Report
for
Clerkenwell Lifestyle UK

FIRE STRATEGY
FOR
NEW HOTEL AND APARTMENTS
AT
EYRE STREET HILL, CLERKENWELL, LONDON

C. S. TODD & ASSOCIATES LTD

Fire Safety Consultants

June 2021

DOCUMENT ISSUE STATUS

Revision	Date of issue	Description
First Issue	March 2019	Stage 3 RIBA Plan of Work (2013)
Revision 1	08 October 2019	Amendment to east elevation external fire spread analysis
Revision 2	January 2020	1. Amendment to south elevation relevant boundary. 2. Clarification of GF south and west windows requiring fire protection.
Revision 3	March 2020	Stage 4 version with amendments as provided by Simon Mather, LRW
Revision 4	April 2020	Stage 4 version with amendments to plans and corrections
Revision 5	July 2020	Stage 4 version with updated plans and minor amendments to text.
Revision 6	July 2020	Stage 4 version BRCS comments
Revision 7	November 2020	Stage 4 Revision Water Mist Addition
Revision 8	December 2020	Stage 4 Revision Residential sprinkler system, plans, way finding signage and clarification of fire brigade facility to raise an alarm in the apartments.
Revision 9	January 2021	Update to include Design Team comments on Revision 8.
Revision 10	May 2021	Revisions following review by Ensure Safety and Compliance
Revision 11	May 2021	Updated plan extracts in body text of the report
Revision 12	June 2021	Updated with additional text requested by DP9 in relation to a fire statement and London Plan guidance

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NEW HOTEL AND APARTMENTS
AT
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June 2021

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1. INTRODUCTION

1.1 This report has been prepared by C.S. Todd & Associates Ltd ("CSTA") for Clerkenwell Lifestyle UK (the Client). The report sets out the fire safety requirements for a new hotel and apartment building at Eyre Street Hill, Clerkenwell, London.

1.2 The fire safety provisions in this fire strategy will be based on the requirements relating to purpose groups Residential (dwellings) 1(a) and Residential (Other) Group 2(b), predominantly by reference to Volumes 1[1] and 2[2] of Approved Document B to the Building Regulations 2010 (as amended) (ADB). The Building Regulations are functional and there is no obligation to follow the recommendations in ADB. Consequently, this fire strategy includes certain measures where a fire engineering methodology has been applied. These aspects of the fire strategy are highlighted in Section 3.

1.3 It is anticipated that this fire strategy report will be used by the design team to support a Building Regulations' application under the Building Regulations. It aligns with Stage 4 of the RIBA Plan of Work (2013).

1.4 The plans contained within this report have been copied or extracted from those prepared by Leach Rhodes Walker ("LRW") ("the Architects"), unless otherwise stated. Where CSTA has added marking to plans, this is made clear in the relevant section of this report.

1.5 This fire strategy should be read in conjunction with the following fire strategy drawings prepared by the Architects (see below and in Annex A).

Fire Strategy Drawing Number:	**Floor**
LRW_8060_L(42)110 G	Ground floor
LRW_8060_L(42)111 F	First floor
LRW_8060_L(42)112 F	Second and third floors
LRW_8060_L(42)116 D	Fourth floor
LRW_8060_L(42)113 G	Fifth and sixth floors
LRW_8060_L(42)114 G	Seventh floor

1.6 The recommendations in this fire strategy are intended to satisfy life safety requirements only. They are not directed towards property protection. Consultation with the building insurers is recommended in case increased levels of property protection are considered necessary.

[1] Approved Document B (Fire Safety) - Volume 1 Dwellings: 2019 edition, incorporating 2020 amendments (for use in England).
[2] Approved Document B (Fire Safety) - Volume 2 Buildings Other than Dwellings: 2019 edition, incorporating 2020 amendments (for use in England).

1.7 The consultant who produced this fire strategy statement is Mr S. Robinson who has an Honours degree in Fire Engineering, a Master's degree in Fire Safety Engineering, and is a Chartered Engineer, registered under licence by The Institution of Fire Engineers (IFE).

1.8 The submission of this report constitutes neither a warranty of future results by C.S. Todd & Associates Ltd, nor an assurance against risk. The report represents only the best judgement of the consultant involved in its preparation, and is based, in part, on information provided by others. No liability whatsoever is accepted for the accuracy of such information.

2. STATUTORY REQUIREMENTS

The London Plan

2.1 Policy D12 of The London Plan requires that the fire safety of developments should be considered from the outset. For this purpose, for all major developments, a fire statement (fire strategy) must be prepared by a Chartered Fire Engineer or other suitably qualified person.

2.2 Policy D12 Fire safety requires the following:

A In the interests of fire safety and to ensure the safety of all building users, all development proposals must achieve the highest standards of fire safety and ensure that they:

1) identify suitably positioned unobstructed outside space:

a) for fire appliances to be positioned on

b) appropriate for use as an evacuation assembly point

2) are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems and passive and active fire safety measures

3) are constructed in an appropriate way to minimise the risk of fire spread

4) provide suitable and convenient means of escape, and associated evacuation strategy for all building users

5) develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in

6) provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.

B All major development proposals should be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party, suitably qualified assessor. The statement should detail how the development proposal will function in terms of:

1) the building's construction: methods, products and materials used, including manufacturers' details

2) the means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach

3) features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans

4) access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and

positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these

5) how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building The London Plan – Intend to Publish version December 2019 160

6) ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.

Building Regulations 2010

2.3 The development is subject to the statutory requirements of the Building Regulations 2010 (as amended), Part B of which relates to fire safety. Under ADB, the building will be categorised as Residential (dwellings) 1(a) and "Residential (Other)" Group 2(b).

2.4 The requirements of the 2019 edition of ADB, incorporating 2020 amendments, have been applied in this fire strategy; these require an automatic sprinkler installation in the apartment building, together with way finding signage for the fire and rescue service.

2.5 The Building Regulations 2010 (as amended) include the provision of fire safety issues within certain classes of buildings. Part B of Schedule 1 to the Building Regulations includes five functional requirements, namely:

a) Requirement B1: Means of escape.

b) Requirement B2: Internal fire spread (linings).

c) Requirement B3: Internal fire spread (structure).

d) Requirement B4: External fire spread.

e) Requirement B5: Access and facilities for the fire and rescue service.

Regulatory Reform (Fire Safety) Order 2005

2.6 The Regulatory Reform (Fire Safety) Order 2005 ("the FSO") applies to the development. In accordance with this legislation, the Responsible Person (employer) and/or any other person in control of the premises must carry out a fire risk assessment in order to determine the fire safety provisions necessary to comply with the Order. Once the development is completed, a fire risk assessment will need to be completed by, or on behalf of, the responsible person.

Licensing Act 2003

2.7 The Licensing Act 2003 requires any premises providing licensable activities to have a premises licence. Licensable activities covered by the Act are:

a) The sale by retail of alcohol.

b) The supply of alcohol by, or on behalf of, a club to, or the order of, a member of the club.

c) The provision of regulated entertainment.

d) The provision of late night refreshment.

2.8 In determining applications for a premises licence, the Licensing Authority must be satisfied that appropriate and satisfactory general and technical risk assessments, management procedures and certificates have been made available to the Licensing Authority. The Licensing Authority will need to be satisfied that measures to promote public safety, including risk assessments, setting safe capacities, and providing adequate means of escape, are put in place and maintained, if not adequately provided for by other regulatory regimes. Fire safety requirements for the premises should generally be satisfied through meeting the statutory requirements of the Building Regulations and the FSO.

Statutory consultation

2.9 During the Building Regulations' application process, the building control body is required to formally consult with the local fire authority. The purpose of this consultation is to give to the fire authority an opportunity to make observations with respect to the Building Regulations and to provide an opportunity to make the applicant aware of action that may have to be taken to meet the requirements of the FSO.

2.10 It is proposed that this draft fire strategy document should be used as a basis for discussion with the design team and appointed building control body. However, until such time as a Building Regulations' application is submitted and an approval, conditional or otherwise, is issued, the document cannot be considered as approved, irrespective of any discussions that have taken place.

Building Regulation 38

2.11 Where a building is erected or extended, or has undergone a material change of use, and the FSO applies to that building or extension, Regulation 38 of the Building Regulations requires that a package of fire safety information ("as built" information, which records the fire safety design of the building or extension) must be assembled and given to the person responsible for the premises.

2.12 The fire safety information provided should include all fire safety design measures in appropriate detail, and with sufficient accuracy to assist the

Responsible Person to operate and maintain the building in reasonable safety. Where a fire safety strategy, or a preliminary fire risk assessment, has been prepared, these should also be included.

2.13 The exact amount of information and level of detail necessary will vary depending on the nature and complexity of the building's design (further guidance on information to be provided is given in Appendix G of Approved Document B – Volume 2).

2.14 A practical way of meeting the requirement of Regulation 38 is to develop a building fire manual, based on the guidance contained in BS 9999[3].

[3] BS 9999: 2017. *Fire safety in the design, management and use of buildings. Code of practice.*

3. FIRE SAFETY PHILOSOPHY

3.1 Ensuring the safety of the public, staff, residents and others working in, or visiting, the premises is the principal fire safety objective that has been applied to the fire safety design of the building.

3.2 Accordingly, the fire safety design of the building incorporates the following components:

a) Suitable means of escape to enable occupants to reach a place of safety unaided:

1. In this case, the apartments are provided with a single fire-fighting stair, which also provides fire-fighting access to the upper floors of the hotel. The hotel is provided with an alternative, dedicated protected stair and a secondary emergency escape route via the fire-fighting stair in the apartment building. Stairs serve all upper floors of the building.
2. Hotel protected bedroom corridors generally provide escape in two directions, but where escape is initially in one direction, a restriction on travel distance is applied.
3. The apartments are accessed via a common protected lobby. Internally, apartments are provided with protected entrance halls.
4. The fire-fighting staircase is separated by ventilated lobbies from both the hotel and apartments. Smoke ventilation is provided by a single, mechanically assisted smoke shaft, designed to act on the appropriate protected lobby.

b) Supporting provisions for the means of escape, such as emergency escape lighting and fire safety signs.

c) Compartmentation to limit fire development and spread:

- In this case, elements of structure will provide 90 minutes' fire resistance and compartmentation will provide 90 minutes' fire resistance (reduced to 60 minutes for walls solely providing vertical compartmentation around flats).

d) A comprehensive, automatic fire detection and alarm system, appropriate to the purpose group, to provide an early warning of fire:

- In this case, this will satisfy the recommendations of BS 5839-1[4] for a Category L1 system for the hotel and shared fire-fighting lobby ("the Part 1 system").

[4] BS 5839-1: 2017. *Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises*

- Each apartment will be provided with a standalone BS 5839-6[5] fire detection system, Grade D Category LD2 standard ("the Part 6 system").
- A means for the fire and rescue service to raise an alarm within the apartments.

e) Means for the evacuation of disabled staff and guests:

- In the hotel, this is based predominantly on use of evacuation chairs from refuges associated with the two staircases (see Section 7).

f) Fire extinguishing appliances to allow first aid fire-fighting by staff.

g) An automatic sprinkler system to be installed in each apartment.

h) Suitable access and facilities for use by the fire and rescue service, to the extent necessary.

i) In this case, a shared fire-fighting shaft is provided, incorporating a fire-fighting staircase, mechanically ventilated fire-fighting lobbies, a dry rising fire main and a fire-fighting lift.

j) An appropriate secondary power supply for life safety systems.

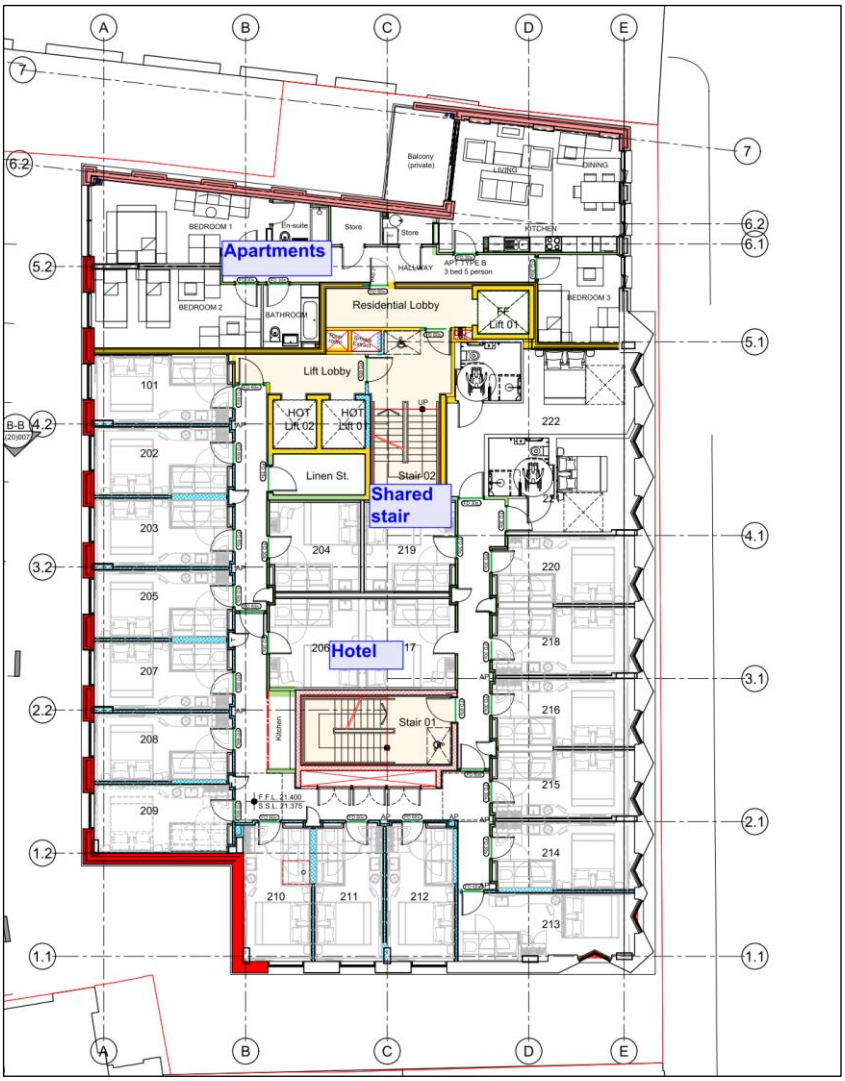
k) Design measures to prevent the spread of fire to adjacent buildings.

3.3 This fire strategy predominantly addresses the life safety requirements of the Building Regulations 2010. While it is likely that the measures specified will, to some extent, reduce property damage and business disruption arising from a fire, it is important to note that property damage and financial loss are not specific objectives of this fire strategy. Further guidance on these matters is contained in PD 7974-8[6]. Additional guidance can be provided on these matters, if required.

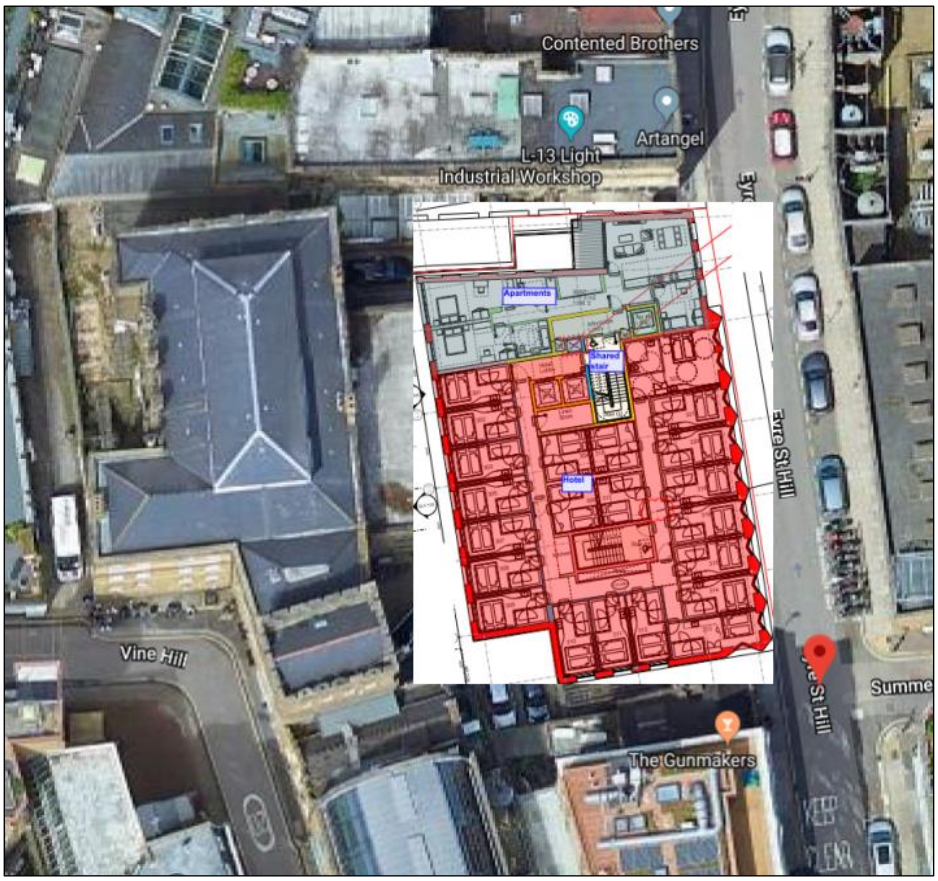
[5] BS 5839-6: 2019. *Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in domestic premises.*
[6] PD 7974-8: 2012. Application of fire safety engineering principles to the design of buildings. Property protection, business and mission continuity, and resilience

4. BUILDING DESCRIPTION

4.1 The development comprises a new hotel, together with residential apartments in a separated part of the building. The building will comprise ground floor and seven upper storeys. The arrangement of a typical upper floor is shown below.



