



Victoria Point

RIBA Stage 2 Fire Strategy Report

Written Record

Revision	Description	Date	Author	Checked by	Authorised by
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1. Introduction

- 1.1.1. Semper Fire Engineering has prepared this RIBA Stage 2 Fire Strategy on behalf of Empiric Student Property in support of the redevelopment and extension of Victoria Point located in Manchester.
- 1.1.2. The report outlines the fire safety provisions necessary for compliance with the functional requirements of the Building Regulations 2010 (as amended). It has been prepared to support the forthcoming planning application and sets down information consistent with RIBA Stage 2. The measures recommended in this report are not exhaustive and are subject to change as the scheme develops.
- 1.1.3. The fire safety requirements of the Building Regulations can be satisfied by following the relevant guidance. However, guidance is only available for some common building situations, and it is acknowledged that there are alternative methods of complying with the Building Regulations.
- 1.1.4. Importantly, the assessment of fire safety in existing buildings must balance the requirements for life safety with the existing constraints. Exclusively following the prescriptive guidance can be impractical and some variation of the provisions is considered appropriate.
- 1.1.5. This strategy therefore considers the total fire safety package within the scheme to provide a functional and practical solution to fire safety. The strategy draws on prescriptive standards as a basis for design; however, it is only through utilising a combination of established guidance, fire engineering, and technical experience that a satisfactory standard of fire safety can be achieved, given the complexity and existing nature of the scheme from a Building Regulations standpoint.

1.2. Project Stakeholders

- 1.2.1. Design coordination has been progressed with the following design team.

Discipline	Company
Client	Empiric Student Property
Project Manager	Quartz Projects Service
Architect	Bell Phillips Architects + 5Plus
MEP Engineers	Atelier Ten

Table 1: Project Design Team

2. Fire Safety Design Approach

2.1. Applicable Legislation

2.1.1. The proposed works are defined as “building work” in the Building Regulations 2010 (as amended). Therefore, in terms of Fire Safety, the works are required to comply with the functional requirements written in Parts B1 to B5 of Schedule 1 of the Building Regulations 2010 (as amended) as follows:

- B1 – Provision of adequate means of warning and escape.
- B2 – Control of internal fire spread; (internal).
- B3 – Control of internal fire spread; (structure).
- B4 – Control of external fire spread.
- B5 – Provision of access and facilities for the fire service.

2.2. Building Safety Act

2.2.1. Two of the five blocks will exceed 18 m and will include shared accommodation within what is defined as university halls. Given the shared services strategy, the whole scheme it therefore will qualify as a ‘Higher-Risk Building’ under the Building Safety Act.

2.2.2. As a result, the design and construction will follow the newly established ‘gateway’ process, which will be overseen by the Building Safety Regulator (BSR).

2.3. Regulation 38

2.3.1. Regulation 38 of the Building Regulations necessitates that the fire safety information for the building shall be given to the Responsible Person at the completion of the project or when the buildings are first occupied.

2.4. CDM

2.4.1. The Construction (Design and Management) Regulations 2015 (CDM) are applicable to the design and construction stages of this project. CDM aims to integrate health and safety into the management of the project and to encourage those involved to work together to:

- Improve the planning and management of projects from the very start;
- Identify hazards early on, so they can be eliminated or reduced at the design or planning stage and the remaining risks can be properly managed;
- Target effort where it can do the best in terms of health and safety; and
- Discourage unnecessary bureaucracy.

2.5. Design Guidance

2.5.1. The fire strategy has been developed primarily using the guidance given within BS 9991 and BS 9999. These standards provide a flexible approach for fire safety design through the adoption of a structured risk-based approach. The risk-based approach reflects with greater accuracy the varying physical and human factors associated with individual building designs in a way that other more traditional design documents do not.

2.5.2. Where a particular feature, arrangement or area of the project lies outside the recommendations of BS 9999, an advanced fire-engineered solution will be produced. Any

such solution will be based upon current guidance, engineering practice and information available at the time of writing. It should be noted that any fire-engineered solution may not be valid if the design criteria etc. on which it is based are altered. Such solutions will follow the formal framework outlined within BS 7974.

2.6. Fire Safety Management

2.6.1. This report is primarily concerned with Building Regulations compliance and as such, fire safety management is not explicitly addressed. However, the measures detailed rely on a suitable level of maintenance and fire safety management being maintained during the life of the building, in accordance with the Regulatory Reform (Fire Safety) Order 2005 (RRO). Further details on what constitutes a reasonable level of fire safety management and how it can be achieved are provided in BS 9997 and Section 4 of BS 9999.

2.7. Property Protection

2.7.1. Additional measures may be required by the client or building’s insurer for property protection and/or business continuity purposes. This is outside the scope of this report which is primarily concerned with planning and compliance with the functional requirements of Part B of the Building Regulations 2010 (as amended).

