is to all flats, boxing club, nursery and office space.</p>	<p>2.</p> <ul style="list-style-type: none">➤ Metering agreed for flats, boxing club and nursery.➤ Agreed not to meter the office but to have a branch so it could be added at a later date.
<p>Existing Services at Podium Level Survey</p> <p>1. A detailed survey of all M&E services in the Podium area is required. This especially applies to the soil/waste pipework which is likely to be the least flexible service in this area. As there are a number of mains services rising from the basement plant room, there will be implications for the residents when diversion work is carried out.</p> <p>2. It has been suggested that the heating mains serving the 'Finger Blocks' need to be diverted. At first glance, this looks like a fairly major piece of work and will require further consideration as to how this might be best achieved.</p> <p>3. When will the Podium area be available for a detailed survey?</p>	<p>1.</p> <ul style="list-style-type: none">➤ Matt to liaise with Bruce and provide Claire the details of when and where they want to survey. The nursery and boxing club were agreed to be a priority at the moment.➤ Philip to check on the status of asbestos checks. <p>2.</p> <ul style="list-style-type: none">➤ Agreed to separate the 'Finger Blocks' from the 'Grenfell Tower Project' scope.<ul style="list-style-type: none">○ TMO to give Max Fordham a separate brief for this new project.

MAX FORDHAM

Ideally w/c 16/09.	
M+E Overview for New Podium Levels <ol style="list-style-type: none">1. HIUs are proposed for new flats, same system as that proposed for tower flats.2. HIUs are also proposed for office and nursery spaces. Boxing club will have an HIU with integrated hot water storage cylinder.3. All spaces will be naturally ventilated.4. No gas services to be installed in these areas.	<p>➤ Provisionally agreed on natural ventilation in all areas with Claire to find out why there is currently air conditioning in the office.</p>

ELECTRICAL SERVICES

General <ol style="list-style-type: none">1. Generally confined to podium areas, but full scope to be defined as design develops.2. Previous Stage D CCTV provision still acceptable?3. Previous Stage D TV system proposals still acceptable?4. Lightning protection to be surveyed and retained. Are there any recent test certificates available?	<ol style="list-style-type: none">2. <p>➤ Agreed</p>3. <p>➤ Agreed</p>4. <p>➤ Claire to check whether there are any recent lightning test certificates</p>
---	---

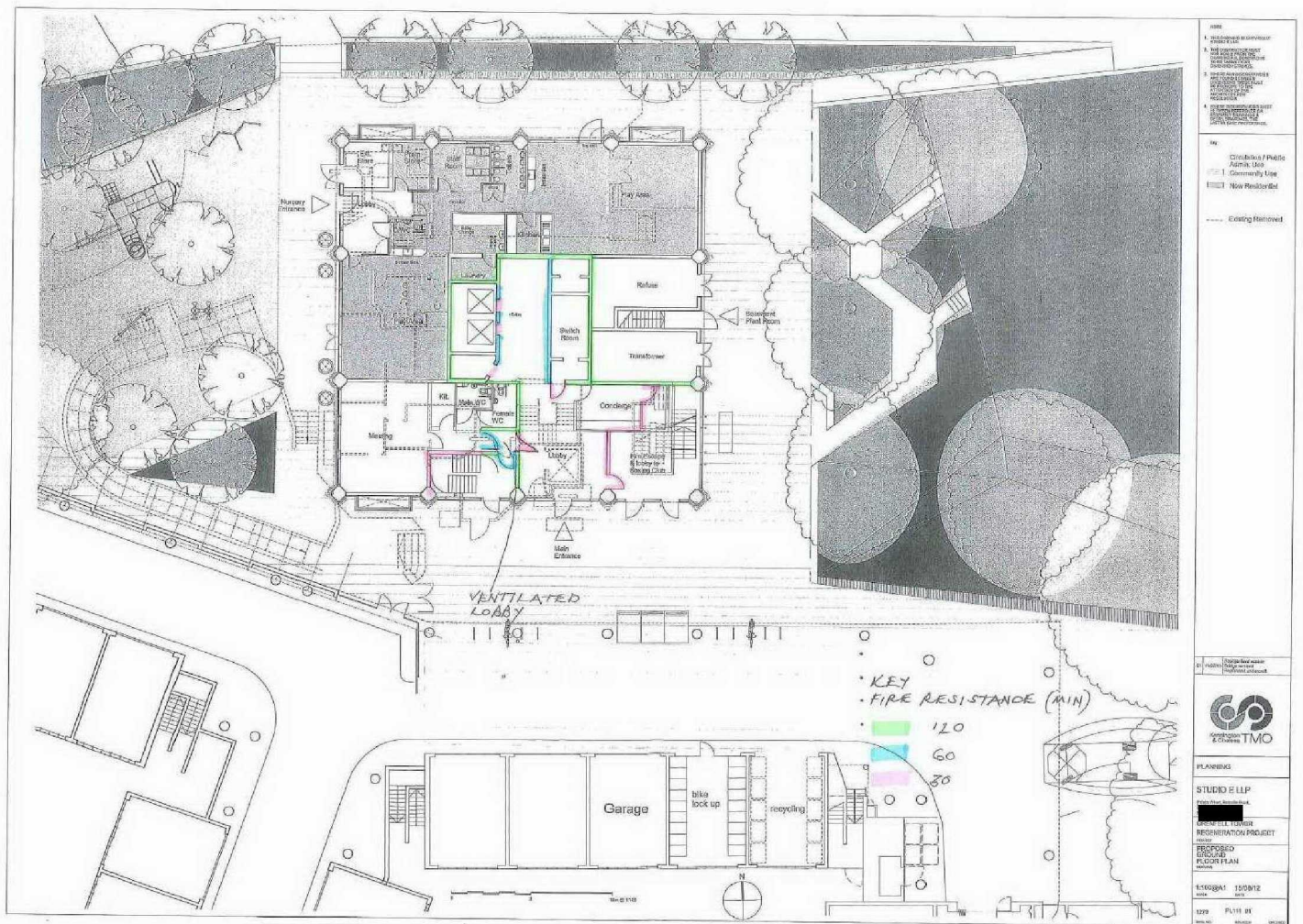
MAX FORDHAM

5. Access control system needs to be defined by TMO.	➤ Claire to investigate if door entry system is being upgraded as a separate project or should remain in this project
--	---

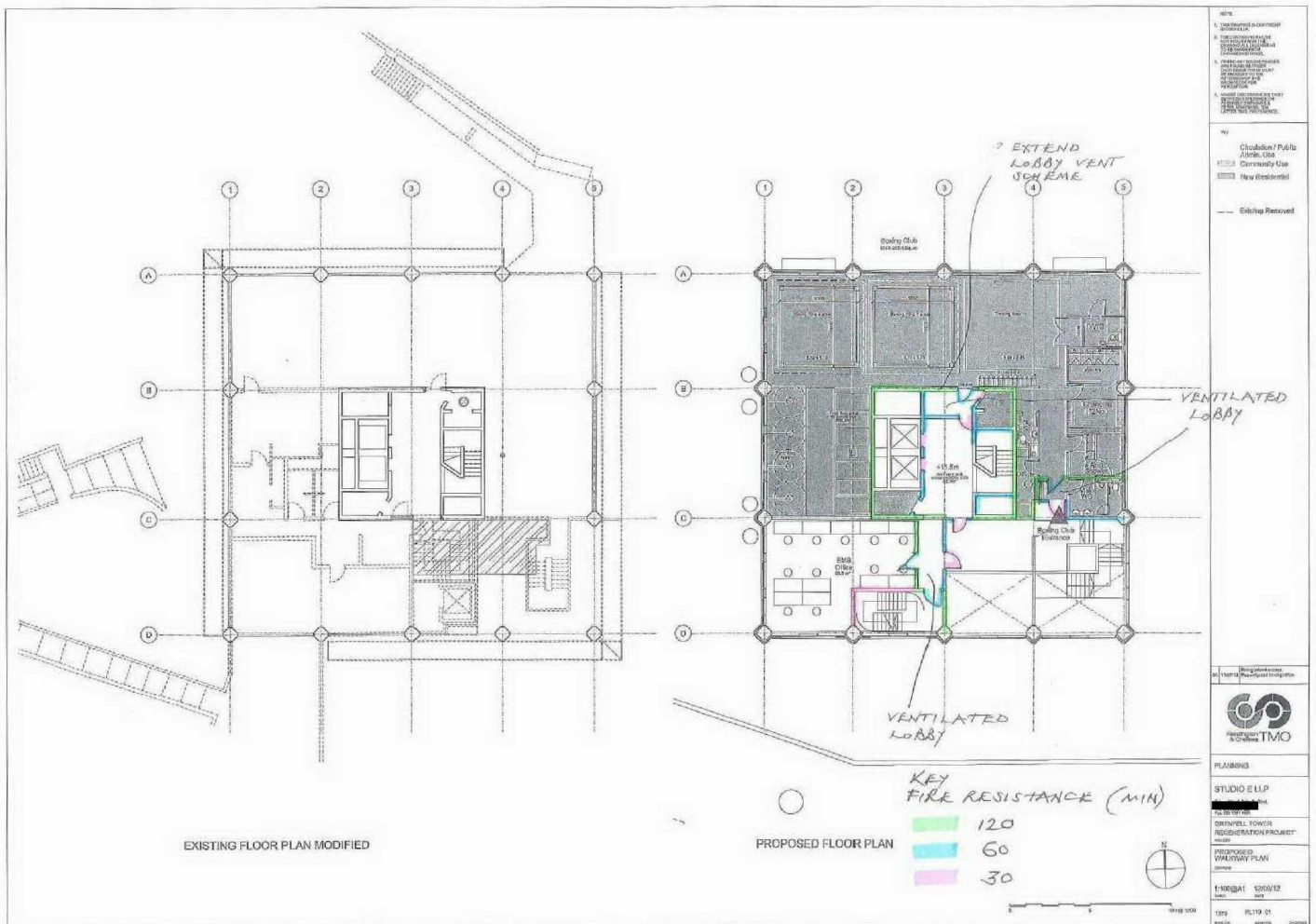
FIRE STRATEGY

<p>General</p> <ol style="list-style-type: none">1. Are Exova updating their Stage D report? There are discrepancies between Stage D report and earlier drawing mark-ups regarding dry riser provision.2. Building Control need to be engaged to review aspects of the design. E.g. extension of the dry riser and use of the smoke extract vent for general lobby ventilation purposes.	<ol style="list-style-type: none">1. ➤ Bruce to talk to Exova to see where they are with this.2. ➤ Philip to investigate building control application.
--	---