4.2 The site is located at Eyre Street Hill, Clerkenwell, London. The site location is illustrated below on the Google maps satellite image.



Site location – Google maps

4.3 The current proposal is that the hotel will provide a total of 153 guest bedrooms, distributed uniformly over the upper floors, hence a notional sleeping capacity for 306 guests. For the food and beverage area and bar, a notional capacity of 200 persons has been applied, although the actual capacity aligning with the interior design proposals is anticipated to be far less than this figure.

4.4 There are 15 guest rooms proposed, to be designed as universally accessible, namely three rooms at first floor and two rooms on each of the second to seventh floors.

4.5 The building will provide nine affordable apartments, one 3 bed on each of the first to fourth floors, two 1 bed on each of the fifth & sixth floors, and one 1 bed on the seventh floor. The first floor 3 bed apartment is designed as universally accessible.

4.6 An electrical sub-station, accessed externally, is located at ground floor level.

4.7 The height to the surface of the top floor of the building is 23m.

4.8 The building will be provided with two protected staircases. In this document, the stairs serving the upper floor are designated as the “Fire-fighting stair” and

the “Alternative stair”. The fire-fighting stair is the only stair serving the affordable accommodation and has shared access with the hotel.

4.9 The building has a floor 18m above fire and rescue service access level and will be provided with a fire-fighting shaft. Access to the staircase for fire-fighters will be via the affordable accommodation main entrance lobby.

4.10 The following is a description provided by the Architects in relation to the construction methods and materials used in the development:

“The proposed building is formed of a concrete frame, with concrete cores, blades columns & flat concrete slabs all designed to provide 90 minutes fire resistance.

There are two façade treatments, with the hotel being clad in an A1 rated GRC rainscreen panel and the residential block featuring a masonry external leaf.

Both façades are supported from the concrete frame and tied back to an SFS internal leaf with mineral wool insulation in the SFS stud zone and the cavities, with cavity barriers closing the cavity at each compartment line, window / door openings and parapet.

Please see summary below of the proposed build-ups:

12mm A1 GRC Panels on secondary steel / cladding system (to sub-contractors details), with minimum open joint width.
Fixed to: SFS with external grade mineral wool insulation in the stud zone & cavity (Frame sections in line with wind loadings and specialist recommendations),
12mm cement particle board & Class B-S1, d0(2) *rated breather membrane to outer face and 2no layers of 12.5mm Soundbloc on VCL to internal face. Overall U value to achieve 0.2 W/M2 K*

Facing brickwork external leaf in flemish bond with 10mm bucket profile lime mortar joints.
Wall ties / support angles to suit British standards, fixed to: SFS with mineral wool insulation in the stud zone & cavity (frame sections in line with wind loadings and specialist recommendations), 12mm cement particle board & Class B-S1, d0(2) *rated breather membrane to external face, and 2no 12.5mm Soundbloc on VCL to internal face. Overall U-value to achieve 0.2 W/M2 K*

The proposals also include EW60 fire curtains to the ground floor courtyard elevations as highlighted in the fire strategy report.

All roofs & terraces are designed to achieve Broof(t4), with an inverted roof system, and tile or concrete paving on pedestals.”

5. MEANS OF FIRE WARNING

5.1 The hotel will be provided with a comprehensive fire detection and alarm system, which will meet the recommendations for a Category L1 system, as defined in BS 5839-1.

5.2 The Part 1 system will extend to the common fire-fighting lobbies of the affordable housing. A signal arising from a detector in an affordable lobby will be treated as a detector elsewhere in the hotel.

5.3 Combined smoke/heat detectors, with integral sounder units, will be provided throughout the public areas, including guest bedrooms, with suitable detectors located in areas such as plant rooms. The fire detection and alarm system will be an analogue, addressable type.

5.4 UA guest rooms will be fitted with visual alarm devices (flashing beacons). A proportion of standard rooms should also be provided with visual warning devices. In addition, hotel management will, where necessary, issue portable vibrating pillow devices to guests who are deaf or hard of hearing. Visual alarm devices will also be provided in publicly accessible toilets.

5.5 Any smoke dampers, installed into the ventilation systems to comply with the requirements of Part B of the Building Regulations, will be linked into the fire detection and alarm system so as to close on fire alarm activation. Similarly, any gas plant and HVAC plant should be shut down and lifts grounded on fire alarm activation. (See also below for further details of the operational sequence.)

5.6 The affordable apartments will each be provided with Grade D Category LD2 systems in accordance with BS 5839-6.

5.7 The affordable housing will operate a “stay put” strategy, so there is no requirement for the Part 1 system to cause a general alarm throughout the affordable accommodation units. However, given that the fire-fighting shaft is common to the hotel and affordable accommodation, the fire and rescue service may decide to initiate an evacuation of the affordable accommodation units as part of a dynamic risk assessment. For this purpose, it is recommended that an evacuation alert system is provided in accordance with BS 8629[7], such system to include evacuation alert control and indicating equipment (EACIE), incorporating manual controls by which evacuation alert sounders within each affordable accommodation unit can be operated by the fire and rescue service. The EACIE controls for the fire and rescue service should be positioned in a prominent position in the ground floor entrance lobby of the affordable accommodation.

[7] BS 8629: 2019. Code of practice for the design, installation, commissioning and maintenance of evacuation alert systems for use by fire and rescue services in buildings containing flats.

5.8 As a minimum, a fire alarm control and indicating panel will be required at the main entry point to the hotel, with a repeater panel in the entrance lobby of the affordable accommodation. Additional repeater panels may be necessary, depending on the final layout of the building and location of hotel management rooms. The requirement for additional repeater panels should be subject to discussion with the hotel operator.

5.9 The Part 1 fire detection and alarm system in the hotel will be capable of being programmed with a three minute delay, to allow investigation of smoke detector activations by staff (i.e. a staff alarm). (See also below for further details of the operational sequence.) An immediate alarm will, however, be given in the bedroom from where a signal arises.

5.10 If a staff alarm is operated, the fire alarm system will go into full alarm throughout the building if:

a) during the investigation delay period, a second device is activated (being either another detector or 'break glass' call point);

b) any 'break glass' call point is operated;

c) any heat detector is activated;

or

d) the three minute delay period expires.

5.11 The three minute delay for staff investigation will need to be assessed for practicality, given the layout of the building.

5.12 Facilities will be provided (programming of the panel and/or a manual override key switch) to prevent the shutting down of plant and allow the override of lifts during testing periods.

5.13 Electrically-operated, hold-open devices provided on fire-resisting doors, e.g. within the bedroom corridor areas, will be interfaced to the fire detection and alarm system. (See also below for further details of the operational sequence.)

5.14 Doors on escape routes that are fitted with electronic locks will be interfaced with the fire detection and alarm system to deactivate the door locking system on fire alarm activation, or in the event of a power failure.

5.15 Any sliding doors on a hotel escape route will similarly be interfaced with the fire detection and alarm system to open the doors on fire alarm activation, or in the event of a power failure. (Additional recommendations relating to powered sliding doors are provided in Section 7 of this report.) Any such doors on escape routes will be provided with a manual door release unit (green 'break glass' call point), positioned by the door on the approach side and wired directly in series with the power supply to the locks.

5.16 More generally, electronic door locks on escape routes will comply with the recommendations of BS 7273-4[8].

5.17 Any active fire barriers (fire/smoke curtains) included in the design will be interfaced to the fire detection and alarm system. Fire/smoke curtains will be operated by a local detector. (See also below for further details of the operational sequence.)

5.18 The mechanically-assisted smoke shaft serving the hotel and affordable accommodation fire-fighting lobbies will be interfaced with the hotel Part 1 fire detection and alarm system and operate automatically and without delay if smoke is detected in a fire-fighting lobby.

5.19 Where the fire detection and alarm system interfaces with other building services and fire safety systems, e.g. lifts, fire curtains, and smoke control systems, the interfacing should be in conformity with the recommendations of BS 7273-6[9].

5.20 The fire detection and alarm system will be programmed to reflect the principles set out on the pages that follow. This assumes that a staff search system has been implemented at the hotel.

[8] BS 7273-4: 2015. *Code of practice for the operation of fire protection measures. Actuation of release mechanisms for doors*.
[9] BS 7273-6: 2019. Code of practice for the operation of fire protection measures. Fire detection and fire alarm systems. Interface with ancillary systems and equipment.

FIGURE 1

‘UNCONFIRMED’ FIRE ALARM CONDITION
(Part 1 System)

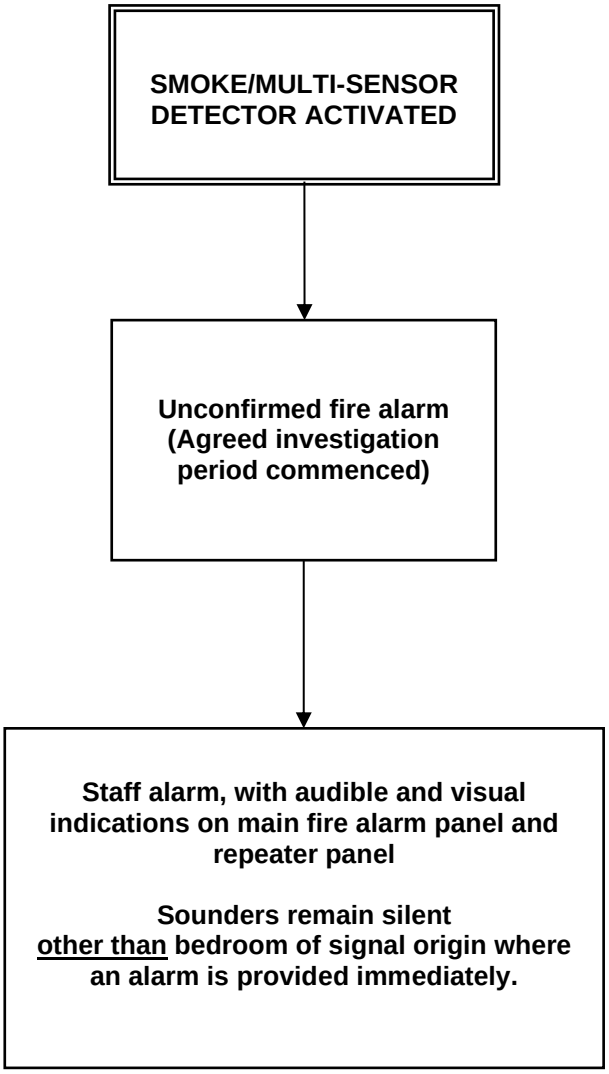


FIGURE 2

‘CONFIRMED’ FIRE ALARM CONDITION

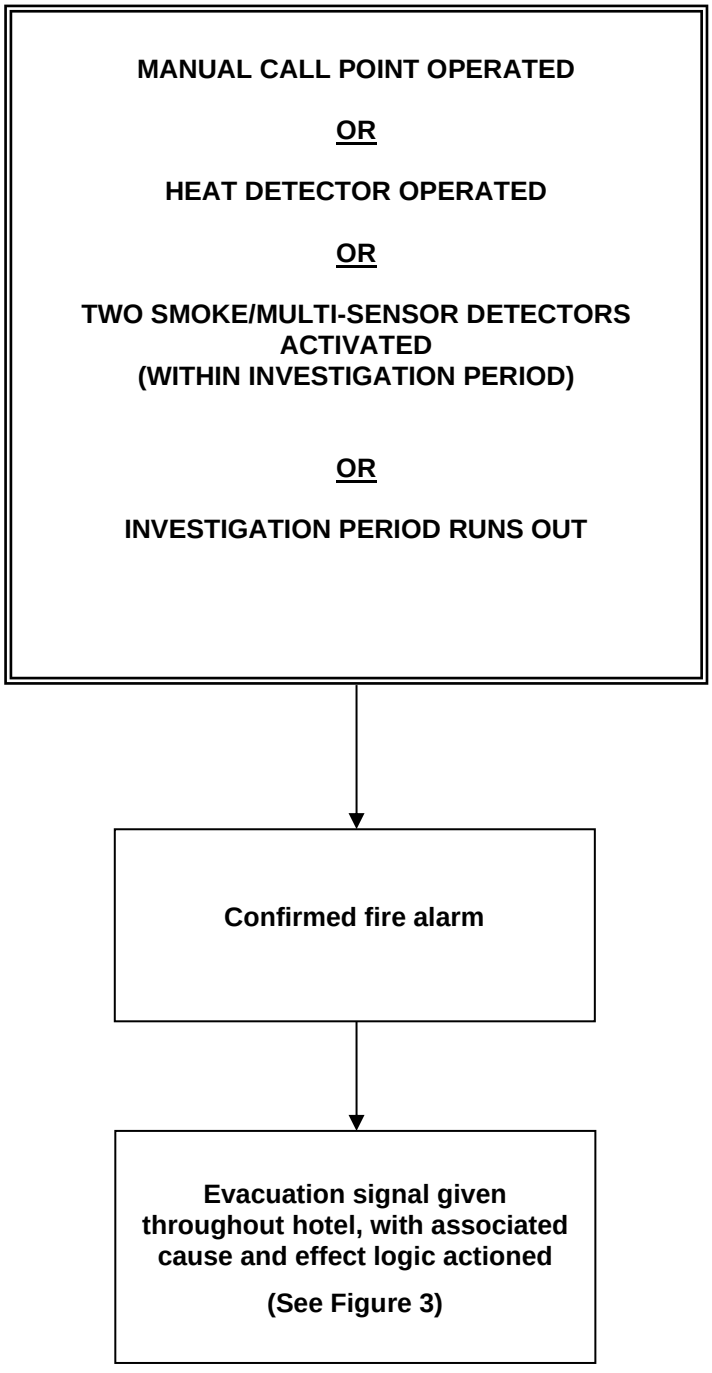
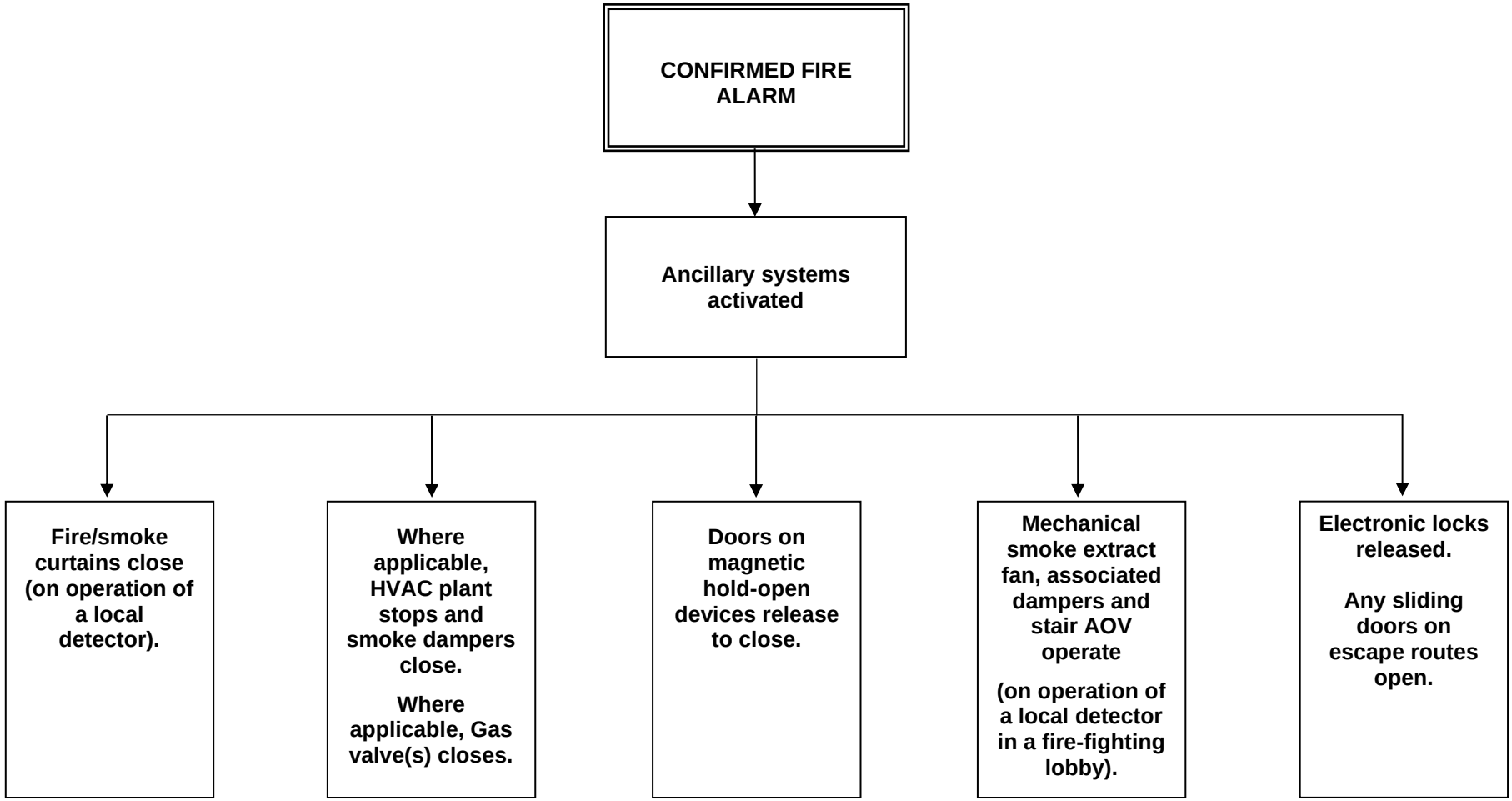


FIGURE 3

CAUSE AND EFFECT LOGIC OVERVIEW



6. GENERAL FIRE EVACUATION STRATEGY

6.1 In the hotel, a staged alarm, incorporating a three minute (typical) delay, for staff verification of an unconfirmed fire alarm is proposed. Implementation of this evacuation strategy is dependent on there being sufficient staff available to manage and complete the staff search procedure and manage the evacuation. A confirmed fire alarm will result in a simultaneous evacuation of the hotel.