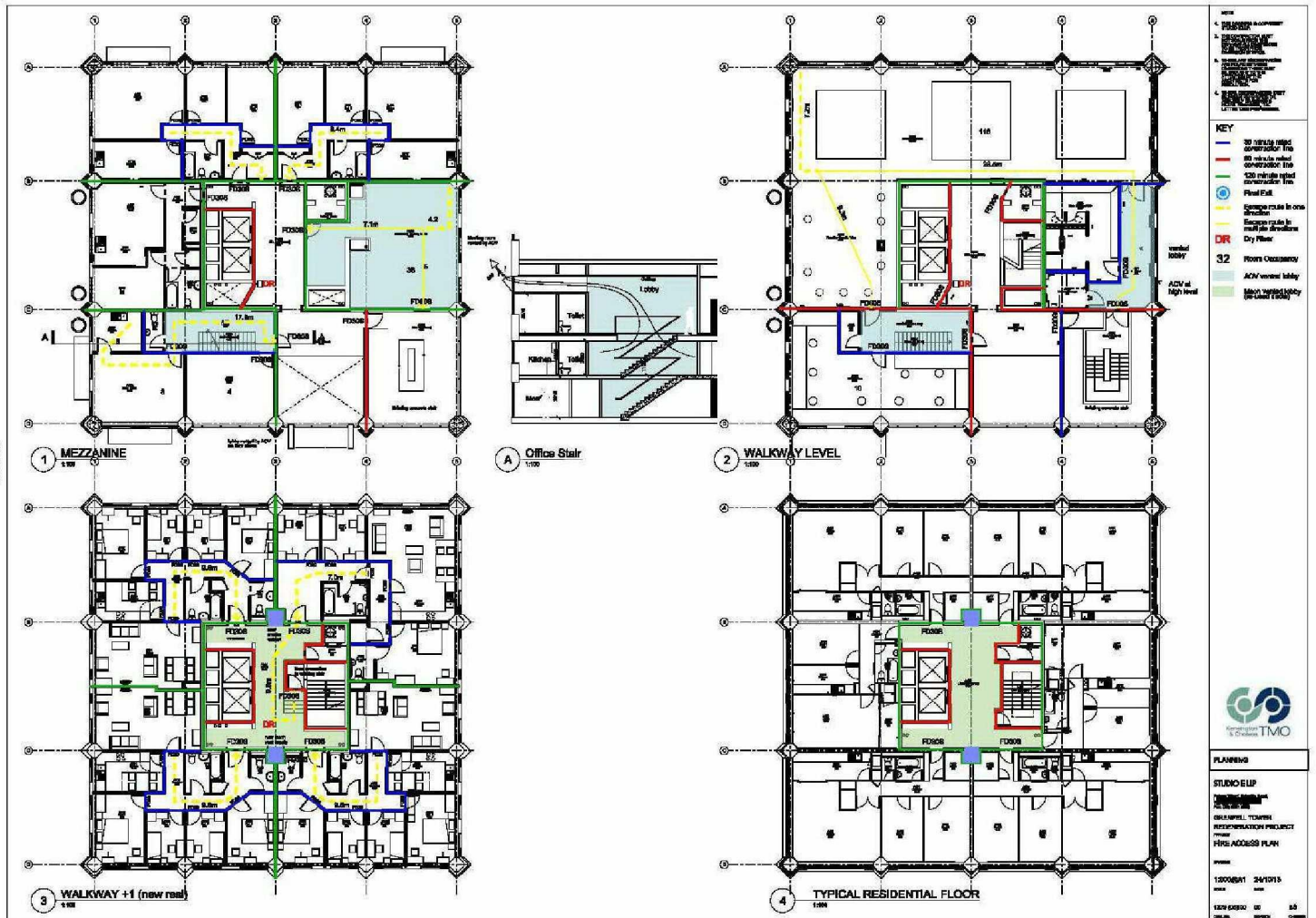
- Max Fordham's fee proposal agreed up to Stage E.
- **TMO** to look through the Studio E contract and discuss with Philip this week if there are any queries. Studio E fee drawdown schedule was agreed.
- **Bruce** to chase up getting a window mock-up. It needs to be decided whether the service for this mock-up should be paid for or not.
- **Refurbishment of void flat:**
 - **Matt** to create a spec for pipe runs within the flat to use as a demonstration
 - **TMO** to make the flat habitable
- **Everyone** to look through the document outlining the planned surveys. Get back to **Matt** by Friday with any comments.
- **Claire** to arrange follow up meeting in two weeks' time
 - First choice for the date would be 24/09 and 23/09 if that is not possible (depending on the availability of the meeting room).
 - This meeting will then be rolled on to occur fortnightly.
- **Phillip** to update risk register and agenda for review at the next meeting.



SEA00014274_0211



SEA00014274_0213



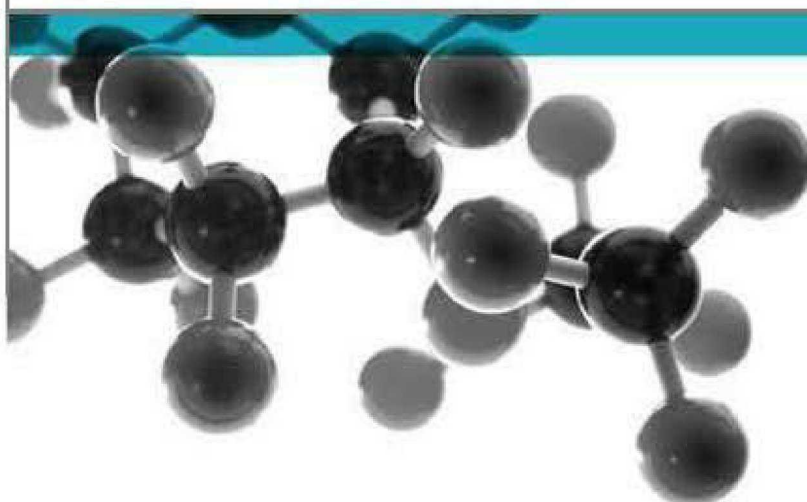
SEA00014274_0214

Exova Warringtonfire
Bramah House
65-71 Bermondsey Street
London
SE1 3XF
United Kingdom

T: [REDACTED]
F: [REDACTED]
E: london@exova.com
W: www.exova.com



Grenfell Tower Outline Fire Safety Strategy



A Report to: Studio E LLP

Project No: 301922

Document Reference: MT14634R

Date: 24/10/13

Issue No: 02

Page: 1

Testing
Advising
Assuring

Registered Office: Exova (UK) Ltd, Lockwood Industrial Estate, Newbridge, Middlesex EH28 8PL United Kingdom. Reg No SC 70429



E-EQU-FT-CS-WR-F-1007 (Rev 04)

This report is issued in accordance with our terms and conditions, a copy of which is available on request.

Revision History

Issue No : 01	Issue Date : 31/10/12
Reason for Revision: First issue	

Issue No : 02	Issue Date : 24/10/13
Reason for Revision: First issue	

Prepared by:	 Terry Ashton Associate (For and on behalf of Exova Warringtonfire)
Reviewed by:	 Tony Pearson Senior Consultant (For and on behalf of Exova Warringtonfire)

Validity

This report is formulated on the basis of the information and experience available at the time of preparation. It is applicable to the above-mentioned project only in accordance with the client's instructions. It is only valid provided no other modifications are made other than those for which a formal opinion has been sought and given by Exova Warringtonfire.

Contents

1	INTRODUCTION	4
2	STATUTORY CONSIDERATIONS	5
2.1	The Building Regulations 2010	5
2.2	The Regulatory Reform (Fire Safety) Order 2005	5
2.3	London Building Acts (Amendment) Act 1939	5
3	PROPOSED OUTLINE FIRE SAFETY STRATEGY	6
3.1	Compliance with The Building Regulations 2010	6
3.1.1	Compliance with B1 (means of warning and escape).....	6
3.1.2	Compliance with B2 (internal fire spread (linings))	7
3.1.3	Compliance with B3 (internal fire spread (structure)).....	8
3.1.4	Compliance with B4 (external fire spread).....	8
3.1.5	Compliance with B5 (access and facilities for the fire service).....	8
3.2	Compliance with the Regulatory Reform (Fire Safety) Order 2005	9
4	REFERENCES	10

1 Introduction

The proposed development is the refurbishment of Grenfell Tower, a 24 storey residential block incorporating a boxing club at ground storey level, a nursery at mezzanine level (between the ground storey and walkway level) and office accommodation in the mezzanine level between walkway level and first storey level.

The refurbishment comprises:

- The creation of a new reception area, offices and a new stair providing access to the boxing club at ground storey level;
- The re-siting of the nursery to ground storey level;
- The creation of new residential apartments and office accommodation in the mezzanine over the ground storey (mezzanine level);
- The re-siting of the boxing club to walkway level;
- The creation of new offices and a community office at walkway level;
- The creation of new residential apartments in the level over walkway level (walkway + 1 level); and
- Improvements to the building services.

This report details the applicable statutory controls in respect of fire safety and contains an outline fire safety strategy for compliance with these statutory controls.

The report is based upon discussions held with the design team, the Royal Borough of Kensington & Chelsea and on fire access and fire strategy drawings (numbers 1279_SEA_(08) 100 and 1279_SEA_(08) 101) produced by Studio E LLP.

Document No.:	MT14634R	Page No.:	4 of 10
Project No.:	301922	Issue Date:	24/10/13
Client:	Studio E LLP	Issue No.:	02
		E-EQ U-FT-CS-WR-F-1007 (ss 04)	

2 Statutory Considerations

2.1 The Building Regulations 2010

The building work will have to be carried out in conformity with the requirements of Schedule 1 of the Regulations. To satisfy Regulation 4, it will be necessary to ensure that, where a building is altered, it is no more unsatisfactory in relation to the requirements of Schedule 1 than it was before the works were carried out.

The requirements of Schedule 1 relating to fire safety are:

- a) B1 (means of warning and escape);
- b) B2 (internal fire spread (linings));
- c) B3 (internal fire spread (structure));
- d) B4 (external fire spread); and
- e) B5 (access and facilities for the fire service).

Compliance with these requirements is normally achieved by meeting the standards contained in Approved Document B (ADB)^① and/or BS9991^②.

2.2 The Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order came into effect on 1 October 2006. One effect of this Order is that the owner (or the "responsible person" as defined in the Order) will have to carry out a fire risk assessment (or have a fire risk assessment carried out on his/her behalf). Compliance with the Regulatory Reform Order is normally achieved by following the guidance given in the DCLG Guide^③.

2.3 London Building Acts (Amendment) Act 1939

The building was subject to the requirements of Section 20 of the London Building Acts (Amendment) Act 1939. However, Section 20 was repealed on 9 January 2013.

Document No.:	MT14634R	Page No.:	5 of 10
Project No.:	301922	Issue Date:	24/10/13
Client:	Studio E LLP	Issue No.:	02
E-EQ U-FT-CS-WR-F-1007 (ss 06)			

3 Proposed Outline Fire Safety Strategy

3.1 Compliance with The Building Regulations 2010

3.1.1 Compliance with B1 (means of warning and escape)

FIRE DETECTION/ALARM SYSTEM

The nursery, the boxing club and the ground and walkway offices will all be provided with at least a Type "M" system as defined in BS 5839-1⁶. Each system in these three elements will be "stand alone" but interlinked so that an outbreak of fire in one of them will be enunciated on all fire alarm control panels.

New apartments will be provided with "LD3" systems of detection and sounders as defined in BS 5839-6⁶.

MEANS OF ESCAPE

NURSERY

The nursery will have at least two exits direct to the exterior.

BOXING CLUB

The boxing club will have two exits: one to the stair serving the office accommodation and one via the new stair from walkway level to ground storey level.

APARTMENTS

The new apartments in the mezzanine over walkway level will have access via a new doorway to the existing escape stair serving the residential tower.

The new apartments in the mezzanine over the ground storey will have access to the new stair serving the boxing club.

While the sharing means of escape between residential and non-residential accommodation is not endorsed by current statutory guidance, these proposals represent a continuation of the existing principles for means of escape in the building and therefore do not create a non-compliance with the requirements of the Building Regulations. It is noted in this context that the fire loads in the offices and boxing club are no greater than those in a typical flat, and that the non-residential accommodation will be separated from the stairs by ventilated lobbies (see below). The risks to the occupants of a flat from a fire in a non-residential demise are therefore not considered significantly greater than those stemming from a fire in another flat.

OFFICES

The new offices at mezzanine and walkway levels will have access to a stair which delivers to the main entrance to the building and to the new stair serving the boxing club. The office accommodation at ground storey level will have access to the main entrance to the building.

NEW STAIR

The new stair will be separated from the remainder of the accommodation at each level by construction having a 30 minute standard of fire resistance with the doorways therein fitted with self-closing "FD30S" doors.

EXISTING STAIRS

The existing stair (and the lobbies thereto at each level) which serves the residential apartments forms part of the fire-fighting shaft serving the building. Therefore, the stair and lobbies will be enclosed by construction having a standard of fire resistance to satisfy B5 (see below)

Document No.:	MT14634R	Page No.:	6 of 10
Project No.:	301922	Issue Date:	24/10/13
Client:	Studio E LLP	Issue No.:	02
E-EQ U-FT-CS-WR-F-1007 (6 of 10)			

The existing stair which serves the new office accommodation (and which serves as an alternative escape from the boxing club) together with the exit from this stair to the main entrance at ground storey level will be enclosed by construction having at least a 30 minute standard of fire resistance with the doorways therein fitted with self-closing "FD30S" doors. However, where parts of the walls enclosing this stair form part of the enclosure to the fire-fighting lobbies, these parts will have a standard of fire resistance of 120 minutes and the doorways therein will be fitted with self closing "FD60S" doors.