6.2 Staff alarms will only be generated in response to signals from automatic smoke detectors, but not in response to signals from manual call points or heat detectors. If a second smoke detector signal is received, the system will commence the simultaneous evacuation of the hotel.

6.3 In premises with a staff alarm system, there should always be provision, throughout all areas of the building, for staff to manually sound an audible fire warning. In practice, this comprises manual call points, which, as indicated above, result in an immediate evacuation signal. However, in addition, radios will be carried and used to facilitate the initiation of the evacuation signal by staff at reception.

6.4 A staff alarm signal will automatically change to an audible fire warning after the agreed investigation period, unless manual intervention to stop the associated timer occurs at the control equipment.

6.5 The evacuation procedure will be supported by a written fire evacuation plan; it will form part of staff fire safety training and be practised routinely during fire drills. The following summarises the procedure that is to be followed:

1. The Duty Manager/s will attend the fire alarm control panel in reception.
2. The Duty Manager/s will instruct a Team Member to proceed to the location of the device in alarm, to establish whether or not the alarm is false or genuine.

   Note: Hotel staff must have means to gain access to the affordable accommodation to investigate a fire alarm signal arising from a smoke detector in a fire-fighting lobby in the affordable accommodation.
3. If confirmed as a fire, the Duty Manager/s will summon the fire and rescue service by a 999 telephone call.
4. Team Members will be assigned to carry out various tasks. If evacuation is necessary, Team Members will direct guests to leave the building via the fire exits and, where trained and designated to do so, assist with the evacuation of disabled guests.
5. The Duty Manager/s will remain at the fire alarm panel and will take reports from the Team Members, and liaise with the fire and rescue service.
6. In the case of an unwanted signal, the Duty Manager/s will inform the staff, stop the timer on the fire alarm panel and investigate fully the cause of the

signal, and take the appropriate measures if a preventable action operated the detector.

7. In the case of a confirmed fire signal, the alarm will be raised, either by operation of a fire alarm call point, or by using a control at the fire alarm panel.

6.6 Where fire and smoke curtains form part of the protection of escape routes, it is essential that the curtain does not delay staff actions in responding to an alarm or implementing the fire evacuation plan.

6.7 The affordable accommodation units will operate a “stay put” evacuation strategy, whereby it is not necessary to immediately evacuate an apartment that is clear of smoke or other fire products in the event of a fire in another apartment or the hotel.

6.8 The occupants of an apartment should immediately evacuate if the Part 6 system within an apartment operates, the fire and rescue service operate the manual fire alarm system causing an alarm in each apartment, or, an apartment becomes affected by fire products from a fire elsewhere in the building.

6.9 Written information and instructions should be provided to all tenants in the affordable apartments detailing the fire evacuation strategy for the building. The information should be summarised in a notice displayed in the entrance lobby.

7. MEANS OF ESCAPE

Means of Escape Routes

7.1 The means of escape will generally meet the requirements of ADB with respect to travel distance, number and width of exits and capacity of protected stairs. However, the shared fire-fighting core is a variation from the recommendations of ADB and is justified on the following basis:

1. The hotel and flats will not evacuate simultaneously.
2. The hotel will be managed by trained staff on a 24-hour basis.
3. Hotel staff will meet the fire brigade on arrival in the event of a fire at the hotel directing them to the access point to the fire-fighting shaft via the entrance to the apartments.
4. Means of access for the fire brigade will be provided via the entrance of the apartments. This could be facilitated by hotel staff, but a stronger solution would be to fit the apartment entrance door with a key operated override using a standard key carried by the fire brigade. This would also allow access for the fire brigade to fight a fire in the residential apartments about which hotel staff may be unaware. It is understood that the fire brigade carries a secure Gerda Key on all fire appliances, but this should be confirmed with the London Fire Brigade.
5. Electrically operated locks on the doors from the hotel into the shared fire-fighting stair will open on activation of the fire detection and alarm system. In addition, a 'break glass' override switch will be provided by each door on the hotel side. Once operated, these electric locks should remain unlocked until a positive reset action is taken, i.e. the locks should not simply reset on resetting the fire alarm. This is to ensure that access is maintained for the fire and rescue service, even if the fire alarm is silenced or reset.
6. The shared firefighting stair will form part of a two-hour, lobby-protected fire-fighting shaft. The stair will be protected from both hotel and affordable accommodation areas by a mechanically-assisted smoke shaft.
7. Hotel staff will have access to the shared stair for completion of daily fire safety escape route checks.
8. Formal arrangements are to be put in place between the hotel and affordable accommodation management, as follows:
    - To report and act on any fire safety deficiencies;
    - To implement a common contract for testing and maintenance of the following:
        – dry rising main;
        – firefighting lift;
        – smoke control in the firefighting stair;
        – smoke detection used to activate smoke control;
        – any associated equipment, including emergency power supplies and emergency escape lighting.

9. There will be a bespoke means for the fire and rescue service to raise an alarm to implement an evacuation of the affordable accommodation units.

7.2 Hotel guest bedrooms will be served by protected corridors on each floor. Corridors will be sub-divided by fire-resisting doors to reduce the risk of smoke simultaneously obstructing the route to multiple protected stairs.

7.3 Affordable accommodation apartments will be served by protected common corridors on each floor. Each apartment will be provided with a protected entrance hallway of 9m maximum length in accordance with Diagram 3.2 of ADB Volume 1: 2019.

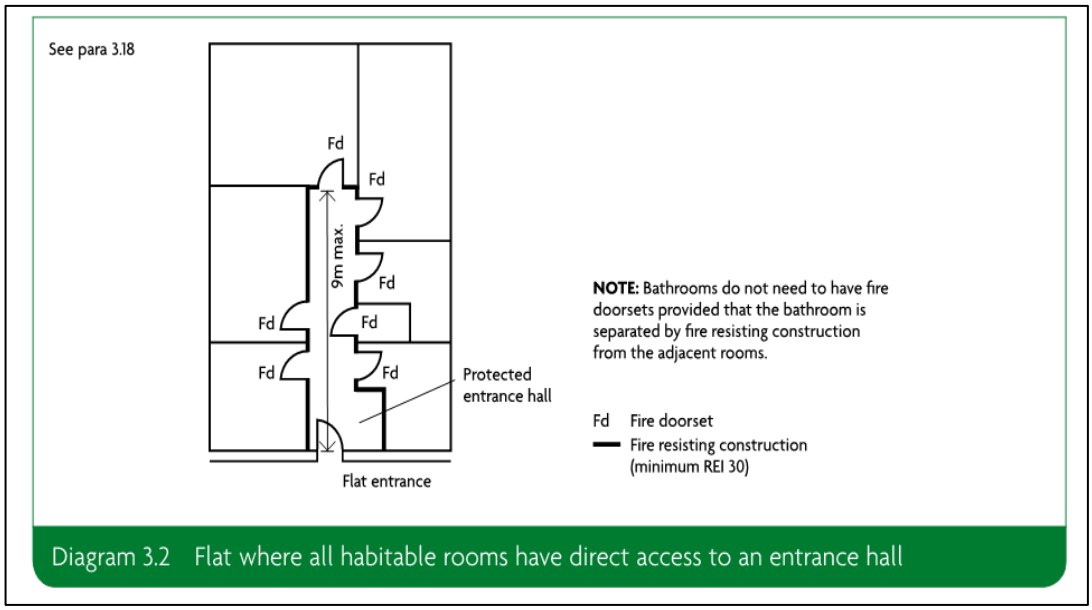


Diagram 3.2 ADB – Internal Protected Entrance Hall

7.4 Travel distances will comply with the recommendations in ADB, as shown in the table below:

Location	**Travel Distance (m) (single direction)**	**Travel Distance (m) (more than one direction)**
Within hotel bedrooms:	9	18
Hotel bedroom corridors:	9	35
Elsewhere in the hotel:	18	35
Open roof plant areas:	60	100
Common corridor of apartments. Flat entrance door to protected stair.	7.5	—
Along internal protected entrance hall to entrance door of flat.	9	—

7.5 A single point of roof access/egress point from a protected stair is proposed for roof plant. Part of the plant area is likely to form an enclosure for which a 9m single direction travel distance is applicable. For open areas, 60m single direction travel is permitted. Hence, exits from plant room enclosures will take account of these respective limits.

7.6 All upper floors are accessible by guest lifts. All upper floors have UA bedrooms, suitable for non-ambulant disabled guests.

7.7 Evacuation of disabled people in the hotel will be managed by Team Members using evacuation chairs designed for this purpose.

7.8 Refuge positions, measuring 1,400mm x 900mm, will be provided within the staircase lobbies of each staircase. Communications equipment, complying with the recommendations of BS 5839-9[10], will be provided at disabled persons' refuge points, with the master station by the fire alarm panels at reception. The communications equipment must be designed so that it can be used effectively when the fire alarm is activated. Refuges should be clearly identified. In protected lobbies and protected stairways, there should be a mandatory blue sign worded 'REFUGE – KEEP CLEAR' in addition to fire safety signs.

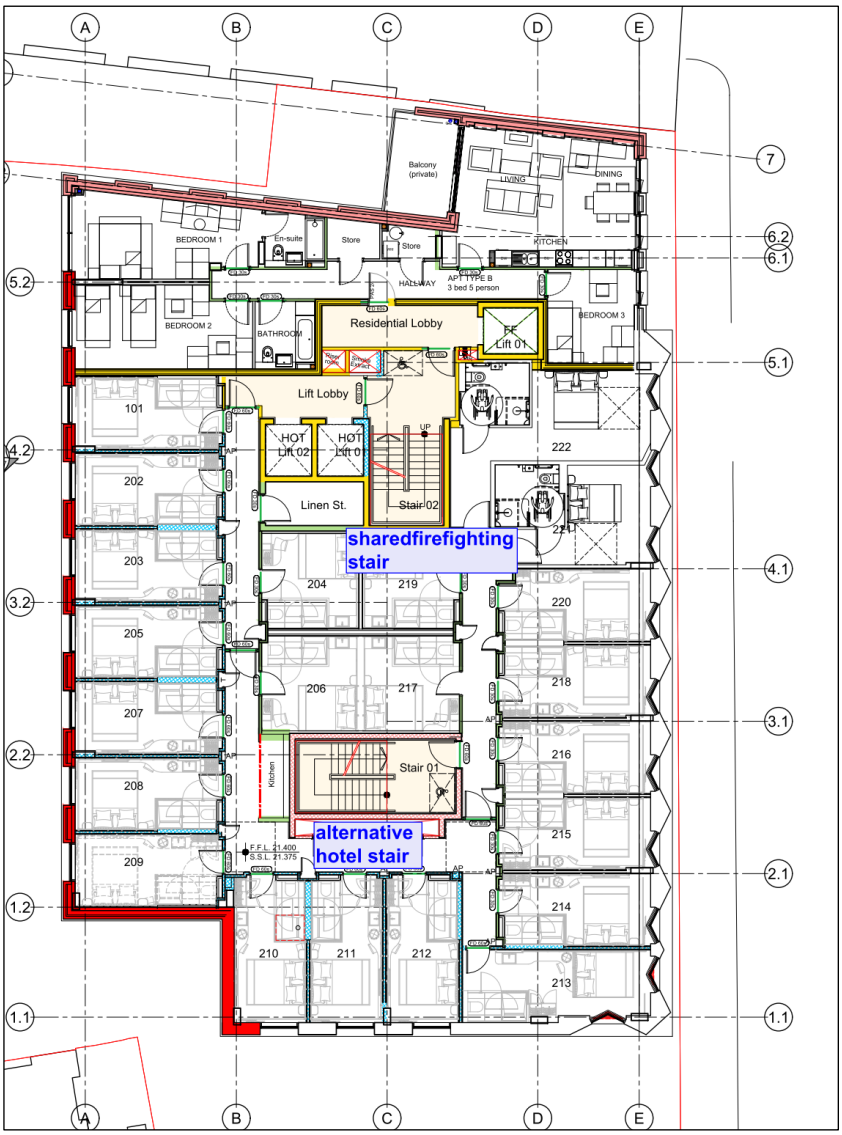
7.9 There is no requirement to provide refuge positions for the affordable accommodation.

7.10 Hotel bedroom corridors will be at least 1,200mm wide and doors on escape routes, including storey exits to staircases, no less than 850mm wide. Doors on escape routes will open in the direction of escape, unless accessible to 50 people or less in normal risk areas.

7.11 The building will be provided with two protected staircases, designated as shown on the plan below. The fire-fighting stair will be shared by the hotel and affordable accommodation and the alternative stair will only serve the hotel.

7.12 Both stairs will be 1,200mm wide providing a capacity of 510 persons/stair. Final exits from stairs will be of equivalent width to the stair served.

[10] BS 5839-9: 2011. *Fire detection and fire alarm systems for buildings. Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems*.



Stair Designations

7.13 Current figures indicate that hotel bedrooms will provide accommodation for up to a total of 306 guests in 153 double bedrooms.

7.14 The restaurant/bar area has been taken to have a notional capacity of 200 persons. The restaurant/bar will have escape routes that are independent of the stairs and, hence, there is no merging flow at the final exits of stair enclosures. A minimum of two 1,050mm exits will be provided from the restaurant, spaced appropriately to provide suitable alternative escape routes.

7.15 Where level access is not available from a building final exit, a suitable ramp, platform lift, or other means agreed with the approved building control body, will be provided.

7.16 Final exits from the hotel run through a service area, including a partially covered “archway” under the affordable housing section of the building. The following measures, which are subject to agreement with the Approved

Inspector, will be implemented to ensure that the external route may be used safely and effectively at all material times:

1. The external route will be arranged to ensure that it is at least 1,800mm in distance from any adjacent unprotected glazing.

2. Refuse areas along the route and any other external stores will be provided with FD30S fire doors, which will either be kept locked shut, when not in use, or provided with suitable self-closing devices.

3. Ventilation louvres in doors will be fitted with intumescent seals and maintained at high level or, alternatively, positioned so as not to impinge on the external escape route.

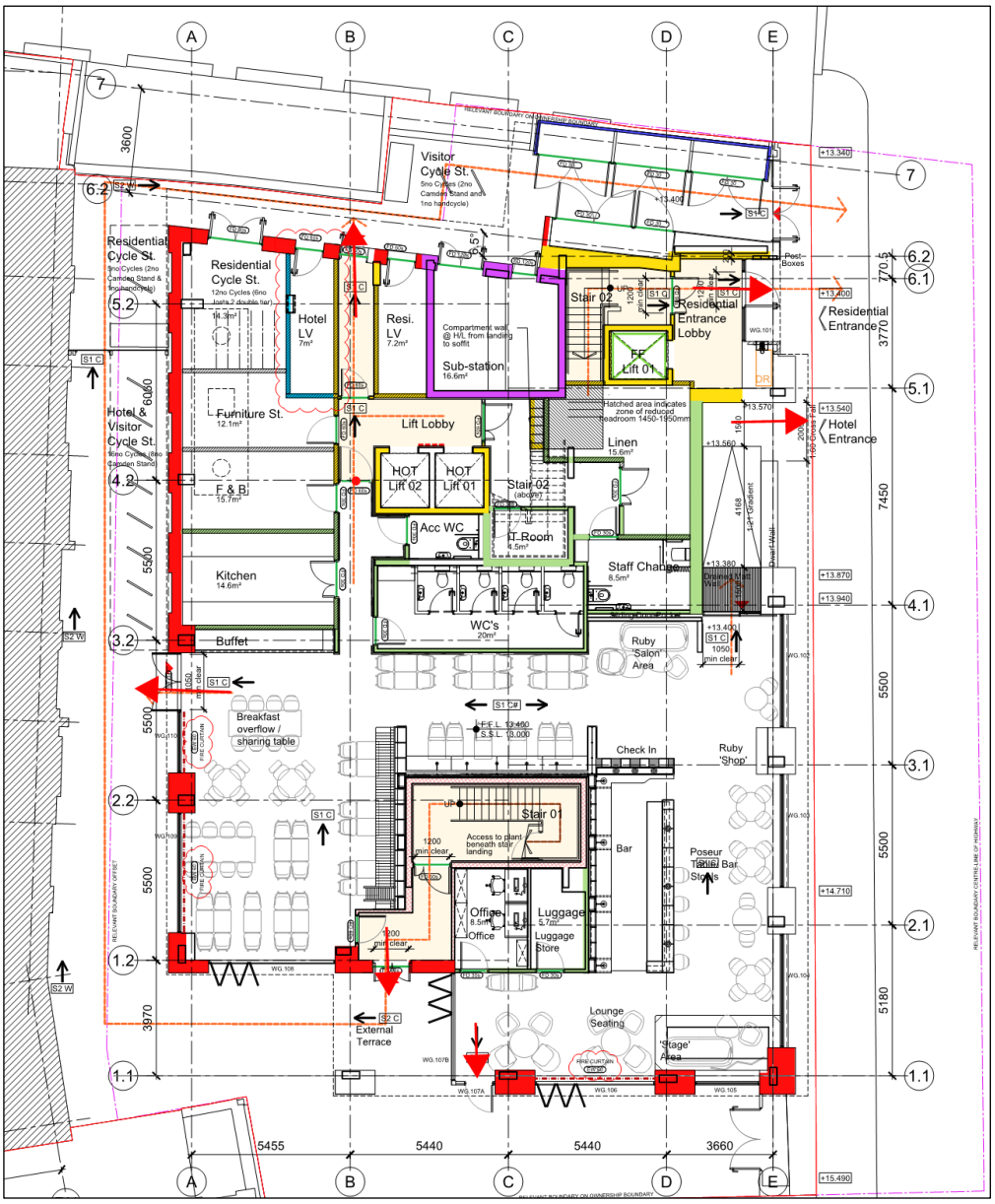
4. The “archway” will be maintained substantially open at high level at both ends.