SMOKE VENTILATION OF LOBBIES

LIFT LOBBIES

The lift lobbies serving the residential apartments at mezzanine +1 level will be ventilated by the existing supply and extract ventilation system which serves the upper levels which will be extended down to this level. This supply and extract system will be overhauled as part of the improvement to the building services. This is covered in a separate report by Max Fordham.

OTHER LOBBIES

The stair serving the office accommodation effectively forms lobbies between this accommodation and the lift lobbies referred to above. An automatic vent (AOV) 0.4m² in area will be provided at the head of the stair. This will provide a means for venting smoke from the office accommodation at mezzanine and walkway levels and from the lift lobby at walkway level. An AOV 0.4m² in area will be provided between the lift lobby and the stair to facilitate smoke ventilation of the latter.

The corridor between the offices and the main entrance at ground storey level will also be provided with an AOV 0.4m² in area opening direct to atmosphere.

The lobby between the boxing club and the new stair at walkway level will also be ventilated direct to atmosphere via an AOV 0.4m² in area.

The community room on the mezzanine above ground storey level will be vented direct to the exterior by an AOV 0.4m² in area.

All these AOVs will open on activation of smoke detectors sited within each of the areas.

ESCAPE ROUTES WITHIN APARTMENTS

The new apartments will have protected entrance halls (i.e. entrance halls enclosed by construction having a 30 minute standard of fire resistance with the doorways therein fitted with "FD20" doors). Bathrooms and WCs will not be enclosed by fire resisting construction but, where they abut other rooms, they will be separated from the latter by walls having a 30 minute standard of fire resistance.

The travel distance from the apartment entrance door to the door to the furthest habitable room will not exceed 9m.

EMERGENCY LIGHTING

Where necessary, emergency lighting will be provided in the escape routes from the building designed in accordance with the recommendations of BS 5266⁹⁾.

3.1.2 Compliance with B2 (internal fire spread (linings))

All new wall and ceiling linings will be the equivalent of the following:

- a) in circulation spaces and escape routes other than circulation spaces within the apartments – Class 0 (using the UK testing methods) or Class B-s3, d2 (using the European testing methods); and
- b) elsewhere – Class 1 (using the UK testing methods) or Class C-s3, d2 (using the European testing methods), although a Class 3 standard or Class D-s3, d2 could be used within rooms not exceeding 30m² in non residential accommodation or 4m² in area within the apartments.

Document No.:	MT14634R	Page No.:	7 of 10
Project No.:	301922	Issue Date:	24/10/13
Client:	Studio E LLP	Issue No.:	02
		E-EQ U-FT-CS-WR-F-1007 (6/10)	

(NOTE: the European testing methods referred to above are the new methods developed as part of a harmonisation program for fire testing within Europe as detailed in BS EN 13501-1: 2002⁽⁷⁾. Materials achieving the classifications to either the new European test method or the UK test methods are considered to be acceptable).

3.1.3 Compliance with B3 (internal fire spread (structure))

FIRE RESISTANCE OF ELEMENTS OF STRUCTURE

All new elements of structure will be constructed to have the same standard of fire resistance as that of the existing elements. This is assumed to be 120 minutes for the structural frame and 60 minutes for floors.

COMPARTMENTATION

Compartment walls and/or floors will be provided:

- a) Between apartments and other apartments;
- b) Between apartments and common areas;
- c) Between the nursery and the remainder of the building;
- d) Between the boxing club and the remainder of the building; and
- e) Between the offices and the remainder of the building.

Compartment walls and floors will have a 60 minute standard of fire resistance unless they form part of the structural frame of the building (where they will have a 120 minute standard of fire resistance). Doorways within compartment walls will be fitted with self closing doors having a 60 minute standard of fire resistance, except where a different standard will be necessary to satisfy B5 (see below).

3.1.4 Compliance with B4 (external fire spread)

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.

3.1.5 Compliance with B5 (access and facilities for the fire service)

A new inlet to the existing dry rising main will be provided in a location where it will be within 18m (and in sight of) where a pumping appliance could pull up.

Access to the building for fire service personnel will be at ground storey level. If access is obtained at ground storey level, fire service personnel will have to proceed up the internal stair to either the mezzanine above the ground storey or to walkway level. Outlets from the dry rising main will be provided in the common lobbies at both these levels and in the mezzanine over walkway level.

Notwithstanding the above, access to the fire-fighting lift will be available at ground storey level

The entrance hall containing the stair will be separated from all the accommodation by construction having a 120 minute standard of fire resistance. All connections to the accommodation in this enclosure (except the connections to the common lobbies) will be via lobbies enclosed to the same standard of fire resistance with the openings fitted with self closing doors of the following standard:

- To the accommodation – "FD60S"; and
- To the stair – "FD30S".

As stated above, these lobbies will be ventilated.

Document No.:	MT14634R	Page No.:	8 of 10
Project No.:	301922	Issue Date:	24/10/13
Client:	Studio E LLP	Issue No.:	02
E-EQ U-FT-CS-WR-F-1007 (ss 06)			

A concierge office will be incorporated within the main entrance to the building. This is considered to be acceptable as all the occupants of the other areas of the building will be able to escape independently of this area.

3.2 Compliance with the Regulatory Reform (Fire Safety) Order 2005

It is considered that the fire safety measures described above will satisfy the requirements of the Regulatory Reform (Fire Safety) Order.

Portable fire-fighting equipment (fire extinguishers) will be provided in the nursery, boxing club and office accommodation in accordance with the recommendations of BS 5306-8[®].

Document No.:	MT14634R	Page No.:	9 of 10
Project No:	301922	Issue Date:	24/10/13
Client:	Studio E LLP	Issue No.:	02
		E-E-Q U-FT-CS-WR-F-1007 (ss 04)	

4 References

1. Approved Document B. Fire safety. Volume 2 – Buildings other than Dwellinghouses. Department for Communities and Local Government - TSO 2006
2. BS 9991: 2011. Fire safety in the design, management and use of residential buildings
3. Fire Safety Risk Assessment – sleeping accommodation. Department for Communities and Local Government 2006
4. BS 5839-1: 2002. Fire detection and alarm systems for buildings: Part 1: Code of practice for system design, installation, commissioning and servicing
5. BS 5839-6: 2004. Fire detection and alarm systems for buildings - Part 6: Code of practice for the design, installation and maintenance of fire detection and fire alarm systems in dwellings
6. BS 5266: Part 1: 1999 Emergency lighting. Code of practice for emergency lighting of premises other than cinemas and certain other specified premises used for entertainment
7. BS EN 13501-1: 2002. Fire classification of construction products and building elements. Classification using data from reaction to fire tests
8. BS 5306-8: 2000. Fire extinguishing installations and equipment on premises. Part 8: Selection, and installation of portable fire extinguishers – Code of practice

GRENFELL TOWER

25 OCT 2013

SMOKE CONTROL PROPOSALS

Lift Lobbies on Residential Floors

Existing System

The system comprises a fresh air shaft and a smoke extract shaft serving all the lift lobbies in the residential levels of the building. The system is designed to work as a natural ventilation system, but supply and extract fans are also installed to enable the Fire Brigade to provide additional mechanical ventilation if they consider that to be advantageous in dispersing smoke.

Each lift lobby has a fresh air inlet at low level on one side of the lobby and a smoke exhaust vent on the opposite wall of the lobby at high level. The vents connect directly into the fresh air shaft and the smoke extract shaft respectively.

Each vent has a remote operated damper which is normally closed.

There is a smoke detector in each lobby. In the event of a fire in any of the lobbies, the smoke vent dampers and the fresh air dampers serving that particular lobby open. The dampers on all other levels remain closed.

A fireman's switch at ground level gives the Fire Brigade the choice of using mechanical ventilation.

Proposed System

It is proposed to install a new ventilation system which will primarily be for fire safety and smoke control, but which will also provide some ventilation to reduce the possibility of the lobbies becoming uncomfortably warm due to heat emission from the heating pipes running through the lobbies.

The current system is around 40 years old and over the years has had some of the original parts replaced with different components. The proposed system will provide new supply and extract fans as well as consistent new components on all floors and should prove significantly more reliable in operation and be easier to maintain than the current system. It will also make routine testing simpler and easier to carry out.

Smoke Control

As the existing installation was designed and installed approximately 40 years ago, it is not possible to adapt the existing system to comply with current standards. Given the physical constraints of the existing building, the design approach has therefore been to upgrade the existing system to as high a standard as possible.

It is proposed that the new system will be a mechanical supply and extract system which does not rely on natural ventilation as the performance of a naturally ventilated system would be difficult to model and verify. As there are no directly applicable standards which can be referred to, it is considered that it would be reasonable to design the system to provide an air-change rate of approximately 15 air-changes/hour.

The existing fresh air shafts and smoke extract shafts will be reused.

New motorised dampers will be fitted to all fresh air and smoke extract vents.

New fresh air supply and smoke extract fans will be provided.

New smoke detectors will be fitted in the lobbies.

A new fire panel will be installed on the ground floor.

On detection of smoke within any lift lobby served by the smoke control system, the fresh air and smoke dampers serving that particular lobby would open fully and the supply and extract fans would operate. The fresh air and smoke dampers on all other levels would all be closed.

The fire panel would have a ventilation selector switch which would enable the Fire brigade to control the supply and extract fans.

Dual power supplies would provide normal/stand-by power from different sources to the fans and to the fire panel.

Temperature Control

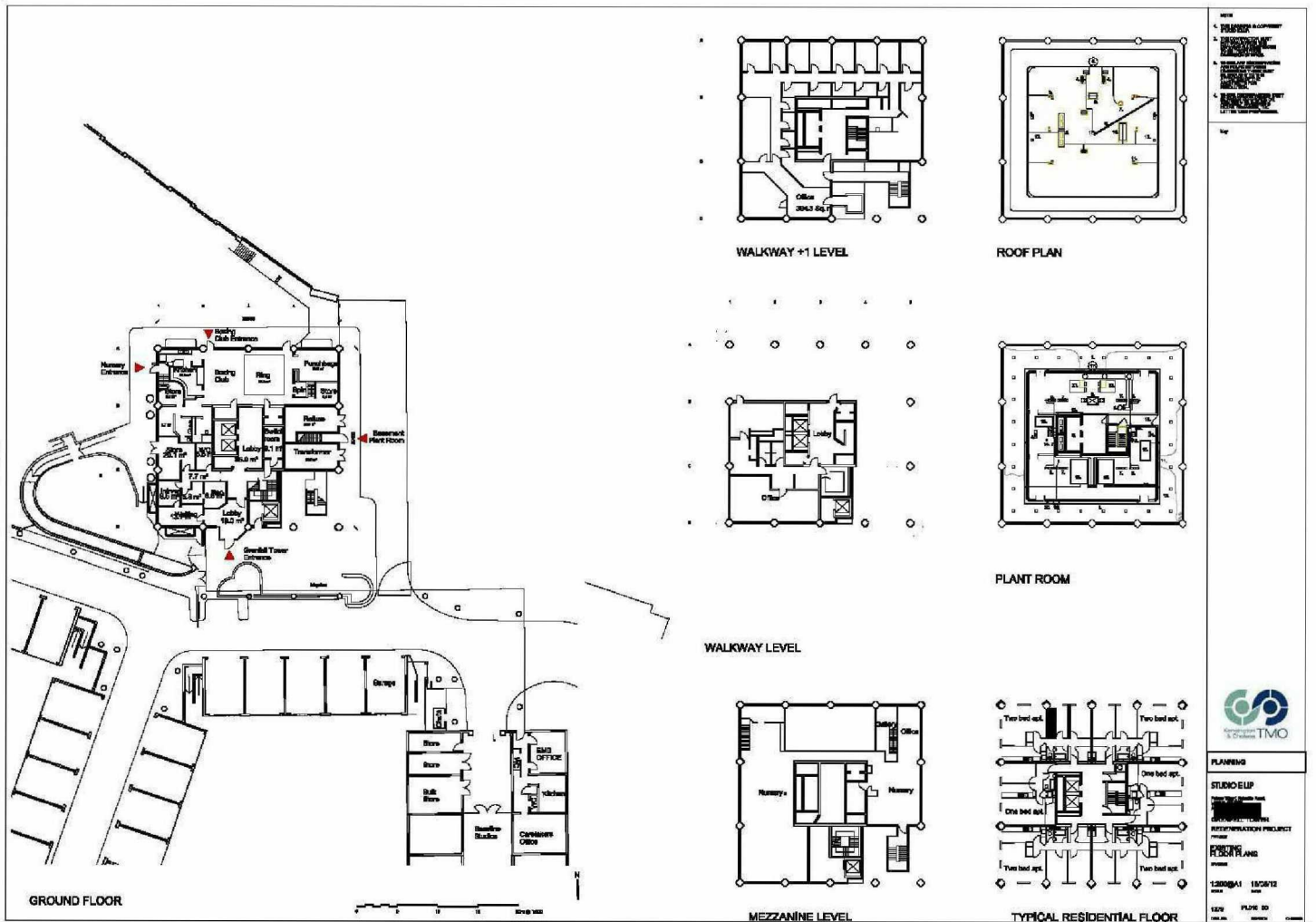
As part of the refurbishment of the building, new heating mains serving the residential areas are being installed. These will rise through the building within the lift lobbies with branches to the flats at each level. These heating mains will be relatively large and even with a high standard of insulation, they will emit a significant amount of heat into the lobbies.