5. Notices will be displayed stating that the area must be kept clear.

6. The external route will be subject to daily escape route inspections by hotel staff, including after any refuse collection.

7. The hotel will not automatically evacuate if a fire occurs in a residential apartment or refuse area. Consequently, it will be possible to direct hotel occupants away from the external escape route, for example, to avoid a hazard from overhead falling glass, e.g. a member of staff positioned at the final exit from the alternative stair could easily direct guests through the restaurant to the main hotel exit doors.

7.17 The external route and final exits from the building are illustrated on the plan below.



Final exits and external route

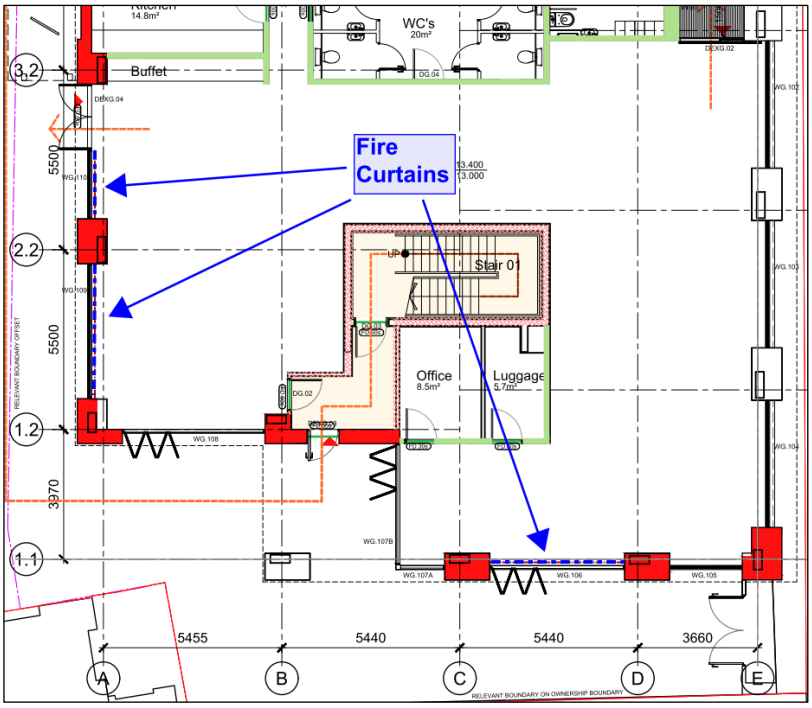
Active Fire Barriers

7.18 Fire and smoke curtains will be incorporated into the design to reduce thermal radiation from a large window in the south and west elevations of the restaurant/bar. This is necessary as an alternative to a fire-resisting glazing system (integrity and insulation) due to the proximity of an adjacent building and the requirement under the Building Regulations to mitigate the risk of external fire spread. Fire and smoke curtains will also be provided in bedroom protected corridors to protect alcoves housing vending machines. Fire and smoke curtains are required to be designed according to the requirements of

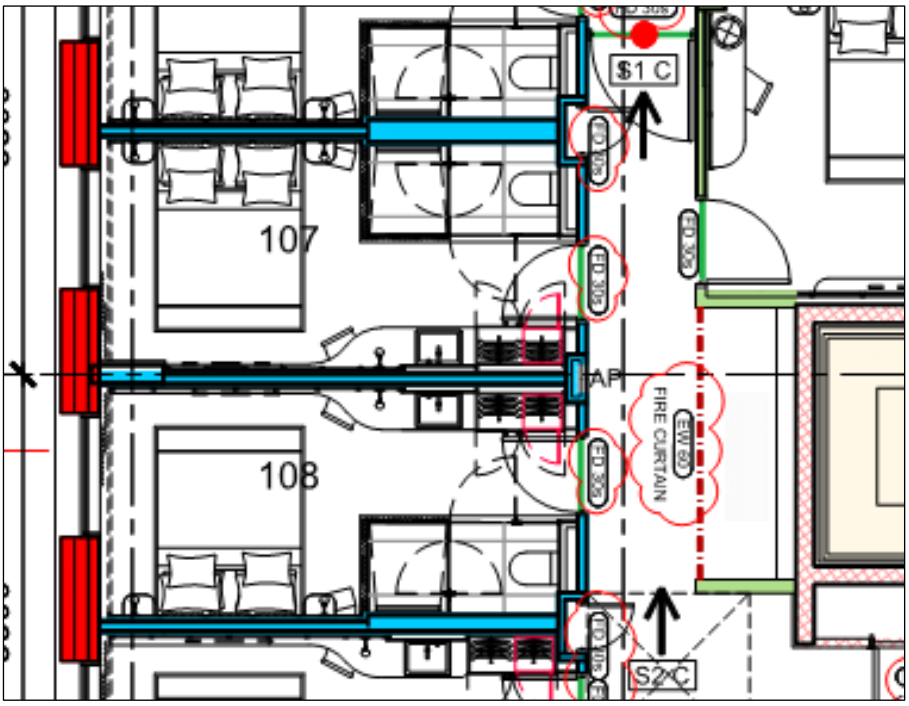
BS 8524-1[11] and specified, installed and commissioned to BS 8524-2[12]. The appointed contractor will be required to provide a design specification, based on the content of Tables 1-3 of BS EN 8524-2[13], suitable for the location and size of the curtain. This will be required to include, but not be limited to, the following criteria:

- Integrity (E) and Radiation (W) rating of EW60 (subject to the agreement of the Approved Inspector).
- Smoke containment performance of not less than $3m^3/m/h$ (bedroom corridor curtains).
- That C1 reliability criterion is met.
- That both a mains and secondary power supply is provided if a gravity fail safe is not provided.
- That a suitable test facility (button/switch) in a readily accessible location, for use by hotel staff, is provided.
- Fire and smoke curtains protecting window openings should descend immediately following a signal arising from a heat detector adjacent to each fire curtain. Fire and smoke curtains protecting vending machines in bedroom corridor alcoves should descend immediately following a signal arising from a smoke detector adjacent to the smoke curtain.
- Installation checklist and certificate, and a commissioning certificate, must be provided by the appointed contractor, in line with the examples provided in the appendices to BS 8524-2.

[11] BS 8524-1: 2013. *Active fire curtain barrier assemblies. Specification.*
[12] BS 8524-2: 2013. *Active fire curtain barrier assemblies. Code of practice for application, installation and maintenance.*
[13] BS 8524-2: 2013. *Active fire curtain barrier assemblies. Code of practice for application, installation and maintenance.*



Fire Curtains Locations on the Ground Floor



Fire curtains protecting vending machine alcove

Powered Sliding Doors

7.19 In this scheme, powered sliding doors are incorporated on a designated escape route (main hotel exit). Powered sliding doors on escape routes

should be designed, installed and tested in compliance with the requirements of BS EN 16005[14] and BS 7273-4.

7.20 In the case of powered sliding doors without a hinged 'break out' facility, the opening of the doorset should be guaranteed by a fail-safe system according to Performance Level "d" of BS EN ISO 13849-1[15]. Any electrical faults preventing normal operation of the doorset will be required either to be detected automatically, or be detected (within 15 seconds) after activation of the doorset, and cause the doorset to automatically open and remain open. The fail-safe system should be automatically tested at least once every 24 hours.

7.21 Fail-safe systems that use stored electrical energy should have a monitoring system checking that the energy level stored is enough for at least one cycle of operation. This check should be carried out immediately after connection to the power supply and, subsequently, at least once every 24 hours. If the check fails, or is not performed, the doorset should automatically open and remain open.

7.22 The design or configuration of sliding door release mechanisms should be such that power is required to maintain the release mechanisms in the non-fire state, so that the release mechanisms fail safe in the event of failure of their power supply. When the mains power goes off, sliding doors should automatically open within five seconds and remain in the open position.

7.23 Sliding doors on escape routes should automatically open whenever a fire signal (but not a pre-alarm warning) is given at the fire alarm control panel. This includes circumstances when a door may be in a secured, locked mode, such as during the night. Where a building has a staff alarm arrangement, powered sliding doors need not release or open on operation of an automatic fire detector, other than a heat detector, until fire alarm sounders operate.

7.24 A clearly labelled and identifiable manual control, to actuate the relevant release mechanism, readily distinguishable from a fire alarm manual call point (i.e. a green 'break glass' manual control), should be provided in close proximity to each set of electrically-powered sliding doors on means of escape routes. Operation of the control should cause interruption of the power supply to the door release mechanism, thereby causing the door(s) to open.

[14] BS EN 16005: 2012. *Power operated pedestrian doorsets. Safety in use. Requirements and test methods.*
[15] BS EN ISO 13849-1:2015. *Safety of machinery. Safety-related parts of control systems. General principles for design*

Emergency Escape Lighting

7.25 There will be comprehensive coverage of emergency escape lighting. The emergency escape lighting will comply with the recommendations of BS 5266-1[16] and the requirements of BS EN 1838[17] and BS 5266-8[18].

7.26 Emergency escape lighting will be provided in the hotel and affordable accommodation in all escape routes (not within individual flats), open areas greater than 60m^2 area, high risk areas and points of emphasis, including:

a) At each exit door intended to be used in an emergency.

b) Near stairs so that each flight of stairs receives direct light.

c) Near any other change in level.

d) Mandatory emergency exits and safety signs.

e) At each change of direction.

f) At each intersection of corridor.

g) Near to each final exit and outside the building to a place of safety.

h) Near each piece of fire-fighting equipment and call point.

7.27 The emergency lighting system may comprise a mixture of self-contained, non-maintained and maintained luminaires, with integrated battery packs and inverter units.

7.28 All emergency luminaires will have a standby operation of three hours, with their associated charger units able to suitably recharge within 24 hours. Testing facilities will be key switches, located adjacent to local distribution boards, for tests to large areas such as reception, bedroom corridors and staircases. For tests to isolated areas, such as offices, linen rooms and WCs, test facilities will be installed within the local lighting switch plate.

7.29 Emergency lighting will be designed to a minimum of 1 lx on all escape routes, with 10% of the general illumination level over all distribution boards, switchboards and plant items. Open areas larger than 60m^2 floor area will be provided with horizontal luminance of not less than 0.5 lx at the floor level of the area, excluding a border of 0.5m around the perimeter.

Fire Exit Signs

7.30 Escape routes will be provided with suitable 'FIRE EXIT' signs in compliance with the following standards.

a) BS 5499-4: 2013. *Safety signs. Code of practice for escape route signing*.

[16] BS 5266-1: 2016. *Emergency lighting - Code of practice for the emergency lighting of premises.*
[17] BS EN 1838: 2013. *Lighting applications – Emergency lighting.*
[18] BS 5266-8: 2004 (BS EN 50172: 2004). *Emergency escape lighting systems.*

b) BS ISO 3864-1: 2011. *Graphical symbols. Safety colours and safety signs. Design principles for safety signs and safety markings*.

c) BS EN ISO 7010: 2020+A1: 2020. *Graphical symbols. Safety colours and safety signs. Registered safety signs*.

d) BS 5499-10: 2014. *Guidance for the selection and use of safety signs and fire safety notices*.

Fire Assembly Point

7.31 Fire assembly points will be finalised by the occupiers as part of the process of formulating their evacuation plans. However, suitable width pavement areas are available to the north and south of the development on Eyre Street Hill or, alternatively, pavement areas along Summers Street and Back Hill could be utilised.

8. GENERAL PROVISIONS RELATING TO FIRE DOORS

8.1 The general recommendations in Section 5 of ADB (Section 5 of ADB Vol 2: 2019 and 2 and in Section 3 of ADB Vol 1: 2019) will be applied. This includes, but is not limited to, the following provisions:

a) Fire-resisting glass, fire rated solely for integrity, will be subject to the limitations on non-insulating fire resisting glazing in ADB (Table B5 of ADB Volume 1: 2019 and ADB Volume 2: 2019). The appointed contractor's door schedule should be closely verified against this criterion.

b) Doors on escape routes will open in the direction of travel through a minimum of 90 degrees.

c) Doors on escape routes will be free from locks and unsuitable fastenings. Electronic locks may be used where additional security measures are necessary. However, where used, the recommendations of BS 7273-4 will apply.

d) Fire-resisting doors sub-dividing corridors, or which swing in two directions, will be provided with suitable vision panels.

e) Fire-resisting doors opening onto corridors or stairways will be recessed, if necessary, to prevent the door from encroaching onto the stairway or corridor.

f) Revolving or automatic doors will not be used on escape routes, unless suitable additional safeguards are in place.

g) Fire-resisting doors will be fitted with self-closing devices, complying with the requirements of BS EN 1154[19] for the size of door fitted and specified to overcome any latch or lock fitted to the door. Fire-resisting doors to stores and cupboards may be kept locked shut as an alternative to fitting self-closing devices. Fire-resisting doors should be marked with signs, either 'FIRE DOOR KEEP SHUT' or 'FIRE DOOR KEEP LOCKED SHUT', as appropriate. The following fire doorsets are not required to have these signs:

- doors to, and within, flats and dwelling houses;
- bedroom doors in hotels;
- lift entrance/landing doors.

h) For doors on escape routes, there should be an unobstructed space of at least 300mm on the pull side of the door between the leading edge of the door and any return wall.

Note: this is not necessary on standard hotel bedroom doors.

[19] BS EN 1154:1997 *Building hardware. Controlled door closing devices. Requirements and test methods.*

9. INTERNAL FIRE SPREAD

Linings/furnishings

9.1 In order to control the spread of flame across surfaces, all finishes to walls and ceilings will meet the performance classification recommended in ADB (Table 6.1 of ADB Volume 2: 2019 and Table 4.1 of ADB Volume 1: 2019). Therefore, the classification of the surfaces of walls and ceilings within the building will comply with the following:

Location	European class
Small rooms of area not more than 30m^2 in non-residential accommodation and 4m^2 in residential accommodation:	**D-s3, d2**
Other rooms:	**C-s3, d2**
Other circulation spaces:	**B-s3, d2**

9.2 Suitable limitations will be applied to control the use of building elements and services comprising thermoplastic materials.

10. INTERNAL FIRE SPREAD (STRUCTURE)

Elements of structure

10.1 For the purpose of Table B4 of ADB Volume 1 and 2: 2019, the height of the highest occupied level is greater than 18m, when measured in accordance with Diagram D5 of ADB Volume 1 and 2: 2019. Therefore, the elements of structure will be specified to provide not less than 90 minutes' fire resistance[20].

10.2 Fire resistance means the level of performance of the element of structure, when tested in accordance with the requirements of BS 476 Parts 20-24[21] or EN equivalent.

10.3 Where one element of structure supports, or carries, or gives stability to another, the fire resistance of the supporting element will be no less than the minimum period of fire resistance for the other element, whether that element is loadbearing or not.

Fire Compartmentation

10.4 All floors in the building will be specified as compartment floors, providing 90 minutes fire resistance.

10.5 The walls separating hotel bedrooms from the common escape routes will provide at least 30 minutes' fire resistance (see below). Bedroom doors will be to FD30S standard and be fitted with self-closing devices.

10.6 However, hotel bedrooms on the West and South elevations will be enclosed with 60-minute compartment walls. This is necessary as a mitigation measure to reduce the risk of external fire spread. It is considered reasonable for FD30S doors to be provided to these rooms, i.e. equivalent to doors separating a flat from a common corridor.

10.7 Walls separating the hotel and affordable apartments will be (as a minimum) 90-minute fire compartment walls.

10.8 Flats will be separated from each other by 90-minute fire compartment walls. The walls separating flats from the firefighting lobby will be 120-minute fire

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[21] BS 476-20:1987. *Fire tests on building materials and structures. Method for determination of the fire resistance of elements of construction (general principles)*
BS 476-21: 1987. *Fire tests on building materials and structures. Methods for determination of the fire resistance of loadbearing elements of construction*
BS 476-22: 1987. *Fire tests on building materials and structures. Methods for determination of the fire resistance of non-loadbearing elements of construction*
BS 476-23: 1987. *Fire tests on building materials and structures. Methods for determination of the contribution of components to the fire resistance of a structure*
BS 476-24: 1987. *Fire tests on building materials and structures. Method for determination of the fire resistance of ventilation ducts*

compartment walls and flat entrance doors within these walls will be rated FD60S. These levels of fire resistance exceed those recommended in ADB but are specified to add resilience to the design, taking account of the shared firefighting shaft.

10.9 Doors forming part of the enclosure of a 30-minute fire-resisting, protected entrance hall in a flat will be rated FD20 minimum. It is not considered essential that these doors are fitted with self-closing devices.

10.10 Places of special fire risk, e.g. plant rooms, boiler rooms, stores, linen cupboards, etc will be enclosed with fire-resisting construction having not less than 30 minutes' fire resistance.