This has caused considerable problems on other projects and it is considered essential for this project that provision is made to provide adequate venting.

Normally, comfort ventilation would be kept separate from smoke ventilation. However, for this project where the lobbies are land-locked, there are few, if any, options available apart from using the smoke vent system.

It is therefore proposed that under normal conditions the fresh air and smoke dampers are kept open. Temperature sensors located within a few 'typical' lobbies would operate the fans if the temperature in any of these lobbies rose to an uncomfortable level. Conversely, the temperature sensors would also close the dampers if on very cold days the lobby temperature dropped below a pre-set level.

In the event of smoke being detected within any lift lobby served by the smoke control system, the fresh air and smoke dampers serving that particular lobby would remain open and the supply and extract fans would operate. The fresh air and smoke dampers on all other levels would all be closed. The system would be set up such that it was 'fail-safe' with priority always being given to the fire safety operation.



SEA00014274_0228

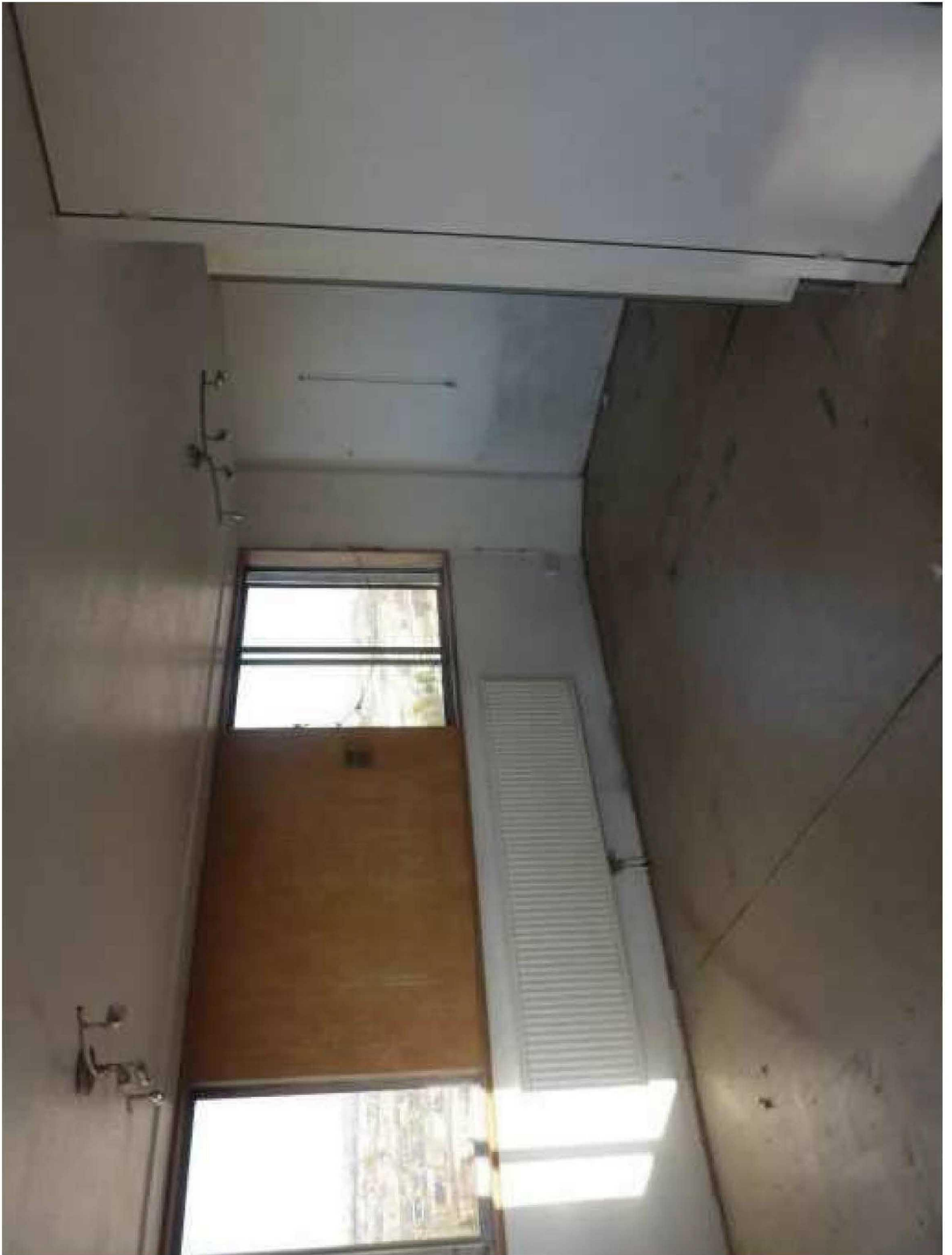


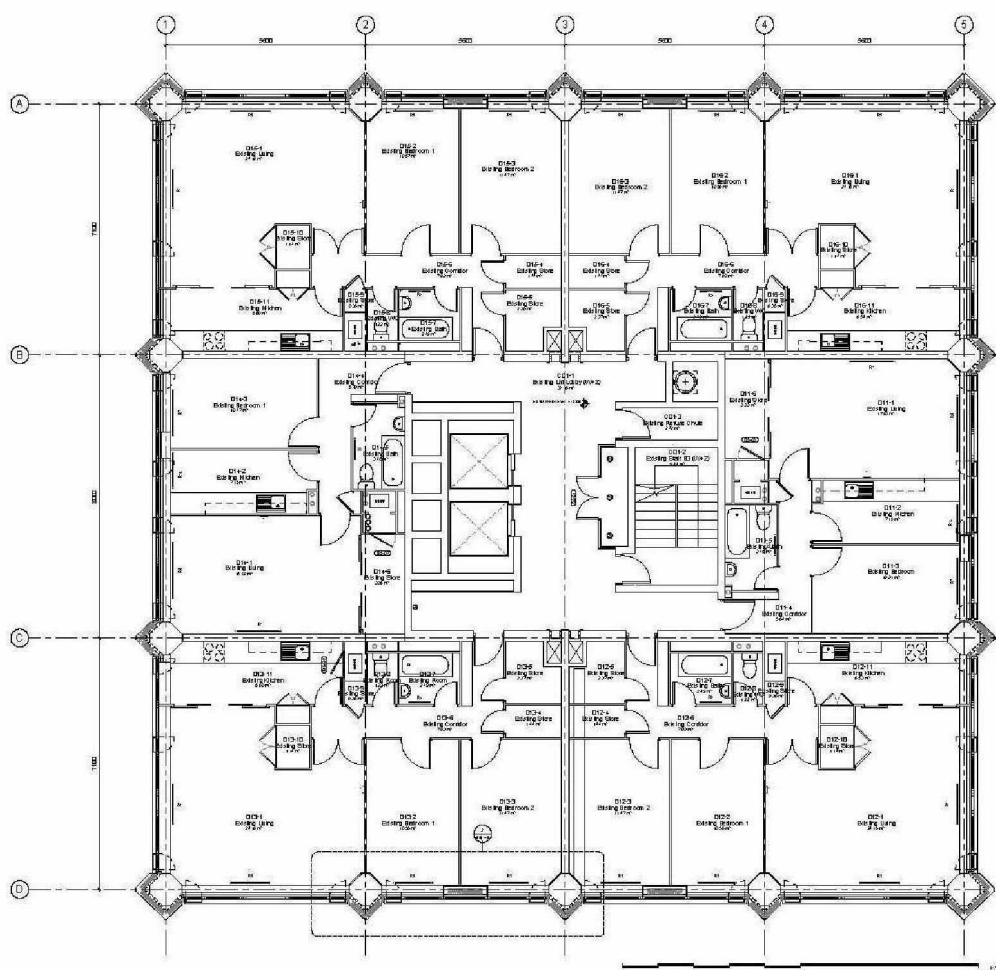












1. The emphasis on the student's self
2. The contribution of the student's self to the learning process, all learning is no longer pre-determined
3. The new learning process is based on the student's own view of the world, not on the teacher's view of the world
4. The new learning process is based on the student's own view of the world, not on the teacher's view of the world

Id	Dir	Description



2008年10月1日

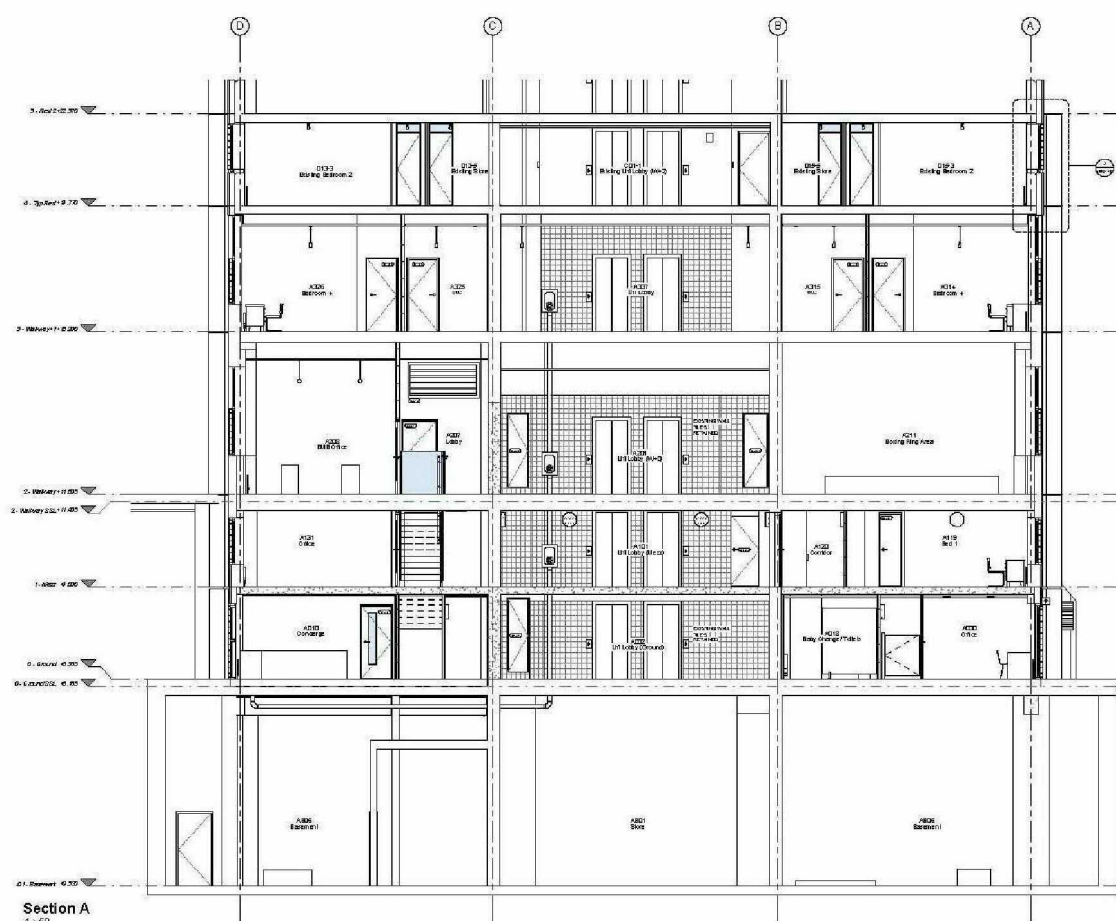
STUDICELLP

GREEN FELL TOWER
REGENERATION PROJECT

Proposed Residential IPZs

1:50	09/11/13
------	----------

123.9	0.0105	10
-------	--------	----

Section A
1:50

- NOTED
- 1. THE EMPHASIS ON DIFFERENT STAGES OF LIP
- 2. THE CONTRIBUTION OF LIPOLYSIS AND LIPIDATION TO DIFFERENT STAGES OF LIPIDATION
- 3. THE EFFECT OF DIFFERENT STAGES OF LIPIDATION ON THE DIFFERENT STAGES OF LIPIDATION
- 4. THE EFFECT OF DIFFERENT STAGES OF LIPIDATION ON THE DIFFERENT STAGES OF LIPIDATION