10.11 All service shafts will be constructed as protected shafts with the appropriate fire resistance, as specified in Tables B3 and B4 of ADB Volume 1 and 2: 2019.

10.12 The fire-fighting shaft will be enclosed in 120 minutes' fire-resisting enclosure.

10.13 Any wall common to two or more buildings should run the full height of the building and form a compartment wall.

Concealed Spaces, Ducting, Dampers and Fire Stopping

10.14 Concealed spaces or cavities in the construction of a building provide a route for smoke and flames to spread. Cavity barriers will be provided to restrict the spread of smoke and flames where a cavity passes through a fire-resisting wall or floor, and to sub-divide large cavities that could allow extensive hidden fire spread. As necessary, cavity barriers will be provided as follows:

a) At the top of cavity walls to close the cavity.

b) In line (above or below) with compartment walls, walls or doors forming a fire-resisting barrier, or walls or doors protecting an escape route.

c) Around openings in a cavity wall exposed to form a window.

d) At the junction between an external cavity wall and every compartment floor and compartment wall.

e) At the junction between an internal cavity wall and every compartment floor, compartment wall or other wall or door assembly, that forms a fire-resisting barrier.

f) A cavity affecting alternative escape routes.

g) To sub-divide an extensive cavity (see below).

10.15 Cavity barriers will be used to sub-divide any extensive cavities exceeding the dimensions set out in Table 9.1 of ADB Volume 2: 2019 and in relevant sections of ADB Volume 1: 2019.

Table 9.1 Maximum dimensions of cavities in buildings other than dwellings (purpose groups 2 to 7)

Location of cavity	Class of surface/product exposed in cavity (excluding the surface of any pipe, cable or conduit, or any insulation to any pipe)	Maximum dimension in any direction (m)
Between roof and a ceiling	Any	20
Any other cavity	Class C-s3, d2 or better	20
	Worse than Class C-s3, d2	10

(Note: Some exceptions to the above are permitted by paragraphs 9.10-9.12 of ADB (ADB Volume 2: 2019)

General Ventilation Ductwork

10.16 Any ventilation ducts and flues that pass-through fire-resisting partitions will be protected, either using fire dampers, fire-resisting enclosures or fire-resisting ductwork of suitable fire resistance for the fire-resisting element/s breached.

10.17 Dampers operated by smoke detectors (fire and smoke dampers), in addition to thermal activation (fire dampers), are required in buildings where people sleep. ADB does provide a relaxation with respect to fire and smoke dampers in a sleeping risk building in which a Category L1 (BS 5839-1) fire detection and alarm system has been installed, in circumstances where escape routes are not affected, provided the general fire alarm signal is given immediately a fire is detected. However, designated escape routes still require enhanced protection by the use of fire and smoke dampers, operated by the fire detection and alarm system.

10.18 Where ducts pass between fire-separating elements to serve multiple flats or dwellings, fire dampers or fire and smoke dampers should be actuated by both of the following.

i) Smoke detector-controlled automatic release mechanisms.

ii) Thermally actuated devices.

10.19 Thermally activated fire dampers will be used where ducting passes through fire-resisting construction (motorised fire and smoke dampers should be provided where ducts pass through walls to vertical risers). In addition, fire-resisting ductwork (integrity only) will be provided in escape routes.

10.20 Ducting should have the same fire integrity rating as the building element breached. For example, ducting running above a bedroom corridor breaches bedroom/corridor walls and should have 30 minutes' fire rating (integrity). If the ducting then passes from a bedroom corridor through a staircase enclosure, lobby or protected shaft that is required to have 60 minutes' fire resistance, then the ducting passing through the staircase, lobby or protected shaft must also have 60 minutes' fire resistance (integrity); similarly, 120 minutes' fire resistance would be required if ducting penetrates the

enclosure forming a fire-fighting shaft. Alternatively, a suitably rated fire and smoke damper should be provided at the point where the enclosure to the protected staircase, lobby or protected shaft is breached by the ducting.

10.21 Fire dampers should conform to BS EN 15650[22]. They should have an 'E' classification equal to, or greater than, 60 minutes. Fire and smoke dampers should also conform to BS EN 15650. They should have an 'ES' classification equal to, or greater than, 60 minutes. Further information on fire and smoke-resisting dampers is given in the ASFP Grey Book.

10.22 Further information on fire-resisting ductwork is given in the ASFP Blue Book and the ASFP Blue Book (European version).

Smoke Extraction and Fume Extraction Ducting

10.23 Dampers are not suitable for protecting ducting used for smoke extraction or fume extraction from kitchens. In these cases, method 2 (fire-resisting enclosure) or method 3 (fire-resisting ductwork), as specified in ADB, should be used.

10.24 If the ductwork incorporated in a smoke extraction system is wholly contained within the fire compartment, it must, at least, be capable of resisting the anticipated smoke temperatures generated during the development of a fire. However, if the ductwork penetrates a fire-resisting barrier, it must also be capable of providing the relevant fire resistance in a test to BS 476-24. Part 24 of this standard also imposes an additional requirement on smoke outlet ductwork (i.e. the retention of at least 75% of its original cross-sectional area during the test).

10.25 Kitchens are required to have separate and independent extraction systems, because of the polluted nature of the extracted air. Fire dampers should not be installed in extraction ductwork serving car parks or kitchens; any duct or ductwork penetrating fire-resisting barriers must be fire resisting. Kitchen extraction ductwork presents a particular hazard, in that combustible deposits such as grease are likely to accumulate on its internal surfaces. A fire in an adjacent compartment through which the ductwork passes could, therefore, initiate a fire within the ductwork which, in the absence of fire dampers, might prejudice the safety of the kitchen occupants. For this reason, BS 476-24 imposes an additional requirement (i.e. when tested against external fire) that the internal surface of the ductwork within the furnace must meet the insulation criteria. It is also essential that this particular type of ductwork is provided with access for cleaning, at distances not exceeding 3m.

10.26 Further information on fire-resisting ductwork is given in the ASFP Blue Book and the ASFP Blue Book (European version).

[22] BS EN 15650: 2010. *Ventilation for buildings. Fire dampers.*

10.27 It is essential that the appointed contractor provides detailed plans to the Approved Inspector and fire consultant, demonstrating conformity with the preceding paragraphs, for approval prior to installation.

Fire Stopping

10.28 Joints between fire-separating elements, e.g. walls and floors, should be effectively fire-stopped. In addition, all openings around pipes and services passing through a fire-resisting wall or ceiling should be adequately protected by sealing or fire stopping, so that the fire resistance of the element is not impaired. Openings for pipes through a fire-separating element may be dealt with by proprietary sealing, restricted pipe diameter or sleeve.

10.29 To ensure that systems are compatible, only penetration seals that have been tested or assessed in conjunction with a specific duct or damper should be used.

10.30 As part of the stage 5 design, the appointed fire stopping contractor is required to specify approved fire stopping products/methodology for all relevant locations.

10.31 CSTA recommend that appointed fire stopping contractors should be certified by a third party, such as FIRAS or the Loss Prevention Certification Board (LPCB). This means that they work to agreed industry standards, employ trained operatives and are subject to on-site audits and inspection of representative samples of the work carried out to ensure compliance with manufacturers' recommendations and Building Regulations.

11. FIRE SUPPRESSION

11.1 Portable extinguishers will be provided to protect special and general risks in the hotel but not in the common areas of the affordable accommodation. Guidelines for allocation of fire extinguishers in the hotel guidelines are provided in the table below.

Location	**Type**	**Size**	**Rating**
Corridors (Note 1)	Foam CO_2	6 litre 2kg	13A 34B
Reception (Note 2)	Foam CO_2	6 litre 2kg	13A 34B
Restaurant/bars (Note 3)	Foam CO_2	6 litre 2kg	13A 34B
Main linen rooms with electrical equipment.	CO_2	2kg	34B
Plant/Boiler rooms	CO_2	2kg	34B
Commercial Kitchens	Class F wet chemical CO_2 Fire blanket	6 litre 2kg One blanket	13A/75F 34B
Team Rooms	CO_2 Fire blanket if a toaster is provided	2kg One blanket	34B

Notes:

1. One of each type of extinguisher located near each stair, but sufficient so that each sub-divided section of corridor has a fire extinguisher point. The maximum travel distance to reach a fire extinguisher should not exceed 30m from any point in a bedroom.
2. One of each type of extinguisher near the exit (but not within an entrance weather lobby). A more appropriate location may be necessary if security is a concern.
3. One of each type of extinguisher near each exit from the bar or restaurant.

11.2 Portable fire extinguishers of the foam (for Class A fires) and carbon dioxide (for Class B fires) types will be positioned on escape routes, close to the exit from the room or floor, or the final exit from the building. Similarly, where the particular fire risk is specifically located, e.g. flammable liquids, the appropriate fire extinguisher is near to the hazard, so located that it can be safely used.

11.3 Fire extinguishers should be placed on a dedicated stand, or hung on a wall at a convenient height, so that Team Members can easily lift them off (at about 1m for larger extinguishers and 1.5m for smaller ones, to the level of the handle). Ideally, no-one should have to travel more than 30m to reach a fire extinguisher. If there is a risk of malicious use, it may be necessary to use alternative, and more secure, locations.

11.4 Further guidance on the selection of portable fire extinguishers is contained in BS 5306-8[23].

11.5 While outside the scope of this fire strategy, it is noted that kitchen range equipment may be protected by a suitable suppression system.

11.6 The commencement date of the building project is such that recent amendments to ADB will apply. The changes, which came into effect on 26 November 2020, include a reduced height threshold for sprinklers in Purpose Group 1a (residential (block of flats)) from 30m to 11m.

11.7 As the building referred to in this fire strategy is over 11m in height, each residential apartment will be provided with a domestic automatic sprinkler installation, designed and installed to meet the recommendations of BS 9251[24] for a Category 2 system. The following design elements will be included (for full specification, reference should be made to the appointed contractor's schedule):

1. The sprinkler system will be supplied by a water tank. Tank capacity specified by BS 9251: 2014 for Hazard Classification: Category 2 is between $3m^3$ to $4.5m^3$. Calculated water requirement for the sprinkler system by the Sprinkler Specialist (UltraSure Fire) is 140l/min, which equates to 4,200 litres. The tank net capacity is 4,000 litres. The building is supplied with 63mm mains water connection with a Priority Demand Valve to ensure no domestic water draw off occurs during sprinkler operation.
2. Wet system.
3. Protection limited to flats only, not the common parts.
4. Designed operating time of 30 minutes with two heads discharging water. Powered by electric pump/s.
5. Discharge density of 2.8mm/minute at 4 bars pressure.

[23] BS 5306-8: 2012. *Fire extinguishing installations and equipment on premises - Selection and positioning of portable fire extinguishers - Code of practice.*
[24] BS 9251: 2014. Fire sprinkler systems for domestic and residential occupancies – Code of practice.

6. Fast response sprinkler heads with an operating temperature of 68º Celsius.
7. A zone valve will be located outside each apartment.

11.8 The sprinkler system should be installed, commissioned and documented in accordance with the provisions contained in section 6 of BS 9251. The system should be maintained in accordance with the recommendation of section 7 of the standard. This will require facilities to be put in place for ongoing access to each apartment.

12. EXTERNAL FIRE SPREAD

12.1 The fire construction of external walls to prevent fire spread up the outside of a building, and the separation between buildings to prevent the spread of fire between buildings, must be subject to suitable controls.

12.2 Consequently, the following considerations are necessary:

- Control of filler, insulation materials, etc in buildings over 18m.
- Fire resistance of external walls.
- Resistance of external walls to ignition and fire spread over the surface.
- Provision of cavity barriers in external walls (see paragraph 10.7).
- Limitation of unprotected openings to prevent fire spread to an adjacent building by thermal radiation. (Unprotected openings are parts of the wall not having specified fire resistance.)

External Wall Materials/Components

12.3 The Government issued amendments to ADB in November and December 2018 to take account of changes to the Building Regulations. These are incorporated in ADB Volume 1 and 2: 2019. These include more restrictive controls on the construction of external walls for any building with a storey at least 18m above ground level and which contains one or more dwellings. While hotels are not specifically regarded as relevant buildings for the purpose of the Regulation, the controls are considered to apply to all external walls of the building in this case.

12.4 Consequently, all components used in, or on, the external walls of the building are restricted to materials achieving European classification Class A2-s1, d0 or Class A1. An assessment-in-lieu-of-test (AILOT) cannot be used to demonstrate compliance with this requirement.

12.5 The following additional requirements are noted:

1. Membranes used as part of the external wall construction should achieve a minimum classification of European Class B-s3, d0.
2. Internal linings should comply with the guidance provided in Section 6 of ADB.
3. Any part of a roof should achieve the minimum performance as detailed in Section 14 of ADB Volume 2: 2019 and Section 12 of ADB Volume 1: 2019.
4. Window frames and glass (including laminated glass) are exempted from the requirement set out in the previous paragraph, but window spandrel panels and infill panels must comply.
5. Thermal breaks are small elements used as part of the external wall construction to restrict thermal bridging. There is no minimum

performance for these materials. However, they should not span two compartments and should be limited in size to the minimum required to restrict the thermal bridging (the principal insulation layer is not to be regarded as a thermal break).

6. Shop front signs and similar attachments are not covered by the requirements for external walls.

12.6 The external wall of a building includes a reference to:

1. Anything located within any space forming part of the wall;
2. Any decoration or other finish applied to any external (but not internal) surface forming part of the wall;
3. Any windows and doors in the wall; and
4. Any part of a roof pitched at an angle of more than 70 degrees to the horizontal, if that part of the roof adjoins a space within the building to which persons have access, but not access only for the purpose of carrying out repairs or maintenance.

12.7 Certain specified attachments to external walls, such as balconies or solar panels, are similarly controlled.

Fire-resisting Standard of External Walls

12.8 The external walls of the building will have the fire resistance specified in Tables B3 and B4 of ADB Volume 1 and 2: 2019 (with the exception of those parts of an external wall that are permitted unprotected openings), namely:

<u>Any part less than 1m from any point on the relevant boundary</u>

- 90 minutes' fire resistance (stability/integrity/insulation) when tested from each side.

<u>Any part 1m or more from the relevant boundary</u>

- 90 minutes' fire resistance (stability/integrity) (15 minutes' insulation) when tested on the inside of the building.

External Fire Spread by Thermal Radiation

12.9 Reasonable measures must be in place to prevent fire spread to adjacent buildings by radiant heat flux from unprotected openings in the event of a fire.

12.10 The method used in this report for assessing the external fire spread risk to adjacent buildings is the method of enclosing rectangles provided in the Building Research Establishment document BR 187[25].

[25] BR 187: External fire spread: building separation and boundary distances; Second edition published 2014 ISBN 978-1-84806-319-8, Fire Research Station

12.11 However, for more complex elevations, analysis has been completed using the thermal radiation software, TRad.

12.12 TRad provides a flexible and versatile tool to compute the radiation distribution received on exposed walls (receivers) due to thermal radiation from any number of unprotected areas (radiators).

12.13 The radiation intensity calculation is based on the fundamental inverse square law, as shown in accordance with the equation below. The normal radiation intensity received at point P on the receiver can be expressed as:

$$I_P = \int I_E \frac{\cos \alpha_1 \cos \alpha_2}{\pi R^2} dA$$

in which α_1 and α_2 are the normal angles of the radiator plane and the receiver plane respectively, as shown below. The received radiation depends on the radiation intensity distribution I_E from the emitting point, the distance R between the emitting point and the point P, and the relative orientations α_1, α_2 (<90º) between the emitter and the receiver, as illustrated in Figure 1 below. The integration is carried out numerically over the entire area A_E of the radiator.

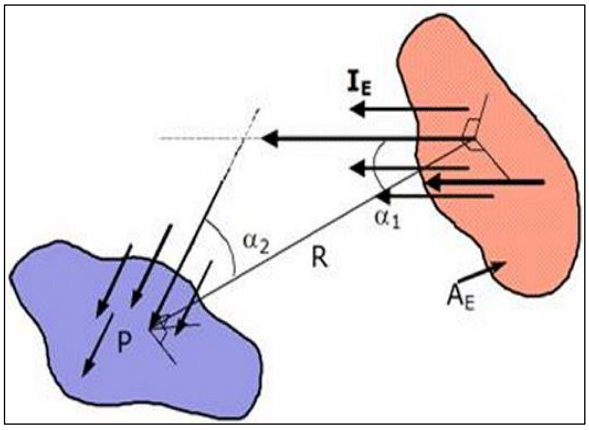


Figure 1

12.14 The building has compartment floors, so it is only necessary to consider the risk of external fire spread arising from a single floor.

12.15 All apartments and every hotel bedroom on the south and west elevations are enclosed with compartment walls, hence it is only necessary to consider the fire spread arising from a single apartment or single hotel bedroom.

12.16 Two windows in the restaurant on the west elevation will be provided with fire curtains (see paragraph 7.18) to reduce the extent of unprotected openings.

12.17 In addition, a large bi-fold door on the south elevation of the restaurant/bar will be provided with a fire curtain (see paragraph 7.18).