Id	Dir	Description



2008年10月1日

STUDICELLP

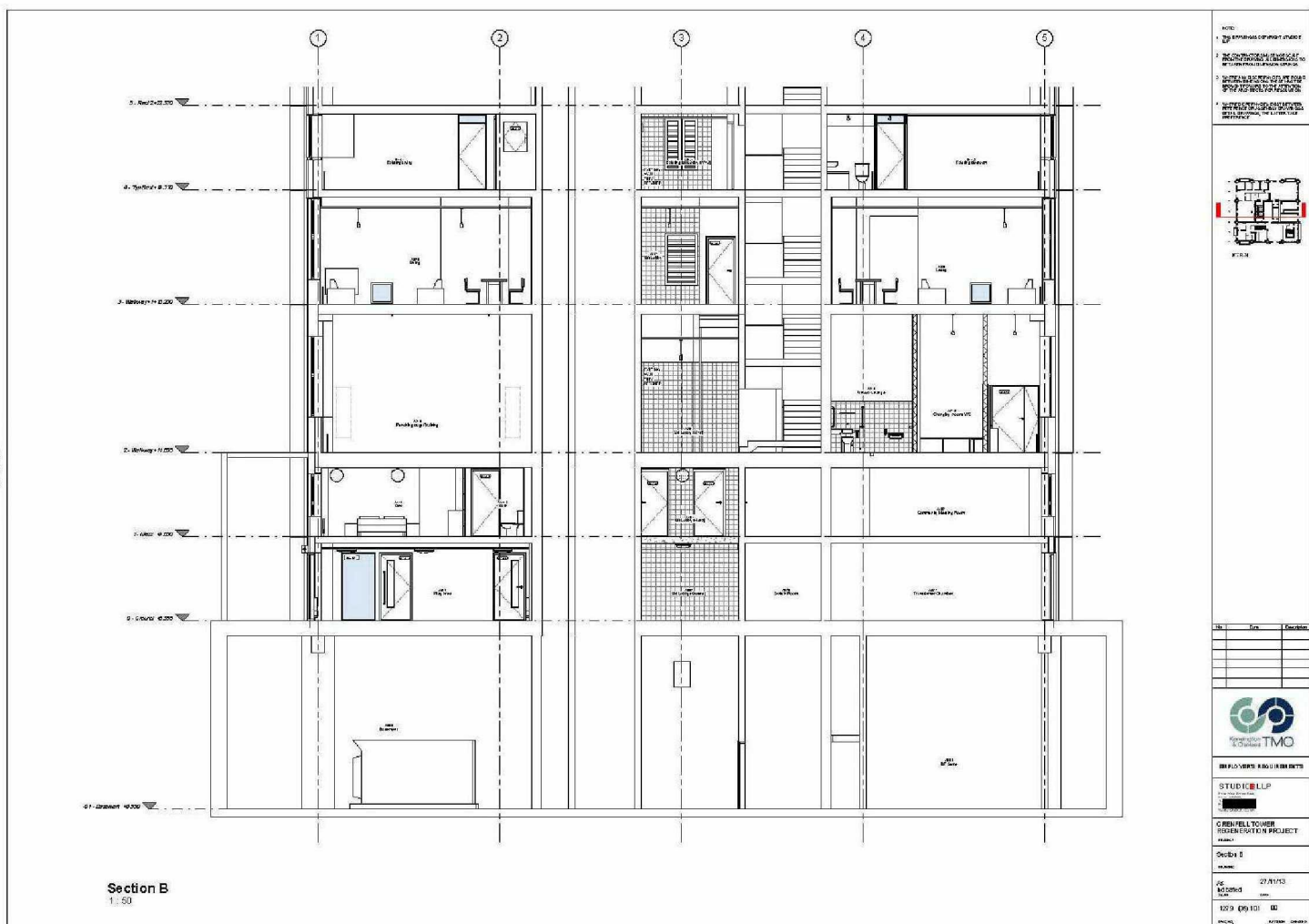
GREEN FELL TOWER
REGENERATION PROJECT

Section A

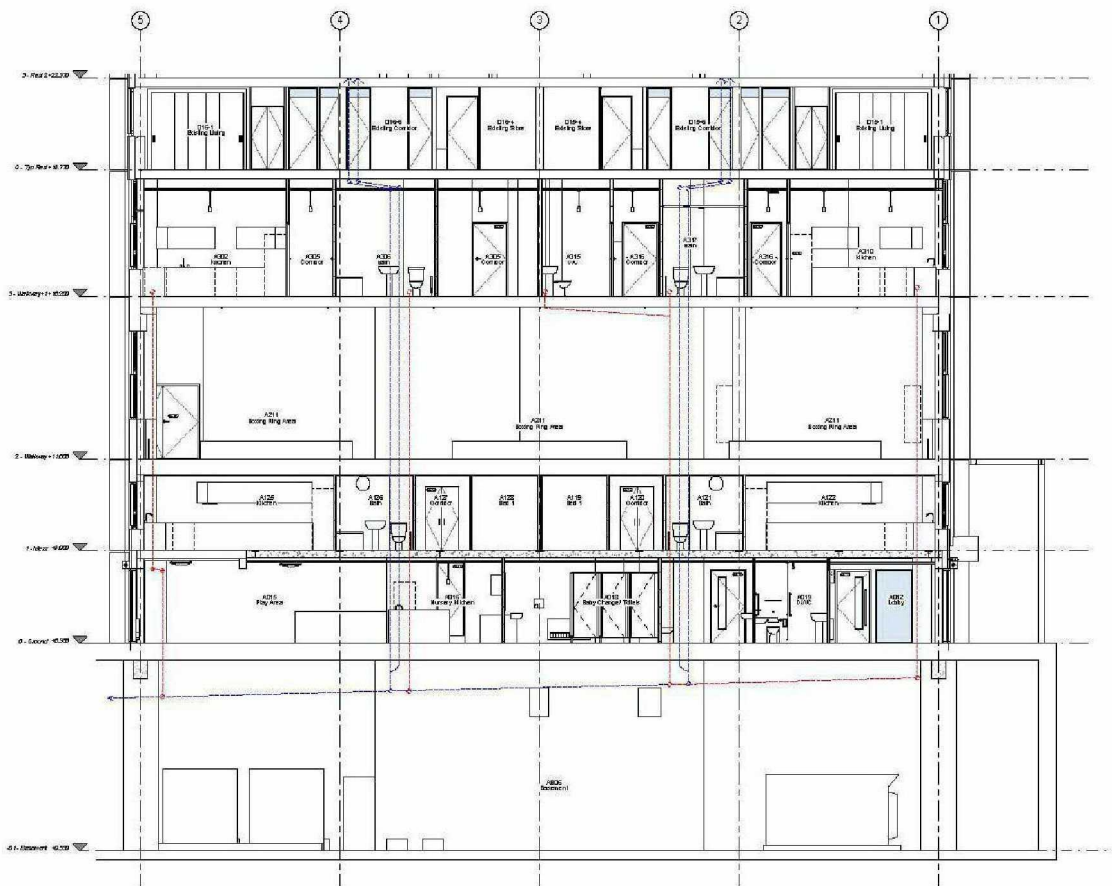
House	
86	27/11/13

122.9 (6) 100 00

SEA00014274_0236



SEA00014274_0237



Section G
1:50

- NOTES:
1. ALL DIMENSIONS ARE IN METERS
 2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
 3. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
 4. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
 5. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED



SECTION

No.	Date	Location



STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

STUDIO S&T

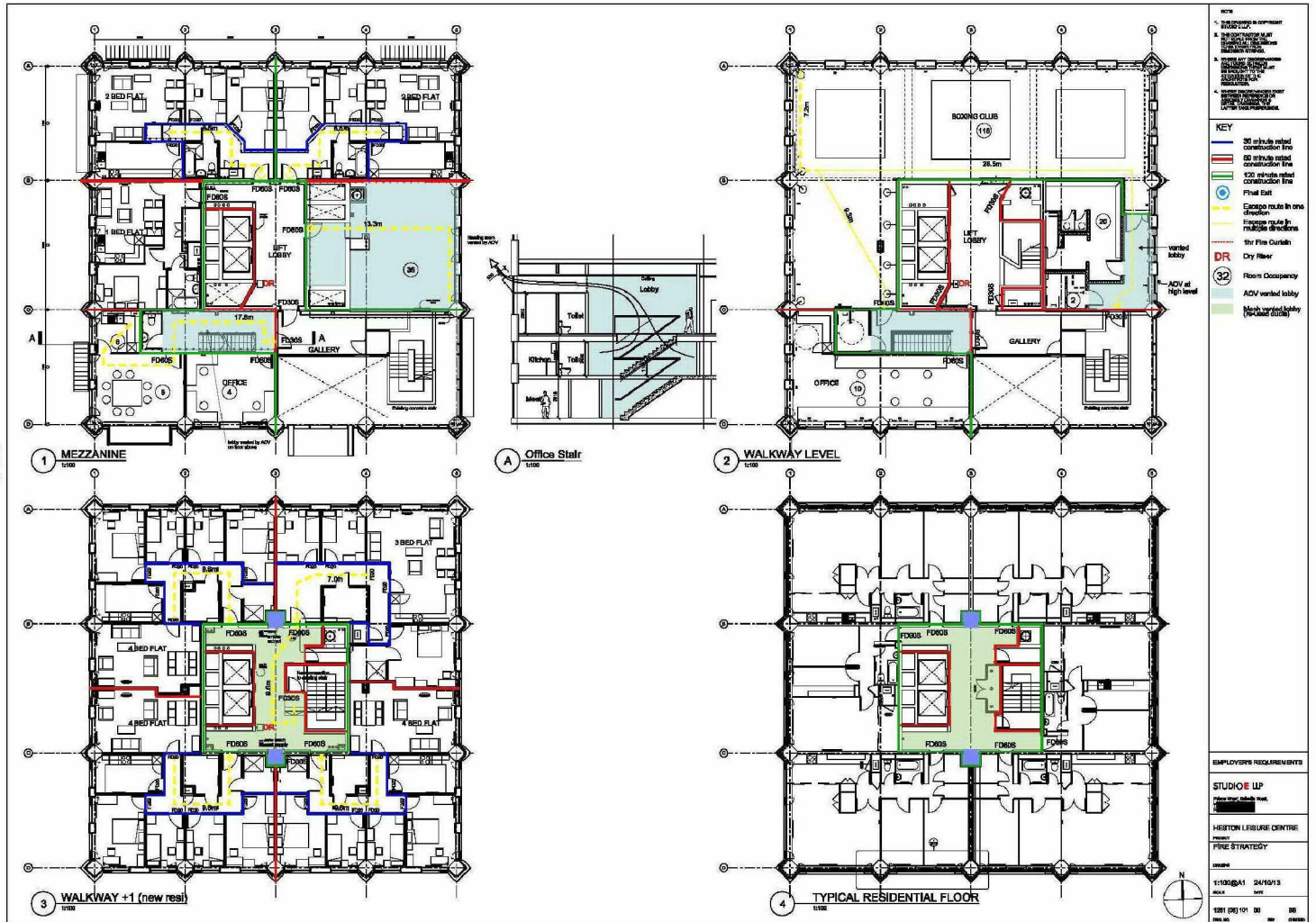
STUDIO S&T

STUDIO S&T

STUDIO S&T

SEA00014274_0238

SEA00014274/238



SEA00014274_0239

Planning and Borough Development

Kensington Town Hall, Hornton Street, LONDON, W8 7NX

Executive Director Planning and Borough Development

Jonathan Bore



Mr M Watterson
IBI Taylor Young
Chadsworth House
Wilmslow Road
HANDFORTH
Cheshire
SK9 3HP

Date: 10/01/2014

My Ref: /PP/12/04097

Dear Sir/Madam,

TOWN AND COUNTRY PLANNING ACT 1990
TOWN AND COUNTRY PLANNING
(DEVELOPMENT MANAGEMENT PROCEDURE) ORDER 2010

Permission for Development (Conditional)

The Borough Council hereby permits the development referred to in the under-mentioned schedule subject to the conditions set out therein and in accordance with the plans submitted, save insofar as may otherwise be required by those plans or by the said conditions. Your attention is drawn to the enclosed information sheet.