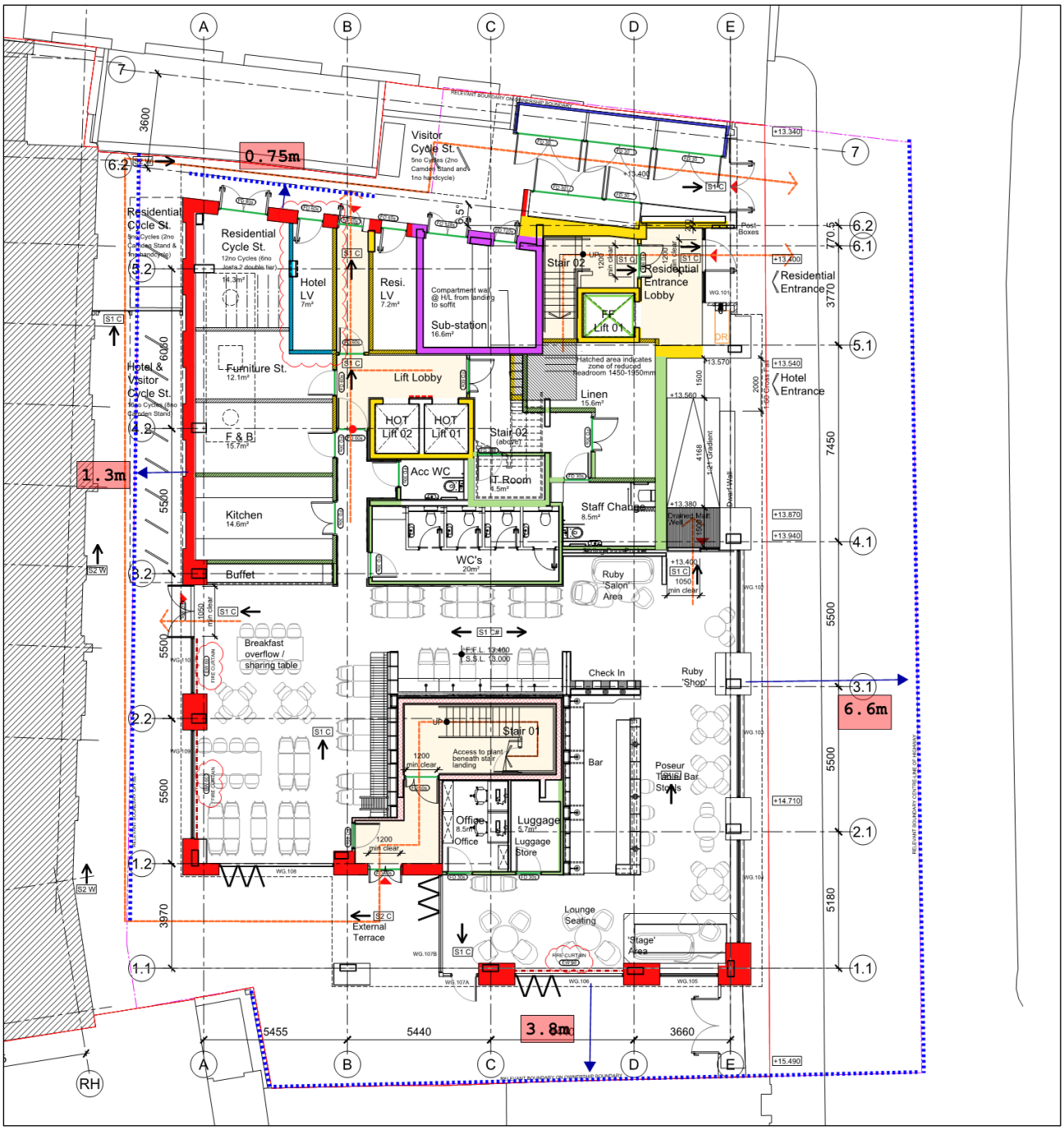
12.18 To the west, there is a shared yard with an office building, to be refurbished and extended by the same developer as that for the hotel and affordable apartments to which this strategy applies. CSTA have prepared a separate fire strategy for the office building. The space between the buildings is approximately 3.3m. Following discussion with the approved building control body, it has been agreed to set the notional boundary 2m from the offices and 1.3m from the hotel/affordable accommodation.

12.19 To the south is an external courtyard, on the other side of which is an adjacent third party property.

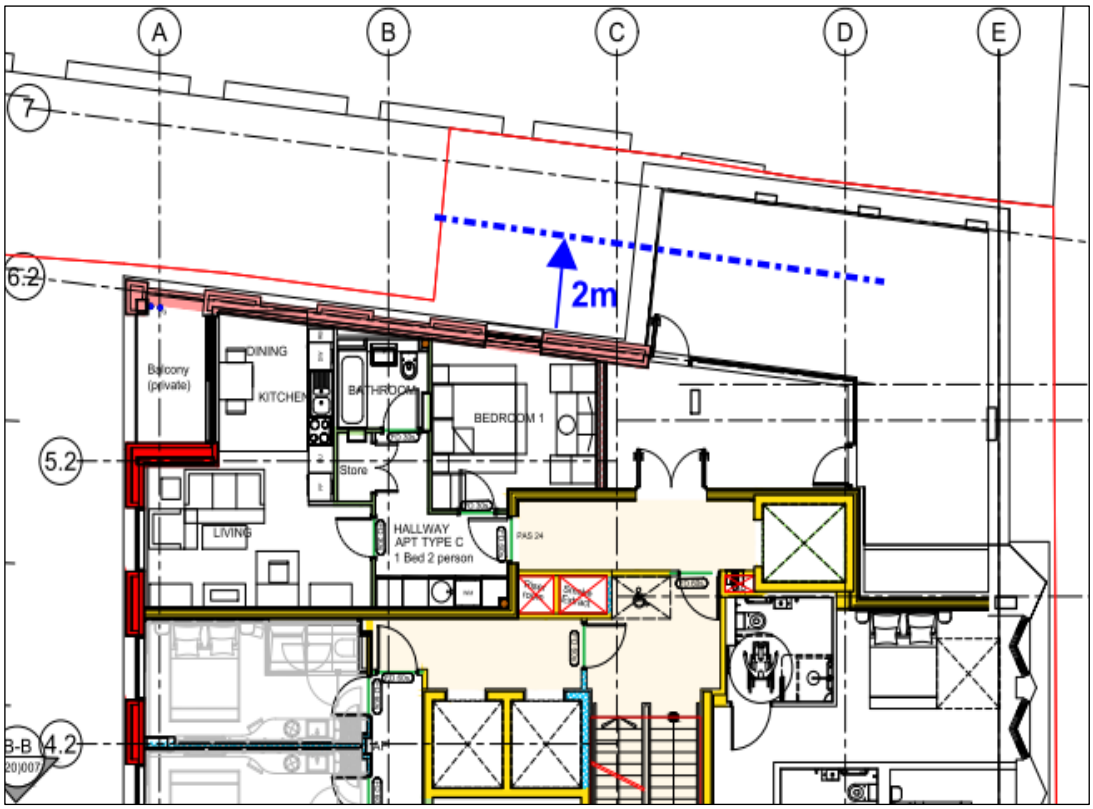
12.20 To the east is Eyre Hill Street; a maintained public highway.

12.21 To the north is a service yard, on the other side of which is an adjacent third party property. In part, the affordable accommodation shares a party wall with the third party property.

12.22 Relevant boundaries for analysis of external fire spread have been marked adjacent to the external walls on the plan that follows.



Relevant Boundaries



Relevant Notional Boundaries 7th floor North

Boundary Analysis

West Elevation

12.23 Ground floor windows to the restaurant are provided with fire curtains, and hotel bedrooms form individual compartments requiring a separating distance of 1m, which is available.

12.24 Upper floor apartments have three windows. The required separating distance is 2m to the relevant boundary and there is 1.3m available.

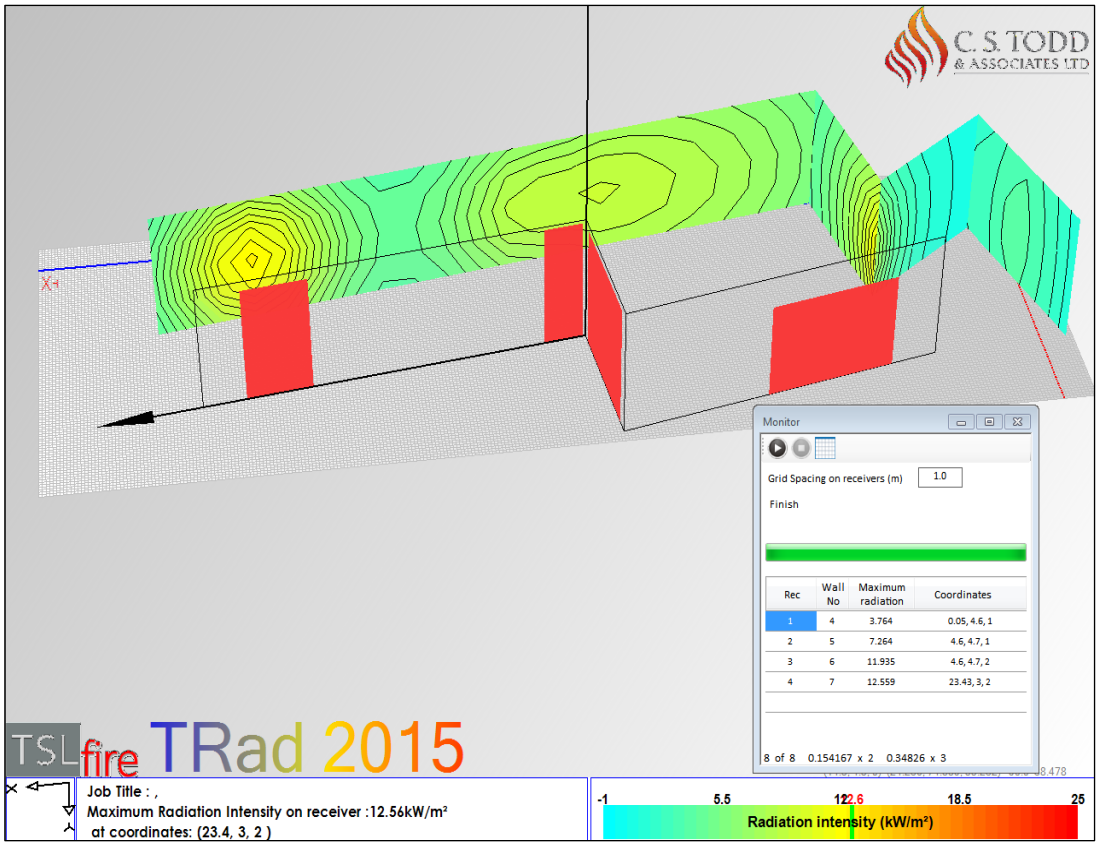
12.25 In line with guidance in ADB, section 2.1.7 of BR 187 allows for the required separating distance to the boundary to be halved, if a correctly designed and installed automatic sprinkler system is provided. Hence, a modified separation distance of 1m is required for the apartments; a distance of 1.3m is available. BR 187 acknowledges that a sprinkler installation will significantly limit the development of the fire so that the fire will not develop to involve the whole of a compartment. This will reduce the hazard of fire spread from a building with the suppression system to an adjacent building.

West Elevation – the required separating distance is halved to 1m by the automatic sprinkler system

South Elevation

12.25 The south elevation has a set-back building, and an adjacent building, both opposite and offset, adding some complexity, and has been modelled, therefore, by using TRad for more accurate analysis.

12.26 The restaurant is the most significant external fire spread risk (bedrooms forming separate compartments). One window of the restaurant to the south is protected by a fire curtain. Using an emitter value of 84kW/m^2, the TRad model calculates that incident radiation on the elevation of an adjacent building does not exceed 12.6kW/m^2 and, hence, there is no significant risk of external fire spread (model output graphic and table below). On bedroom floors, each bedroom may be considered in isolation and only requires a separating distance of 1m, which is easily met.



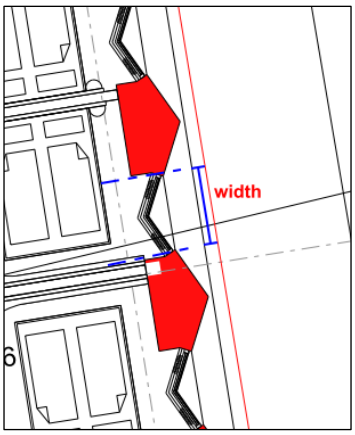
RESULT FROM LATEST ANALYSIS

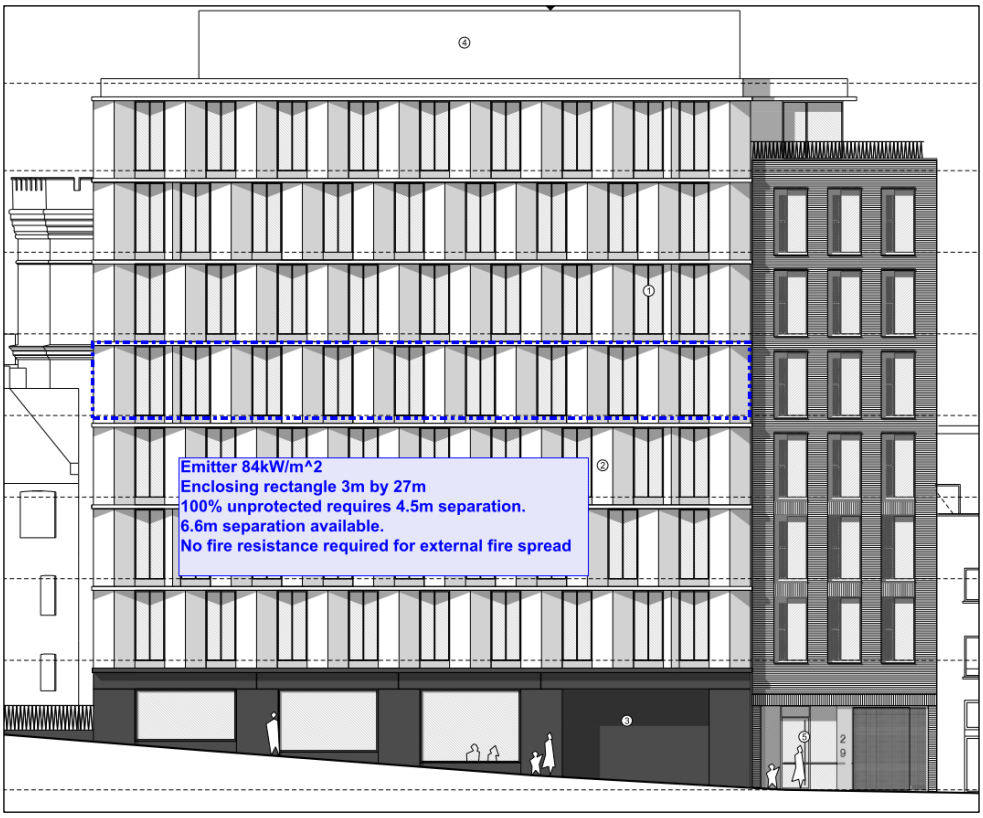
Receiver panel no	Grid spacing	Maximum radiation kW/m²	at location	from Left	from bottom
4	0.94 x 1.0	3.76	(0.05, 4.60, 1.00)	2.83	1.00
5	0.93 x 1.0	7.26	(4.60, 4.70, 1.00)	0.00	1.00
6	0.96 x 1.0	11.93	(4.60, 4.70, 2.00)	4.81	2.00
7	1.0 x 1.0	12.56	(23.43, 3.00, 2.00)	3.01	2.00

East Elevation

12.27 The most challenging external fire spread scenario arises from hotel bedroom floors (bedrooms do not form fire compartments on this floor). The windows are angled so that it is not the area of glazing that is relevant but the area of the opening in the wall (see below).

12.28 BR187 analysis shows that the separation distance for the extent of unprotected openings is adequate (see below) and, consequently, no fire-resisting glazing is required on this elevation.

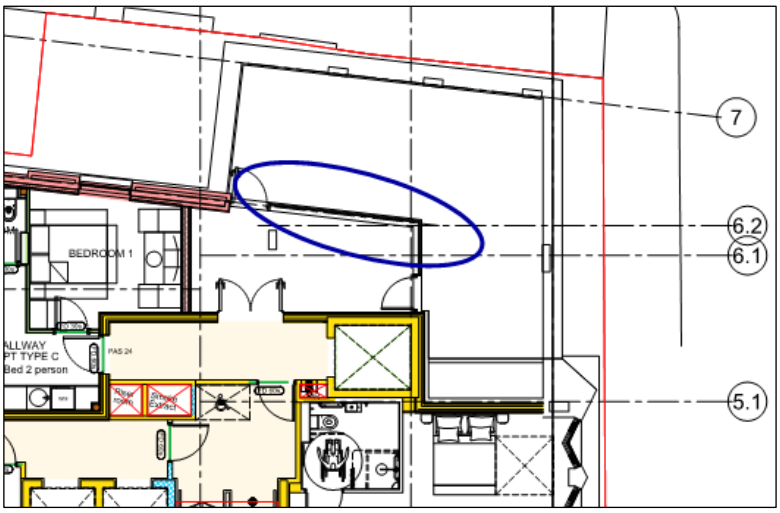




East Elevation

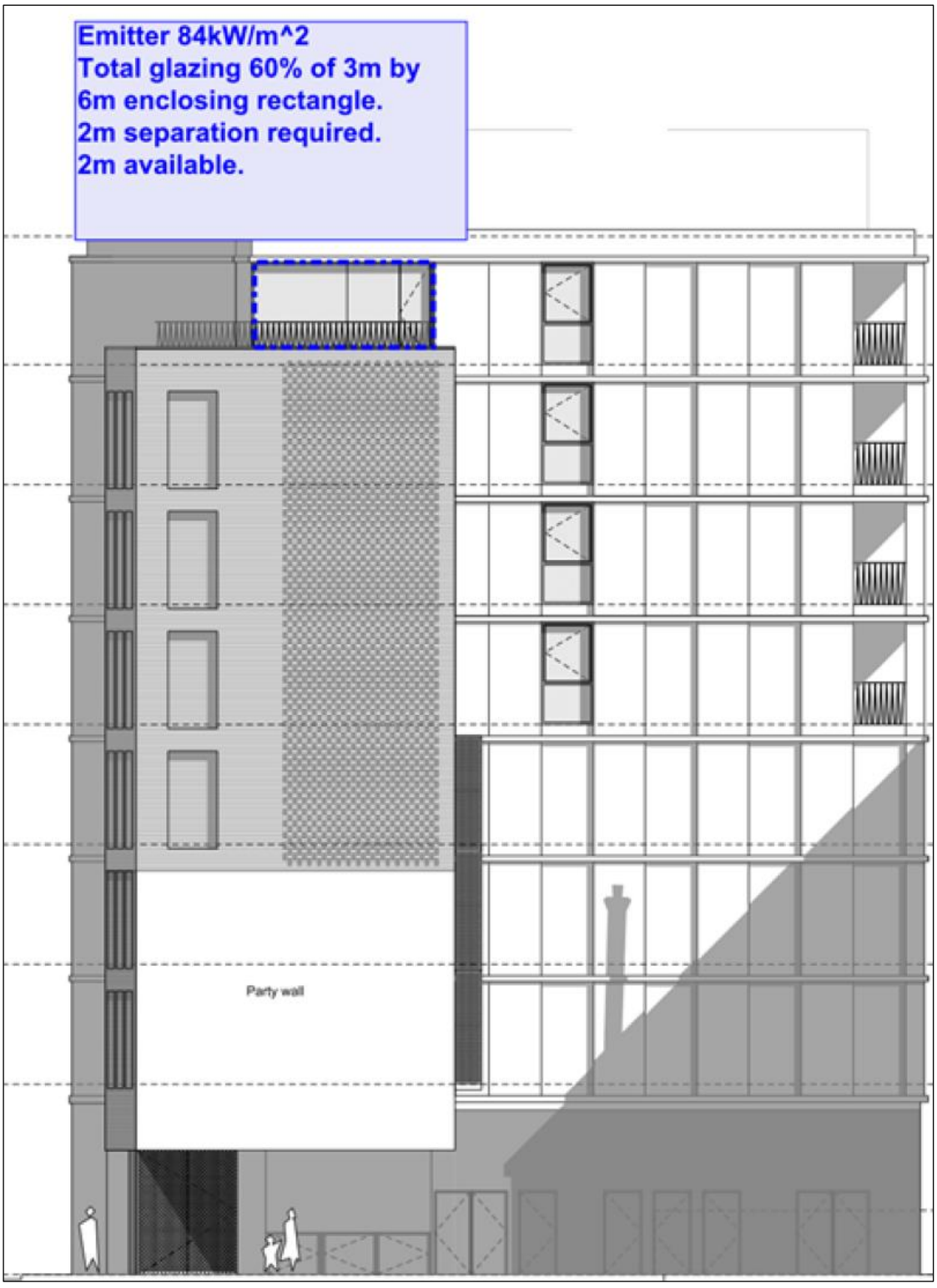
North Elevation

12.29 Unprotected openings are limited to Floors 4 to 7 with Floor 7 providing the most challenging scenario with regard to the glazed entrance room to the outside terrace (shown below).



7th Floor Plan Extract

12.30 BR187 analysis is provided below and shows that there is sufficient separation distance to the relevant notional boundary (2m).



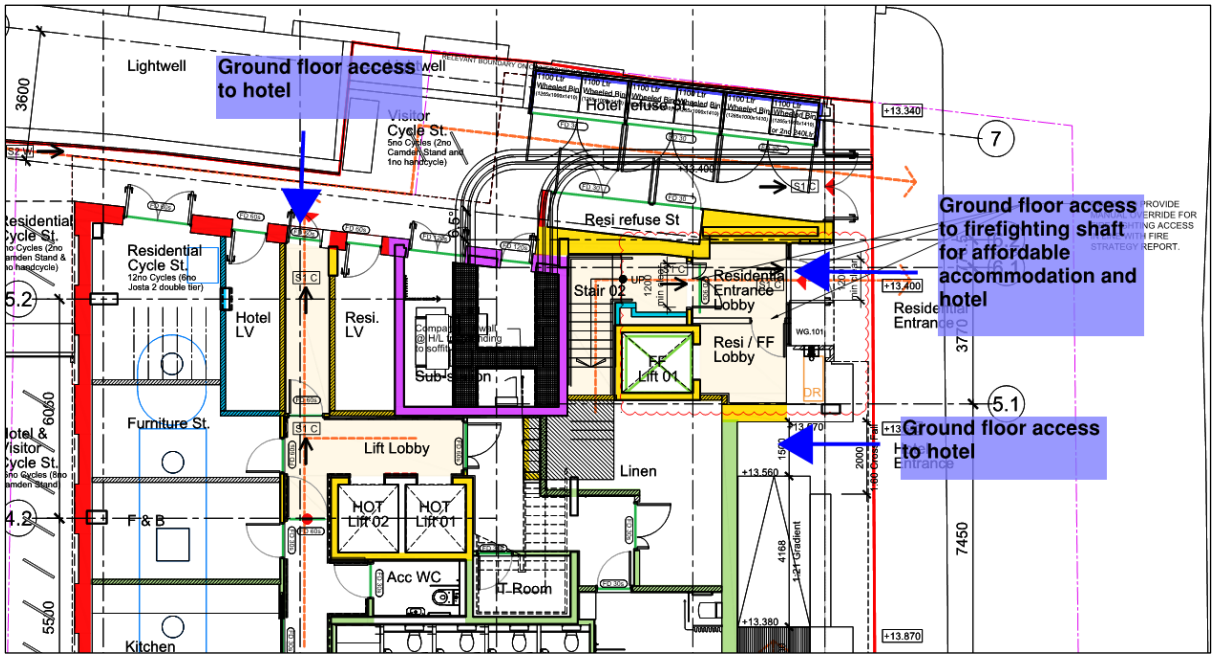
North Elevation - the required separating distance is halved to 1m by the automatic sprinkler system

13. ACCESS AND FACILITIES FOR THE FIRE AND RESCUE SERVICE

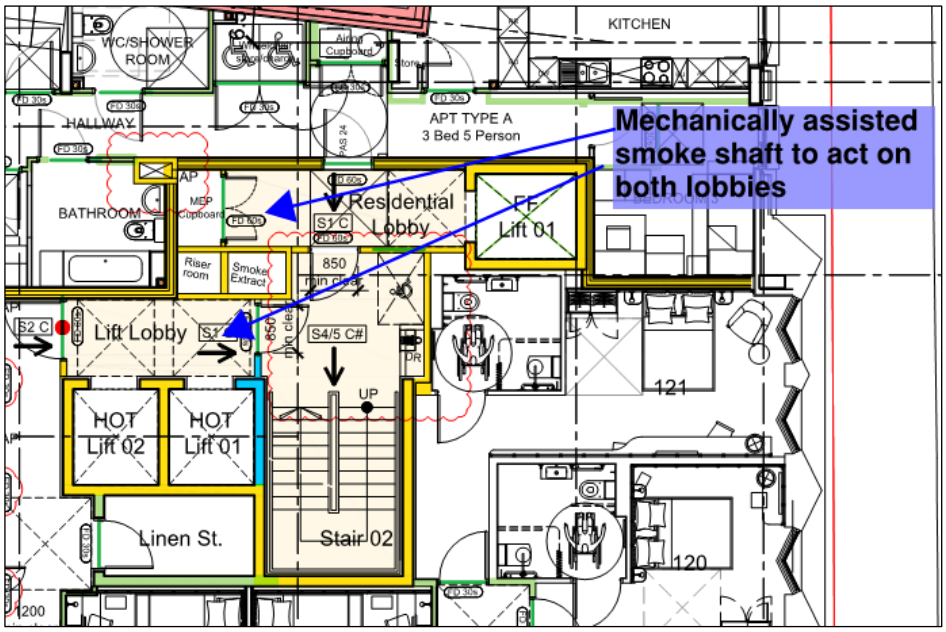
General

(Refer also to Section 7.1 of this report.)

13.1 The building has floors greater than 18m above fire and rescue service access level and will be provided with a fire-fighting shaft. The hotel and affordable accommodation will share the fire-fighting shaft. The fire-fighting stair will be located in the affordable block and be available for day-to-day use by residents. The stair will be available only as an escape route for staff and guests at the hotel. Justification for this arrangement is provided in Section 7 of this report.



Fire-fighting Shaft – Access Level

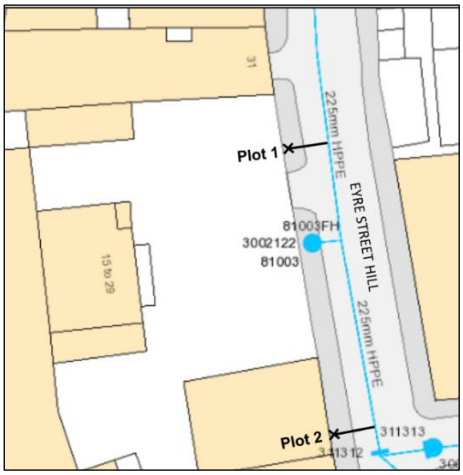


Fire-fighting Shaft - Upper Floor

Rising Main

13.2 It has been agreed with the approved building control body that the outlets for the dry rising fire main will be located within the enclosure of the fire-fighting stair. This is a code compliant arrangement for the apartments, but a variation for the hotel. The variation is necessary due to the shared aspect of the firefighting shaft. As the fire and rescue service will approach the hotel from the residential entrance, the positioning of the dry riser outlets will be intuitive as firefighters will have to pass through the stair to reach the hotel.

13.3 An existing fire is located on the footpath in middle of the site as indicated (blue dot) on the plan below. The hydrant is supplied by a 225mm water main.



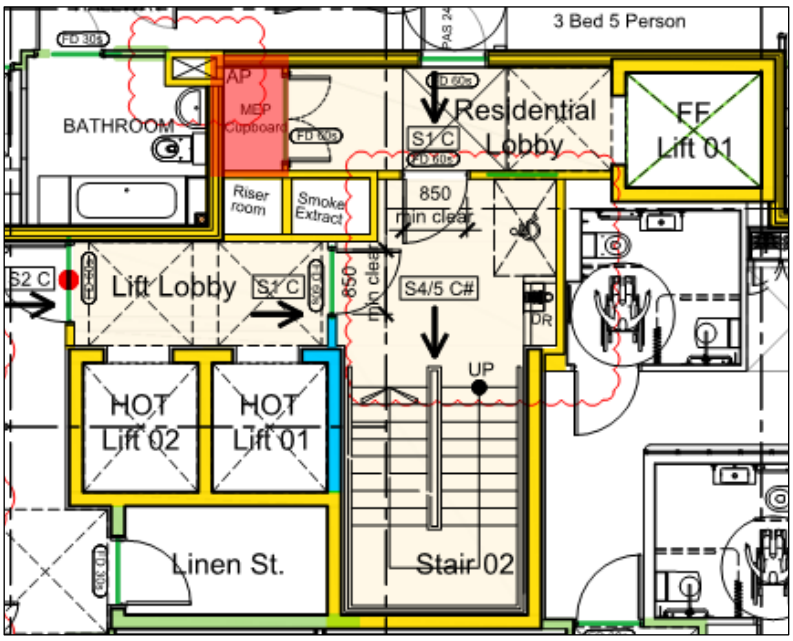
Fire Hydrant Location

Fire-fighting Staircase and Lobby

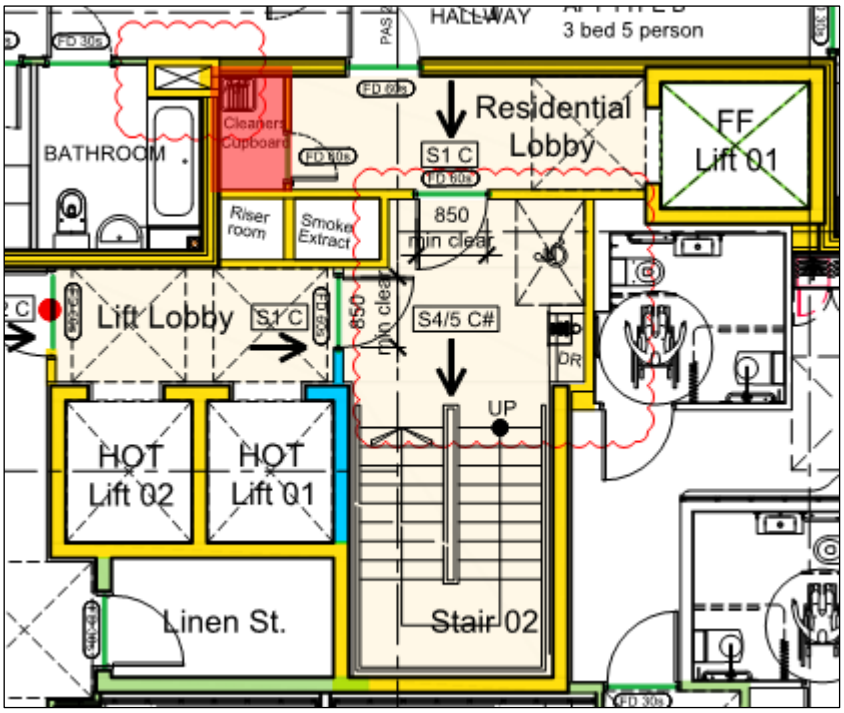
13.3 The fire-fighting staircase and lobbies will be designed in accordance with the principles of Section 21 of BS 9999. Arrangements will be made for the fire and rescue service to gain access to the hotel from the affordable accommodation, and to gain access into the affordable accommodation. As a minimum, this will be via operation of a Gerda Key of a format carried by the fire and rescue service. Means must also be available for hotel duty staff to assist the fire and rescue service gain access to the hotel from the fire-fighting shaft, either by remote operation of locks or other means agreed with the approved building control body. Any electrical locks between the hotel and fire-fighting stair should open when a confirmed fire originates from the hotel.

13.4 The residential firefighting lobby (corridor) will provide access to a small cleaners' cupboard on the fourth floor and a small mechanical, electrical and plumbing (MEP) cupboard on the first floor. This is considered justifiable on the following basis:

- The cupboards are small, in each case only approximately 1.3m^2
- Cupboards will be formed from a 120-minute, fire resisting enclosure with FD60s fire doors.
- Cleaning equipment will be minimal and not include any flammable liquids.
- The MEP cupboard will contain a single piece 1000 litre cold water storage tank with a lift pump and is of low fire risk.
- The likelihood of either of these cupboards being used at the time of a fire call and causing an obstruction is very low.
- The cupboards present significantly less fire risk to the lobbies then the flats opening on to them.



First floor MEP Cupboard – red shading



Fourth floor Cleaners Cupboard – red shading

Fire-fighting Shaft Ventilation

13.5 The fire-fighting shaft will be ventilated by a mechanically-assisted smoke shaft, with smoke vents within each fire-fighting lobby of the hotel and the affordable accommodation at all levels served by the stair. Make-up air will be provided by an automatically-opening vent at the head of the fire-fighting staircase. The system will be automatic in operation, but will be provided with override controls at a suitable point for the fire and rescue service. The system will be designed so that only the relevant lobby is ventilated, i.e. either the affordable accommodation side or the hotel side, being that lobby where smoke was first detected. The louvres to the vent on the unaffected side of the building will remain closed.

13.6 The appointed contractor is responsible for providing a full design specification for the system, together with justifying documents, to the satisfaction of the approving authorities that should include confirmation of the following requirements of BS 9999, namely:

<u>General Requirements</u>

1. The mechanical smoke ventilation system should demonstrate equivalent, or better, conditions in the lobby and stairs than would be provided by a natural shaft conforming to paragraph 27.1.4.2.3 of BS 9999, and as described in BRE Project Report 79204.
2. The design of the mechanical smoke ventilation system should limit pressure differentials so that door opening forces do not exceed 100 N at

the door handle when the system is in operation, taking door closer forces into account.

3. The primary objective of the system should be to maintain smoke-free conditions in the staircase during both means of escape and fire-fighting operations.
4. The route of the exhaust air and the air flow should be determined within the space being ventilated, ensuring that replacement inlet air is provided.
5. The ventilation rate should be decided through an assessment of any specific risks within the building and should be validated through CFD analysis or mathematical calculation.
6. The design and installation of the system should be in accordance with BS 7346-8[26].
7. A power supply in accordance with BS 8519 should be provided to the fans and all actuators and controls.
8. The system should be provided with a standby fan that operates automatically upon failure of the duty fan. Both fans should be in accordance with BS EN 12101-3[27].
9. The stair should be provided with an automatic natural vent as described in 27.1.4.1, Table 21 of BS 9999.

Requirements for Shafts for Mechanical Smoke Extraction Systems

1. The top of the lobby vent should be located as close to the ceiling of the lobby as is practicable, and should be at least as high as the top of the door connecting the lobby to the stairwell.
2. The lobby vents, in the closed position, should either have a minimum fire and smoke resistance performance of 60 minutes and a leakage rate no greater than 200m3/h/m^2, when tested in accordance with BS EN 1366-2[28], or be in accordance with BS EN 12101-8[29].
3. The smoke shaft should be constructed of materials classified as A1 in accordance with BS EN 13501-1: 2007+A1[30], or of materials determined to be non-combustible when tested in accordance with BS 476-4[31], or of any material which, when tested in accordance with BS 476-11[32], does not flame or cause any rise in the temperature on either the centre of the specimen or the furnace thermocouples.