SCHEDULE

Development:

Refurbishment of existing Grenfell Tower including new external cladding and fenestration, alterations to plant room, reconfiguration of lower 4 levels to provide 7 new residential units (use class C3), replacement nursery (use class D1) and boxing club (use class D2) facilities, external public realm works, redevelopment and change of use of existing garages to refuse collection area.

Site Address:

Grenfell Tower, Grenfell Road, LONDON, W11 1TH

RBKC Drawing Nos:

PP/12/04097 PP/12/04097/A

Applicant's Drawing Nos:

1279_PL_001_00, 1279_PL_002_00, 1279_PL_003_01,
1279_PL_010_00, 1279_PL_020_00, 1279_PL_030_00,
1279_PL_110_01, 1279_PL_111_01, 1279_PL_112_01,
1279_PL_113_01, 1279_PL_114_01, 1279_PL_115_00,
1279_PL_116_00, 1279_PL_117_01, 1279_PL_118_01,
1279_PL_125_01, 1279_PL_200_01, 1279_PL_302_01,
1279_PL_303_01, 1279_PL_304_01, 1279_PL_305_01.

Application Dated:

18/10/2012

Application Completed:

29/10/2012

Application Revised

30/07/2013

**FULL CONDITION(S), REASON(S) FOR THEIR IMPOSITION AND INFORMATIVE(S)
ATTACHED OVERLEAF**

CONDITION(S) AND REASON(S) FOR THEIR IMPOSITION

1. The development hereby permitted shall be begun before the expiration of three years from the date of this permission. (C001)
Reason - As required by Section 91 of the Town and Country Planning Act 1990, to avoid the accumulation of unexercised Planning Permissions. (R001)

2. The development hereby permitted shall not be carried out except in complete accordance with the details shown on submitted plans, 1279_PL_001_00, 1279_PL_002_00, 1279_PL_003_01, 1279_PL_010_00, 1279_PL_020_00, 1279_PL_030_00, 1279_PL_110_01, 1279_PL_111_01, 1279_PL_112_01, 1279_PL_113_01, 1279_PL_114_01, 1279_PL_115_00, 1279_PL_116_00, 1279_PL_117_01, 1279_PL_118_01, 1279_PL_125_01, 1279_PL_200_01, 1279_PL_302_01, 1279_PL_303_01, 1279_PL_304_01, 1279_PL_305_01. (C068)
Reason - The details are considered to be material to the acceptability of the proposals, and for safeguarding the amenity of the area. (R068)

3. Detailed drawings or samples of materials as appropriate, in respect of the following, shall be submitted to and approved in writing by the Local Planning Authority before the relevant part of the work is begun and the works shall not be carried out other than in accordance with the details so approved and shall thereafter be so maintained:

Materials to be used on the external faces of the building(s);

Reason – To accord with the development plan by ensuring that the character and appearance of the area are preserved and living conditions of those living near the development suitably protected.

4. Detailed drawings or samples of materials as appropriate, in respect of the following, shall be submitted to and approved in writing by the Local Planning Authority before the relevant part of the work is begun and the works shall not be carried out other than in accordance with the details so approved and shall thereafter be so maintained:

the windows and doors

Reason - To ensure the appearance of the development is satisfactory, and to safeguard the amenity of the area. (R016)

5. Detailed drawings or samples of materials as appropriate, in respect of the following, shall be submitted to and approved in writing by the Local Planning Authority before the relevant part of the work is begun and the works shall not be carried out other than in accordance with the details so approved and shall thereafter be so maintained:

Cycle parking and storage;

Reason – To accord with the development plan by ensuring that the character and appearance of the area are preserved and living conditions of those living near the development suitably protected.

6. Detailed drawings or samples of materials as appropriate, in respect of the following, shall be submitted to and approved in writing by the Local Planning Authority before the relevant part of the work is begun and the works shall not be carried out other than in accordance with the details so approved and shall thereafter be so maintained:

Hard and soft landscaping and external lighting;

Reason – To accord with the development plan by ensuring that the character and appearance of the area are preserved and living conditions of those living near the development suitably protected.

7. Detailed drawings or samples of materials as appropriate, in respect of the following, shall be submitted to and approved in writing by the Local Planning Authority before the relevant part of the work is begun and the works shall not be carried out other than in accordance with the details so approved and shall thereafter be so maintained:

(a) a landscaping and tree/shrub planting scheme;

Reason - To ensure the appearance of the development is satisfactory, and to safeguard the amenity of the area. (R016)

8. The tree(s) existing on the site at the date of this permission shall be protected against damage as per Arboricultural Report of B.J Unwin (02/05/12) throughout the period of building and other operations pursuant to this permission, including site preparation. (C020)

Reason - To ensure that the trees are adequately protected and to safeguard the amenities of the area. (R020)

9. Noise emitted by the condensing boiler and gas absorption heat pump hereby permitted, located on the roof of the building, when operating concurrently or in isolation, shall not increase the lowest existing measured background LA90(15min) level measured or predicted at 1.0m from the nearest residential window or at a height of 1.2m above any adjacent residential garden, terrace, balcony or patio at any time when the plant is operating. The plant shall be serviced regularly in accordance with manufacturer's instructions and as necessary to ensure that the requirements of the condition are maintained. If at any time the plant is unable to comply with this Condition, it shall be switched off and not used again until it is able to comply.

Reason - To prevent any significant disturbance to residents of nearby properties and comply with development plan policies, in particular policy CL5 of the Core Strategy.

10. All plant and equipment associated with the condensing boiler and gas absorption heat pump shall be supported on adequate proprietary anti-vibration mounts, as necessary, to prevent the structural transmission of vibration and regenerated noise within adjacent or adjoining premises, and these shall be so maintained thereafter.

Reason - To prevent any significant disturbance to residents of nearby properties and comply with development plan policies, in particular policy CL5 of the Core Strategy.

11. The development hereby permitted shall not be implemented until a Construction Traffic Management Plan has been submitted to and approved in writing by the Local Planning Authority. The statement should include:

- routing of demolition, excavation and construction vehicles;
- access arrangements to the site;
- the estimated number of vehicles per day/week;
- details of any vehicle holding area;
- details of the vehicle call up procedure;
- estimates for the number and type of parking suspensions that will be required;
- details of any diversion, disruption or other abnormal use of the

public highway during demolition, excavation and construction works;

- a strategy for coordinating the connection of services on site with any programmed work to utilities upon adjacent land;
- work programme and/or timescale for each phase of the demolition, excavation and construction works; and
- where works cannot be contained wholly within the site a plan should be submitted showing the site layout on the highway including extent of hoarding, pedestrian routes, parking bay suspensions and remaining road width for vehicle movements.

The development shall not be carried out except in accordance with the approved Construction Traffic Management Plan.

Reason - In the interest of highway safety and to safeguard the amenity of the area and to comply with the Subterranean Development SPD and policy CT1 and CL5.

INFORMATIVE(S)

1. Conditional Planning Permission is hereby granted for the development as shown on the approved drawings. Any alteration to the approved scheme, resulting from the requirements of the Building Regulations or for any other reason, may require further permission. You are advised to consult the Directorate of Planning Services before work commences if this is the case. (I09)
2. Separate approval for the works hereby granted planning permission may be required by the Building Act 1984 and the Building Regulations 2000 (as amended), and the grant of planning permission does not imply that such approval will be given. The Director of Building Control, Town Hall, Hornton Street, W8 7NX should be consulted before works commence. (I21)
3. You are advised that it is the duty of the occupier of any domestic property to take all such measures available to him/her as are reasonable in the circumstances to secure that any transfer of household waste produced on the property is only to an authorised person or to a person for authorised transport purposes. This includes waste materials produced as a result of building works. You may check whether your waste carrier is licensed on the DEFRA website. (I61)
4. To assist applicants in finding solutions to problems arising in relation to their development proposals the Local Planning Authority has produced planning policies, and provided written guidance, all of which are available on the Council's website. A pre-application advice service is also offered.

The scheme was submitted in accordance with advice provided through pre-application discussions.

5. You are reminded that, if not properly managed, construction works can lead to negative impacts on the local environment, reducing residential amenity and the safe function of the highway. The Council can prosecute developers and their contractors if work is not managed properly. For advice on how to manage construction works in the Royal Borough please see the Council's website: www.rbkc.gov.uk/environmentandtransport/adviceforbuilders.aspx. From this page you will also find guidance on what to include in Construction Traffic Management Plans (where these are required). (I67A)

Refurbishment of existing Grenfell Tower including new external cladding and fenestration, alterations to plant room, reconfiguration of lower 4 levels to provide 7 new residential units (use class C3), replacement nursery (use class D1) and boxing club (use class D2) facilities, external public realm works, redevelopment and change of use of existing garages to refuse collection area.

SUMMARY OF REASONS FOR DECISION

You are advised that this application was determined by the Local Planning Authority with regard to the National Planning Policy Framework (NPPF), Development Plan policies, including relevant policies contained within the Core Strategy of the Local Development Framework, the London Plan, as well as policies 'saved' from the Unitary Development Plan, and was considered to be in compliance with the relevant policies. In particular, the following policies were considered:

Core Strategy adopted 8 December 2010

CL1	Context and Character
CL2	New Buildings, Extensions and Modifications
CL5	Amenity
C1	Infrastructure Delivery and Planning Obligations
CK1	Social and Community Uses
CT1	Improving alternatives to car use
CH1	Housing Targets
CH2	Housing Diversity
CE1	Climate Change
CE6	Noise and Vibration
CR4	Streetscape
CR6	Trees and landscape
CF5	Location of Business Uses

'Saved' policies of the Unitary Development Plan adopted 25 May 2002

CD63	Conservation Area Views
------	-------------------------

London Plan Spatial Development Strategy for Greater London adopted July 2011

3.1	Ensuring equal life chances for all
3.2	Improving health and addressing health inequalities
3.5	Quality and design of housing developments
3.8	Housing choice
3.16	Protection and enhancement of social infrastructure
3.17	Health and social care facilities
3.19	Sports facilities
7.2	Geological conservation
7.3	London's canals and other rivers and waterspaces
7.4	Local character
7.5	Public realm
8.2	Planning obligations

The material circumstances of the case, including site history, location, and impact on amenities were considered.

In addition, consideration was given to the results of public consultation.

It was concluded that there was no impact upon the amenities of adjoining occupiers, or upon the character or appearance of the area, that would justify a refusal in this case.

In conclusion the proposed scheme provides significant improvements to the site and is acceptable. The provision of seven new affordable housing units which have a satisfactory quality of accommodation is supported. The reorganization of the existing uses in the lower floors provides greater facilities and more suitable access arrangements that will

benefit the local community. The changes to the external appearance of the building will also provide positive enhancements to the appearance of the area, and the removal of the walkway and the canopy are welcome improvements. The residents will also benefit from increased security and new windows and heating systems to allow each unit to have independent climate control.

The proposed residential units are permit free and adequate cycle parking has been provided for the new residents and visitors to the other uses and therefore no objection is raised in relation to transportation. There would be no loss of amenity to the surrounding residents and overall the application is acceptable and is in accordance with policies CL1, CL2, CL5, C1, CK1, CT1, CH1, CH2, CE1, CE6, CR4, CR6 and CF5 of the Core Strategy, 'saved' policy CD63 of the UDP and policies 3.5, 3.8, 3.16, 3.17, 6.10, 7.2, 7.3, 7.4 and 7.5 of the London Plan, the Transportation SPD, the Access SPD, the Kensington Academy and Leisure Centre Planning Brief and the London Housing SPG.