[26] BS 7346-8: 2013. *Components for smoke control systems. Code of practice for planning, design, installation, commissioning and maintenance.*
[27] BS EN 12101-3: 2015. *Smoke and heat control systems. Specification for powered smoke and heat control ventilators (Fans).*
[28] BS EN 1366-2: 2015. *Fire resistance tests for service installations. Fire dampers.*
[29] BS EN 12101-8: 2011. *Smoke and heat control systems. Smoke control dampers.*
[30] BS EN 13501-1: 2007+A1: 2009. *Fire classification of construction products and building elements. Classification using test data from reaction to fire tests.*
[31] BS 476-4: 1970. *Fire tests on building materials and structures. Non-combustibility test for materials.*
[32] BS 476-11: 1982. *Fire tests on building materials and structures. Method for assessing the heat emission from building materials.*

4. Any smoke shaft which penetrates fire compartments should, as a minimum, maintain the same level of fire compartmentation as that which has been breached.
5. No services, other than those relating to the smoke shaft, should be contained within the smoke shaft.
6. Fans should be capable of handling gas temperatures of 300°C for a continuous period of not less than 60 minutes and tested in accordance with BS EN 12101-3.
7. The fans should operate automatically, either on activation of a sprinkler system or by an automatic fire detection system, in accordance with BS 5839-1.
8. The system should have a power supply in accordance with BS 8519.
9. Any ductwork should be fire resisting, maintaining at least 75% of the cross-sectional area of the duct. The fire resistance should be not less than 60 minutes, or equivalent to the fire resistance rating of any compartment boundary through which it passes, whichever is the greater.
10. Where only a single mechanical extract is provided, the fans should be duty/standby fans, as fan failure would result in failure of the system.

Fire-fighting Lift

13.7 The fire-fighting lift installation will be required to conform to the requirements of BS EN 81-72[33], and BS EN 81-1[34] or BS EN 81-2[35], as appropriate to the particular lift site, and to the general requirements of Section 20.4 (and subsections) of BS 9999, including water protection of the lift well.

Vehicle Access

13.8 Fire and rescue service vehicle access for a pumping appliance should be available to within 18m of each dry rising fire main inlet connection point, which should be close to the fire service access points into the building. Access to the inlet connection point will be afforded by Eyre Street Hill.

Emergency Power Supply

13.9 To reduce the risk of the loss of electrical supply to fire protection systems that are required to operate continuously during a fire, a secondary power supply should be provided. This supply should be of sufficient capacity to maintain supplies to all life safety and fire equipment installations. The secondary power system should be designed to operate safely in fire conditions. The means for the provision of a secondary supply should include the overall

[33] BS EN 81-72: 2015. *Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lifts. Firefighters lifts*
[34] BS EN 81-1: 1998+A3:2009. *Safety rules for the construction and installation of lifts. Electric lifts.*
[35] BS EN 81-2: 1998+A3:2009. *Safety rules for the construction and installation of lifts. Hydraulic lifts*

electrical distribution system within the building, and also the power needs for other equipment requiring a secondary power supply.

13.10 To meet the requirements for a secondary power supply, an emergency generator will be provided at the building. Allowance has been made for a diesel operating Genset to serve the firefighting lift, firefighting smoke extract system and sprinkler pumps set. A diesel generator (also known as diesel genset) is the most suitable power source, due to high starting currents for the above equipment. Secondary power directly from the UKPN network is no longer an available option.

13.11 The emergency power supply should meet the recommendations of clause 37.2.3.3 of BS 9999.

Way Finding Signage

13.12 To assist the fire and rescue service to identify each floor in a block of flats with a top storey more than 11m above ground level, floor identification signs and flat indicator signs should be provided.

13.13 The floor identification signs should meet all the following conditions:

1. The signs should be located on every landing of a protected stairway and every protected corridor/lobby (or open access balcony) into which a firefighting lift opens.
2. The text should be in sans serif typeface with a letter height of at least 50mm. The height of the numeral that designates the floor number should be at least 75mm.
3. The signs should be visible from the top step of a firefighting stair and, where possible, from inside a firefighting lift when the lift car doors open.
4. The signs should be mounted between 1.7m and 2m above floor level and, as far as practicable, all the signs should be mounted at the same height.
5. The text should be on a contrasting background, easily legible and readable in low level lighting conditions or when illuminated with a torch.

13.14 The wording used on each floor identification sign should take the form Floor X, with X designating the number of the storey, as intended for reference by residents. The floor number designations should meet all the following conditions:

1. The floor closest to the mean ground level should be designated as either Floor 0 or Ground Floor.
2. Each floor above the ground floor should be numbered sequentially, beginning with Floor 1.
3. A lower ground floor should be designated as either Floor –1 or Lower Ground Floor.

4. Each floor below the ground floor should be numbered sequentially beginning with Floor –1 or Basement 1.

13.15 All floor identification signs should be supplemented by flat indicator signs, which provide information relating to the flats accessed on each storey. The flat indicator signs should meet all the following conditions:

1. The signs should be sited immediately below the floor identification signs, such that the top edge of the sign is no more than 50mm below the bottom edge of the floor identification sign.
2. The wording should take the form Flats X–Y, with the lowest flat number first.
3. The text should be in sans serif typeface with a letter height of at least half that of the floor indicator sign.
4. The wording should be supplemented by arrows when flats are in more than one direction.
5. The text and arrows should be on a contrasting background, easily legible and readable in low level lighting conditions or when illuminated with a torch.

14. COMMISSIONING AND TESTING

14.1 All equipment and fire safety systems should, where appropriate, be subject to testing and commissioning, to ensure that they operate correctly in accordance with the relevant design or performance standards, as well as the provisions of this fire strategy. At the completion of commissioning, it also should be confirmed that all relevant documentation has been handed over to the building operator.

14.2 The organization or person responsible for commissioning the system might, or might not, be the same organization that designed and/or installed the system, and the responsibility for commissioning needs to be clearly defined prior to the start of the installation work.

14.3 It should be noted that it is not, in general, the responsibility of the commissioning engineer to verify compliance of the design, or of the installation/equipment. In general, the responsibility of the commissioning engineer is to verify that the system/equipment operates correctly in the manner designed and that the installation workmanship is generally of an adequate standard.

14.4 The system/equipment should be commissioned by a competent person who has access to the requirements of the designer (i.e. the system specification) and any other relevant documentation or drawings. At commissioning, the entire system/equipment should be inspected and tested to ensure that it operates satisfactorily.

15. DOCUMENTATION

15.1 It should be ensured that adequate records and other documentation are provided to the building operators to verify compliance with this fire strategy and the standards referenced.

15.2 Generally, documentation should be provided for design, installation and commissioning of fire systems or systems that must respond or have specified performance in a fire condition, as well as to certify the performance of products used in the construction and fitting out of the building.

15.3 Where appropriate, operations and maintenance information with respect to fire safety systems and equipment should also be provided to the building operators.

15.4 The responsibility for provision of the documentation will invariably rest with a number of companies, suppliers and sub-contractors. At commissioning, it should be ensured either, that all appropriate documentation has been provided to the building operators, or their representative, or that any missing documentation is identified for appropriate action.

15.5 Particular importance needs to be attached to the preparation and accuracy of “as fitted” drawings and operation and maintenance manuals. The manuals should be adequately specific to the system/equipment. Without these drawings and manuals, maintenance or future modification of the system will be difficult.

15.6 Provision of documentation and records supporting this fire strategy is a requirement of Regulation 38 of the Building Regulations 2010. These documents and records must be available to the Responsible Person to ensure the correct basis for meeting the requirements of the FSO.

16. MANAGEMENT

(Note: see also Section 7.1 of this report.)

16.1 It has been assumed that the suitable fire safety policies and procedures will apply here, and that a suitable staff training regime will be implemented for employees.

16.2 Employers, building operators, management companies and owners may all be a 'Responsible Person' under the FSO and have management or other responsibilities at, or for, the building. Under the FSO, an employer must complete a fire risk assessment, record the significant findings, complete any action points arising from the assessment and keep the assessment under review.

16.3 BS 9999 provides comprehensive guidance on managing fire safety at a building. Recommendations are provided for:

- Planning for changes in risk profile.
- Resources and authority.
- Staffing levels.
- Staff training.
- Work control.
- Communication procedures.
- Maintenance and testing of fire safety systems.
- Liaison with the fire and rescue service.
- Contingency planning.

16.4 Management levels should be those recommended in BS 9999. No reliance has been placed in developing this fire strategy on achieving higher levels of management to those reasonably compatible with the building and occupancy.

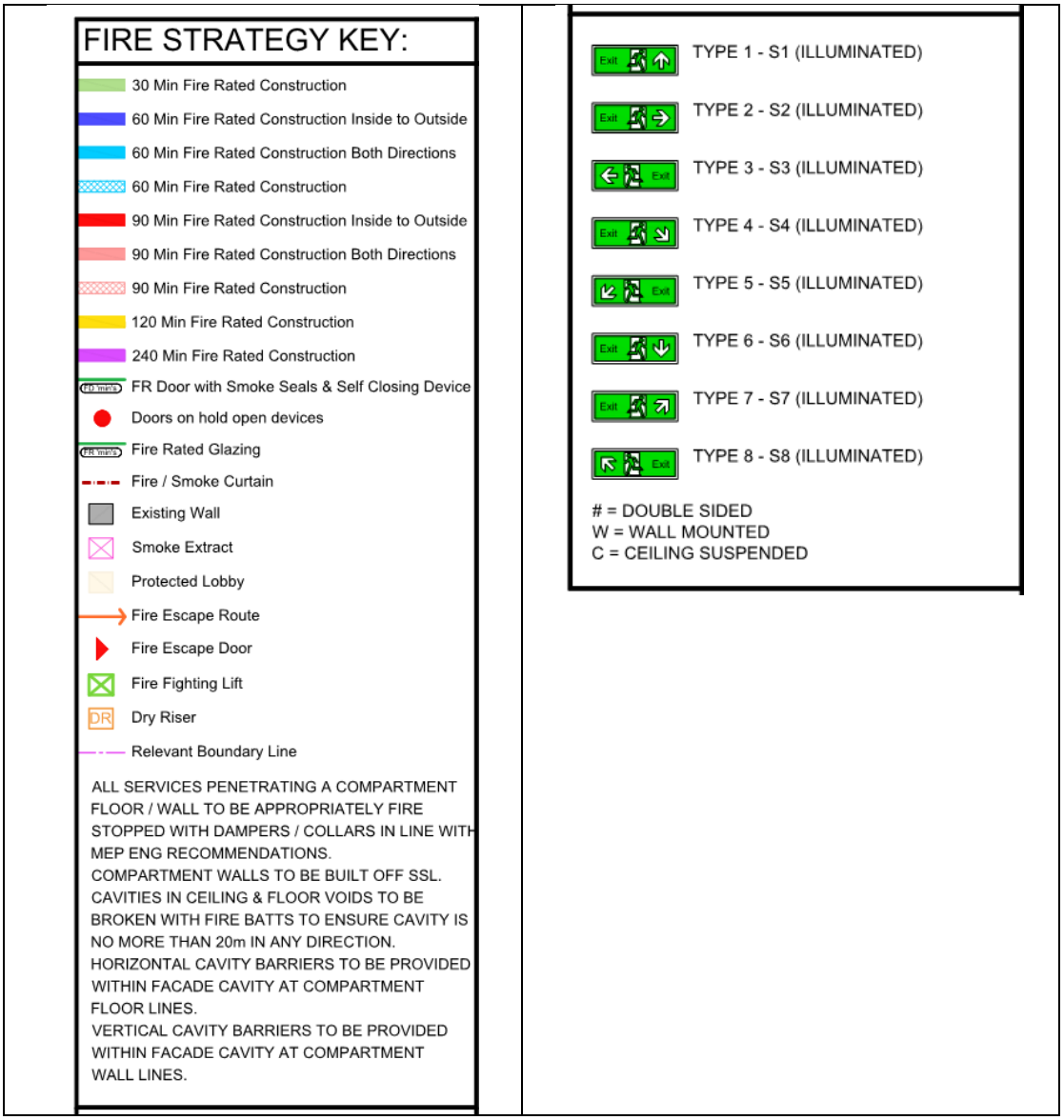
16.5 This fire strategy should be used as the basis to develop a fire evacuation plan. The evacuation plan should be included in hotel staff training and the information provided to tenants in the affordable accommodation. The evacuation plan should address the special fire safety features in the building. The document should also be used to ensure that the Responsible Person for both the hotel and affordable accommodation fully understand the fire safety features in the building and any additional testing or maintenance requirements that are required because of the fire strategy. This should include an understanding of the cause and effect of the fire alarm and the systems controlled by it.

ANNEX A

ARCHITECTS' STAGE 4 FIRE STRATEGY PLANS

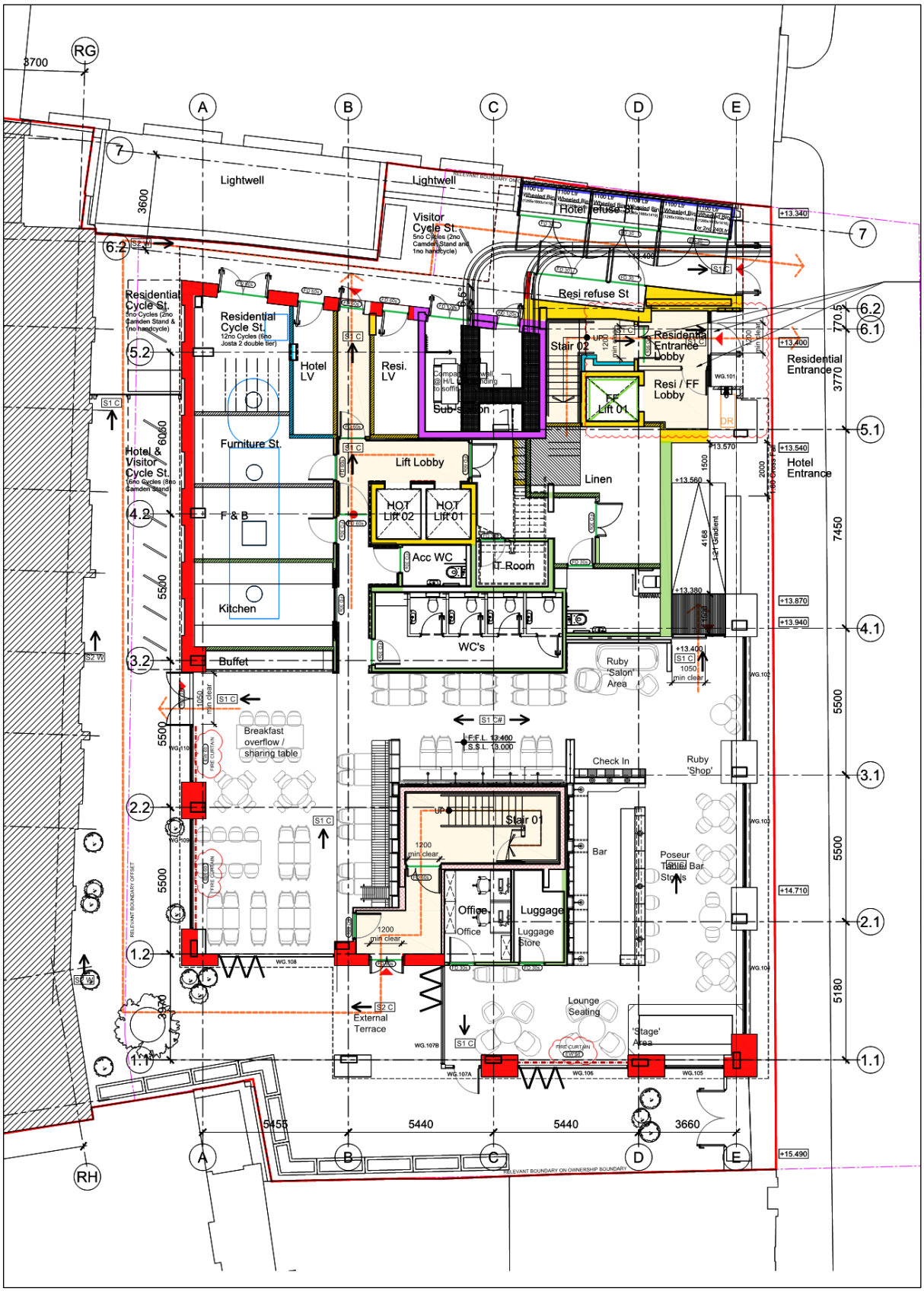
(Extracts from plans)

Plan Key



Plan Table

Fire Strategy Drawing Number:	Floor
LRW_8060_L(42)110 G	Ground floor
LRW_8060_L(42)111 F	First floor
LRW_8060_L(42)112 F	Second and third floors
LRW_8060_L(42)116 D	Fourth floor
LRW_8060_L(42)113 G	Fifth and sixth floors
LRW_8060_L(42)114 G	Seventh floor



Ground Floor


RAGGED SCHOOL OFFICE
(REFER TO LRW LJ0000 SERIES DWGS)
Residential Lobby
Lift Lobby
HOT Lift 02
HOT Lift 01
Linen St.
Stair 02
Stair 01
FF Lift 01
APT TYPE A
3 Bed 5 Person
BEDROOM 1
BEDROOM 2
BEDROOM 3
KITCHEN
LIVING
DINING
BATHROOM
HALLWAY
WC/SHOWER ROOM
Balcony (private)
5200
3700
2800
2800
3700
7300.5
5455
5440
5440
3660

First Floor

Second and Third Floors

Fourth Floor

Fifth & Sixth Floors

Seventh Floor