The full report is available for public inspection on the Council's website at <http://www.rbkc.gov.uk/PP/12/04097>. If you do not have access to the internet you can view the application electronically on the ground floor of the Town Hall, Hornton Street, London, W8 7NX.

Yours sincerely,



Jonathan Bore
Executive Director, Planning and Borough Development

INFORMATION SHEET

When a permission or consent is given it does not convey any approval, consent, permission or licence under any Acts, Byelaws, Orders or Regulations other than those referred to in the permission or consent. Nothing in the permission or consent shall be regarded as dispensing with compliance with such other Acts or Byelaws etc.

In respect of planning permission, your particular attention is drawn to the provisions of the Building Act 1984, and the Building Regulations 2010 (as amended).

Also, the Council's permission does not modify or affect any personal or restrictive covenants, easements, etc., applying to or affecting the land or the rights of any persons entitled to the benefits thereof.

Your attention is drawn to applicant's rights arising from the refusal of planning permission or Listed Building Consent, and from the grant of permission/consent subject to Conditions, as follows:

- 1) If the applicant is aggrieved by the decision of the local planning authority to refuse planning permission, Listed Building Consent, or approval for the proposed development; or to grant permission or approval/consent subject to conditions, he may appeal to the Secretary of State, under the Town and Country Planning Act 1990, within **six months** of the date of this notice. Appeals must be made using a form available from the Planning Inspectorate at Temple Quay House, 2 The Square, Temple Quay, Bristol BS1 6PN or online at www.planningportal.gov.uk/pcs.
- 2) If permission to develop land or Listed Building Consent is refused or granted subject to Conditions whether by the local planning authority or by the Secretary of State, and the owner of the land claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted, he may serve on the relevant authority where the land is situated, a purchase notice requiring that council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990, or Part 1 Chapter III of the Planning (Listed Buildings and Conservation Areas) Act 1990.
- 3) In certain circumstances, a claim may be made against the local planning authority for compensation. The circumstances in which such compensation is payable are set out in Sections 114 of the Town and Country Planning Act 1990, or Section 27 of the Planning (Listed Buildings and Conservation Areas) Act 1990.



IBI TaylorYoung
Chadsworth House Wilmslow Road
Handforth Cheshire SK9 3HP UK

tel [REDACTED]
fax [REDACTED]

13th January 2014
MW/KK/6075

Ms Claire Williams
The Royal Borough of Kensington and Chelsea
Tenant Management Organisation Ltd
292a Kensal Road
London
W10 5BE

GRENFELL TOWER PLANNING PERMISSION – DECISION NOTICE

Dear Claire,

Following my recent emails, I am pleased to enclose the Decision Notice that confirms the grant of planning permission for the Grenfell Tower project. This document should be kept for your records as applicant and shared with the ultimate landowner of the site for legal reasons.

The decision is subject to a number of conditions and these are summarised below:

- 1 Standard time restriction
- 2 List of approved plans – if changes are sought for the development, we can apply to amend the list of plans which in effect grants permission for the change – this is a 'Minor Material Amendment' Application, also known as a S73 application.
- 3 Samples of external facing materials to be submitted and approved prior to bringing that material into use.
- 4 Samples of windows to be submitted and approved prior to the beginning of the windows works
- 5 Samples of cycle parking and storage to be submitted and approved prior to the beginning of such works
- 6 Samples of external landscaping and lighting to be submitted and approved prior to the beginning of the landscaping works
- 7 Planting plan to be submitted and approved prior to the beginning of the planting works
- 8 Tree protection to be carried out in accordance with approved details
- 9 Noise control on roof top plant
- 10 Anti vibration fixings for plant
- 11 Submission of a Construction Traffic Management Plan prior to the commencement of development

Condition 11 needs progressing ASAP, followed by 3 and 4, then 5, 6, and 7.

Conditions take up to 8 weeks to determine and each application for their discharge costs £97. I will continue to work with the team to progress these conditions.

Please contact me if you have any queries on this or any other town planning matter. I look forward to continuing to work with you on this project.

Yours sincerely

Marc Watterson
Town Planner
IBI Taylor Young Senior Studio Associate

Enc.
cc Bruce Sounes, Studio E

To: Kai Fabiunke[kai@studioe.co.uk]
From: Bruce Sounes
Sent: Wed 23/04/2014 9:01:16 PM
Subject: FW: FW: Planning - Rainscreen cladding samples/material

From: Simon Lawrence [mailto:slawrence@rydon.co.uk]
Sent: 23 April 2014 17:16
To: Bruce Sounes
Subject: FW: FW: Planning - Rainscreen cladding samples/material

[K:\SEA Projects\1279 Grenfell Tower\Admin\A Admin\A 6 Design File\A6 3 Technical File Notes Product Investigation\H92 Rainscreen Cladding\Reynobond\140423](#)

Bruce,

Please see attached from Reynobond (via Harley). I'll catch up with you tomorrow.

Regards

Simon Lawrence, ACIOB, MInstLM
Project Manager

T [REDACTED]
M [REDACTED]

From: Mark Harris [mailto:Markharris@harleycw.co.uk]
Sent: 23 April 2014 14:43
To: Simon Lawrence
Cc: Mike Albiston
Subject: FW: FW: Planning - Rainscreen cladding samples/material

Simon

Thought it would be easier to forward you the email and all attachments as received from Debbie French at Aloca. I can't see a reason for this not to be sent as it is, to Bruce, but will leave that decision to your good self!

Regards

Mark Harris
HARLEY.

From: French, Deborah [Deborah.French@alcoa.com]
Sent: 23 April 2014 13:37
To: Mark Harris
Cc: Mike Albiston; Geof Blades
Subject: RE: FW: Planning - Rainscreen cladding samples/material

Hi Mark

As per your couple of emails I have attached copies of our Reynobond BBA – Specimen Warranty, we will supply the original

warranty once we have produced and shipped material, it will be drawn up Project and Site specific, FYI I have also attached copy of our COSHH and Cleaning documents.

In terms of the colour categories and pricing – I can confirm that the following colours are not going to carry any up-charge on prices already discussed and quoted

Anodized Look beginning with L ref – in the Effects Brochure

Chameleon Colours - in the effects brochure

STD Metallic and Solid colours as per our STD colour chart (attached)

We will also include the Stainless Steel B 4537S and Aluminium Brushed Look B 4536S in the attached colour chart.

There would be an up-charge for other colours in the design range for example.

Hope this information is OK but any other questions just let me know or ring me.

WR

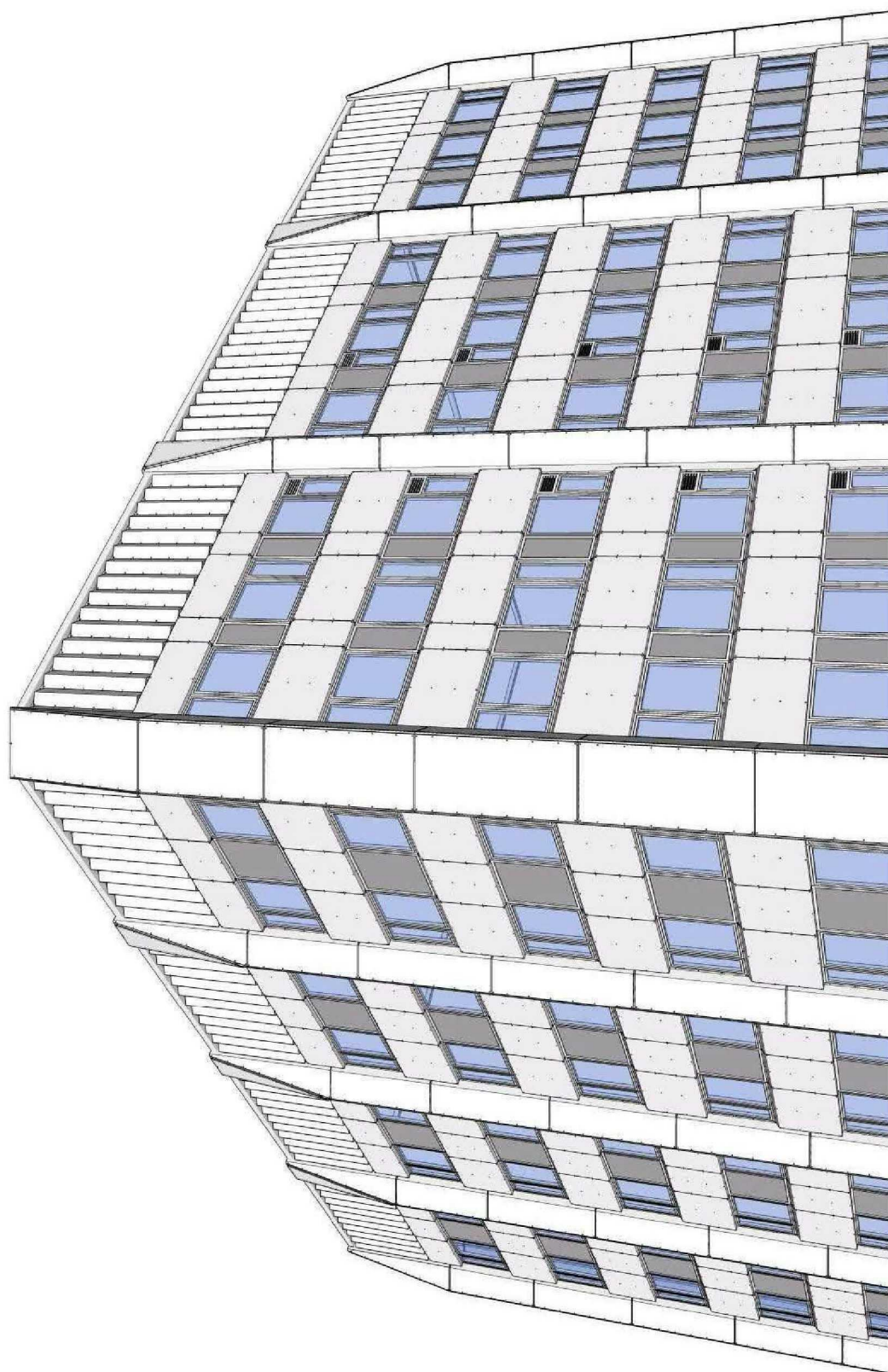
Thanks

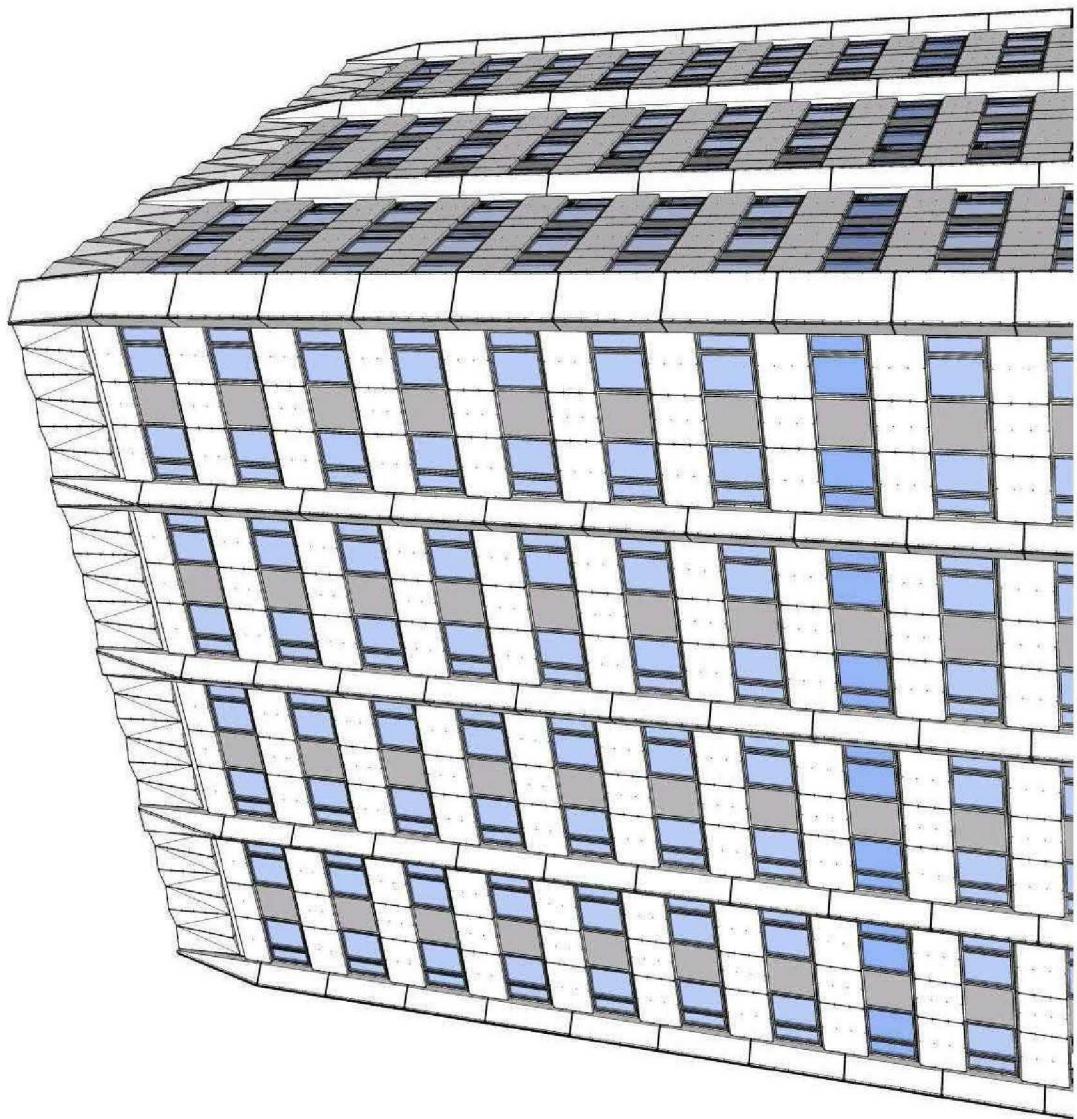
Debbs

**** Please note I will be away on Holiday from Wed 30th April returning to work on Tuesday 6th May ****

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>





Test methods and certifications

Test EN 13501-1 (Europe)

The European fire certification EN 13501-1 is the most complete test when it comes to fire. When sheet tests do not take into account major factors, the European fire certification EN 13501-1 does.

This test serves as the standard of evaluation for the reaction to fire of construction and building materials. It measures five main characteristics: inflammability, combustibility, fire spread, smoke development and droplets. Please note that Reynobond®, Reynolux® and Reynolux® aluminum composite panels and sheets are used for cladding and finishing elements and are not structural products, therefore they are not submitted to fire reaction performance, which gives a duration.

On the left, the test is conducted in a corner panel test, as the test is performed in a corner panel. On the right, the test is conducted in a panel test, as the test is performed in a panel.

Test method	Fire spread	Smoke emission	Flaming droplets
EN 13501-1 (EU)	✓	✓	✓
ASTM E84 (USA)	✓	✓	✓
BS 476 part 6.7 (UK)	✓	✓	✓

Classification standards

Reaction to fire according to the European fire certification EN 13501-1 is based on 3 criteria: contribution to fire with results going from A to F, smoke density from 0 to 3, and flaming droplets from 0 to 2.

Certifications
Reynobond® Architecture
aluminum composite panels
with FR or A2 core, Reynolux®
aluminum sheets and
Reynolux® double-skin
aluminum panels are true fire
retardant solutions.



Fire risk	Smoke density	Flaming droplets
A1	0	0
A2	0	1
B	1	1
C	1	2
D	2	2

- 0: Very weak smoke production
1: Limited smoke production
2: Heavy smoke production
- 0: Non-existent flaming droplets
1: Limited flaming droplets
2: Flaming droplets



A wide range of
designs
and colours
according to the
availability

- Colour chart
- Standard
 - Wood Design
 - Natural Design
 - Effects
 - Brushed Look
 - Minerals Design
 - Metals
 - Chrome
 - Anodized

Paint quality

- Polyester
- Duragloss
- Fluoropolymer

Technical coating

- GreenShield
- EcoClean™
- Anti-bacterial
- StrongShield

Gloss

- High gloss
- Satin
- Matt
- Matte

Arconic Architectural Products
and the environment

Environmentally friendly material

Reynobond® Architecture, Reynolux® and Reynolux® aluminum panels and sheets are the ultimate solution to provide your building with sustainable products meeting the latest technical requirements with a wide range of design and colours. Coming from the same manufacturing plant, the three products can be obtained in identical colours and combined in the same project, from the single-family house to large prestige projects. Thanks to their exceptional fireproof and corrosion resistance, Reynobond® Architecture, Reynolux® and Reynolux® pre-painted aluminum panels and sheets are easy to use and fabricate.



Controlled French manufacturing

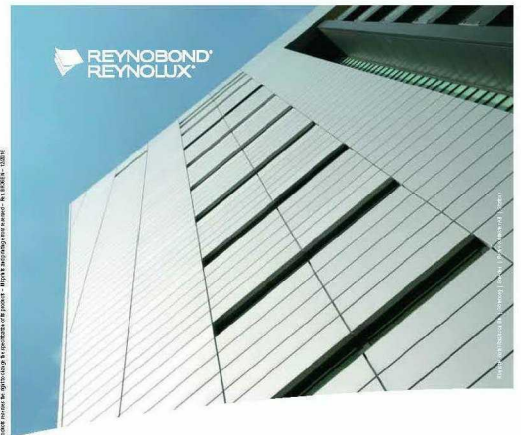
Reynobond® Architecture, Reynolux® and Reynolux® aluminum panels and sheets are fabricated and coated in France based on 50 years of experience. Col coating is the most economical, efficient, high-quality and environmentally-friendly method for applying coatings to aluminum panels and sheets.

Commitment to sustainability

Our company's certifications according to ISO 14001 and ISO 50001 illustrates our voluntary commitment to reduce the impact on the environment at all levels – water, energy, waste and use of resources. Moreover we develop continuously by improving the coatings in terms of their composition (solvents and pigments), durability, sustainability and cleaning requirements. For further information ask for the EPD, LEED points or our sustainability brochure.



Arconic Architectural Products
2, rue Marie Curie
68500 Mers-les-Bains, France
Tel: +33 (0) 3 89 74 46 00
Reynobond.Sales@arconic.com
Reynolux.Sales@arconic.com
www.arconicarchitecturalproducts.com



Aluminium solutions for facades and roofs cladding
Fire safety in high-rise buildings

Our fire solutions

SEA00014274_0252

SEA00014274/252

The fire solutions from Arconic Architectural Products

Fire is a key issue when it comes to buildings

When conceiving a building, it is crucial to choose the adapted products in order to avoid the fire to spread to the whole building. Especially when it comes to facades and roofs, the fire can spread extremely rapidly.

Important to take the "fire characteristics" into account when starting the construction or refurbishment of a building in order to protect the people and assets while limiting the propagation. It is especially crucial for public establishments such as hospitals, schools, offices, etc.

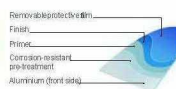
Buildings are also classified according to their height and destination (public buildings, industrial buildings, housing...). It will also define which materials are safer to use. Another important rule when it comes to the height of buildings concerns the accessibility of the fire brigade to the fire in the building: as soon as the building is higher than the firefighters' ladders, it has to be conceived with an incombustible material.



Advantages of our products

Reynobond® Architecture with FR or A2 cores, Reynodual® and Reynolux® aluminum composite panels and sheets represent the ideal material because of several advantages:

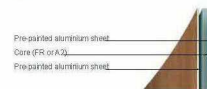
- **Limit fire propagation**
Thanks to the FR or A2 fire-retardant cores of Reynobond® Architecture aluminum composite panels and their respective fire-resistant and incombustible properties, the fire propagation is limited. The cores of our product are the main keys: the cores are mainly mineral (FR: approx. 70% mineral; A2: approx. 90% mineral).
- **Limit fire spreading**
Reynolux® pre-painted aluminum sheets and Reynodual® fine-painted double sheet aluminum panels represent a perfect solution to fire spreading. Thanks to its excellent mechanical and physical properties, aluminum does not burn and hence prevents the fire from spreading by its nature itself.
- **Prevent propagation of fumes**
Reynobond® Architecture with FR or A2 cores, Reynodual® and Reynolux® aluminum composite panels and sheets prevent the propagation of toxic and lethal fumes with a S1 classification according to the European fire certification EN 13501-1.
- **Avoid droplets falling**
There are no droplets falling down, which avoids further spread and harm to people, with a D0 classification according to the European fire certification EN 13501-1.



Reynolux® is a pre-painted aluminum sheet manufactured through coil-coating. It can be painted with a unique color variety of coatings. The benefits of Reynolux® pre-painted aluminum are versatile. In addition to its incombustible properties, its UV and weather resistance, it is also easy to transform and shape.



Reynodual® is a calculated double sheet aluminum panel for facades with high technical, visual and environmentally-friendly requirements. It offers the possibility of creating complex shapes for an attractive and creative appearance, with the availability of XXL width – up to 2m. Reynodual® guarantees good wind resistance and meets the strongest fire reaction requirements of the European fire certification EN 13501-1, class A2.



Reynobond® Architecture with FR core is a composite panel consisting of two coated aluminum sheets that are laminated to both sides of a fire-retardant core. It offers numerous advantages: its low weight, small extension, high corrosion and weather resistance make it an outstanding product. Reynobond® Architecture composite panel with FR core is non-flammable, which prevents fire from spreading.

Reynobond® Architecture with A2 core is a composite panel consisting of two coated aluminum sheets that are laminated to both sides of a fire-retardant core. It meets the stringent fire reaction requirements of the European fire certification EN 13501-1, class A2 while offering an unlimited creative freedom in terms of transformations, applications, designs and colours.



Fire class	Fire class
A1	A2
EN 13501-1: A1	EN 13501-1: A2-s1, d0
Thickness composite panel	3 mm
Thickness aluminum sheet	1.0 mm
Adhesive / temper	Series 3000
Core	-
Width	1200 mm / 1250 mm (d) / 1200 mm Minimum 1500 mm requested, contact us.
Length	2000 mm up to 6.000 mm
Weight	7.8 kg/m²
Distance to requirement	< 3 mm
Clearance to fire	< 2 mm / 1500 mm over height and width
Flame release	437 kWh/m² (per 20 µl)
Tensile strength	165 – 240 MPa according to alloy & temper and width
Tel d strength	140 – 160 MPa according to alloy & temper and width
Stability	0.165 MPa/m²
Thermal expansion	2.4 mm/m for a temperature variation of 100 °C
Temperature resistance	-40 °C / + 80 °C
Max. allowable deflection	L/80

For more information, see the Reynolux® technical data sheet.

For more information, see the Reynodual® technical data sheet.

Fire class	Fire class
B	A2
EN 13501-1: B-s1, d0	EN 13501-1: A2-s1, d0
Thickness composite panel	3 mm
Thickness aluminum sheet	0.8 mm (d 0.1 mm)
Adhesive / temper	Series 3000
Core	FR – approx. 70 % mineral A2 – approx. 90 % mineral
Width	1200 mm / 1250 mm / 1500 mm / 1750 mm / 2000 mm (d 1 mm)
Length	2000 mm up to 6.000 mm
Weight	9.2 kg/m²
Distance to requirement	< 3 mm
Clearance to fire	< 2 mm / 1500 mm over the width and length
Flame release	6.99 kWh/m² (per 40 µl (max))
Tensile strength	165 – 240 MPa according to alloy & temper and width
Tel d strength	140 – 160 MPa according to alloy & temper and width
Stability	0.125 MPa/m²
Thermal expansion	2.4 mm/m for a temperature variation of 100 °C
Temperature resistance	-40 °C / + 80 °C
Max. allowable deflection	L/80 (allows higher wind pressure or bigger steel elements)

For more information, see the Reynobond® Architecture with FR core technical data sheet.

For more information, see the Reynobond® Architecture with A2 core technical data sheet.