2.8. Materials and Workmanship

2.8.1. It has been assumed that all building work is carried out in accordance with Regulation 7 of the Building Regulations. Therefore, to ensure that the proposed fire safety systems detailed within this report achieve the appropriate fire performance, it is crucial that all products, components, materials, structures relating to the fire strategy are installed using competent companies/people and, where applicable, third-party accreditation/certification is provided.

2.9. Consultation

2.9.1. At the time of writing, preliminary consultation has taken place with the Building Control Authority in their capacity as advisors. Consultation will commence with the BSR and Fire Authority through the subsequent design stages.

2.10. Document Limitations

2.10.1. This report does not represent a design or specification; it is a series of principle recommendations that others may consider and relate to the design of the scheme as appropriate. The information contained herein is strategic and does not address detailed aspects of design, such as construction details.

2.10.2. Diagrams incorporated into this document are illustrative, intended to convey aspects of fire safety design and do not necessarily reflect the latest architectural drawings. The diagrams are not a substitute for the architectural general arrangement drawings or the detailed M&E drawings or specifications, which should be referred to in conjunction with this report.

2.11. Future Modification

2.11.1. Any material changes, or alterations to the measures outlined should be reviewed by a competent party to ensure the underpinning principles are not compromised.

3. Building Design

3.1. Project Description

3.1.1. The project involves the redevelopment and extension of six existing student accommodation blocks located in Manchester. The site is opposite Victoria Baths which is a Grade II listed building. Figure 1 illustrates the existing site.

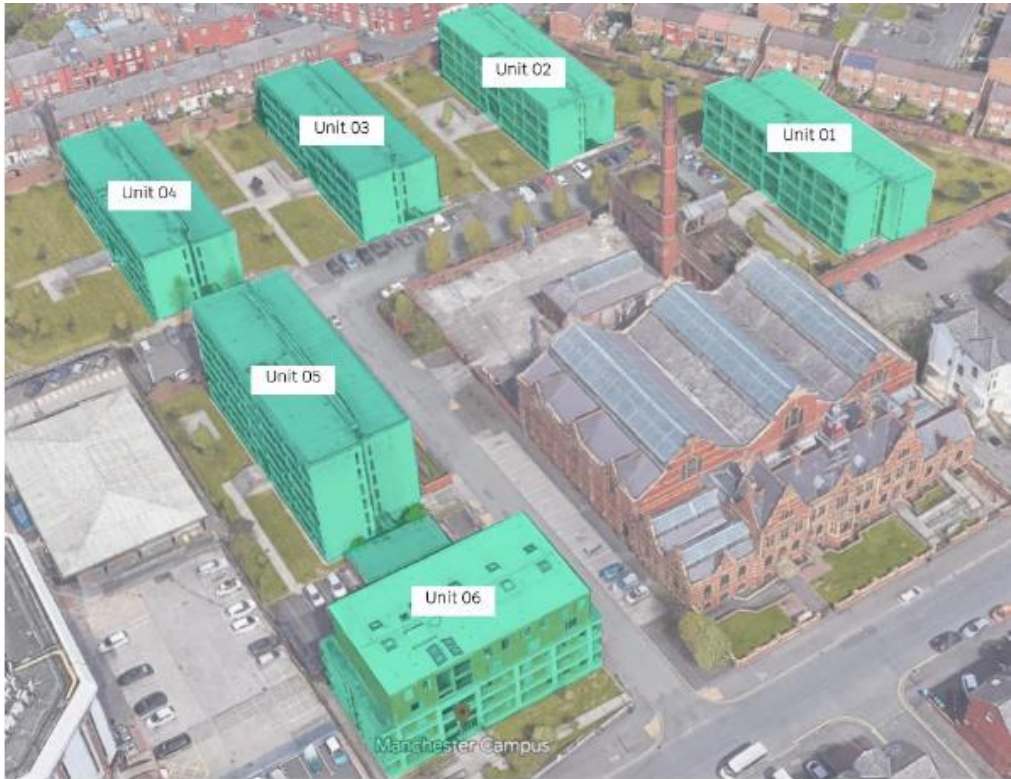


Figure 1: Existing Site

- 3.1.2. Block 1 will be refurbished and extended to the north. Blocks 2 and 3 will each be provided with a ‘bookend’ extension to the south-east. Both blocks will also undergo internal remodelling.
- 3.1.3. Block 4 will undergo a complete redevelopment which will see an increase to the height and an extension to the current building.
- 3.1.4. Blocks 5 and 6 will be combined, forming one block known as Block 5. They will be connected via a common residential corridor and will provide additional student accommodation rooms. The height of the block will be increased to above 30 m.
- 3.1.5. All five blocks will comprise a basement containing study rooms, bike storage, plant and ancillary accommodation.
- 3.1.6. The respective ground floors will comprise entrance lobby, amenity accommodation and student accommodation. The remaining floors throughout all blocks will consist of student accommodation studios and apartments.
- 3.1.7. Figure 2 illustrates the proposed site plan.

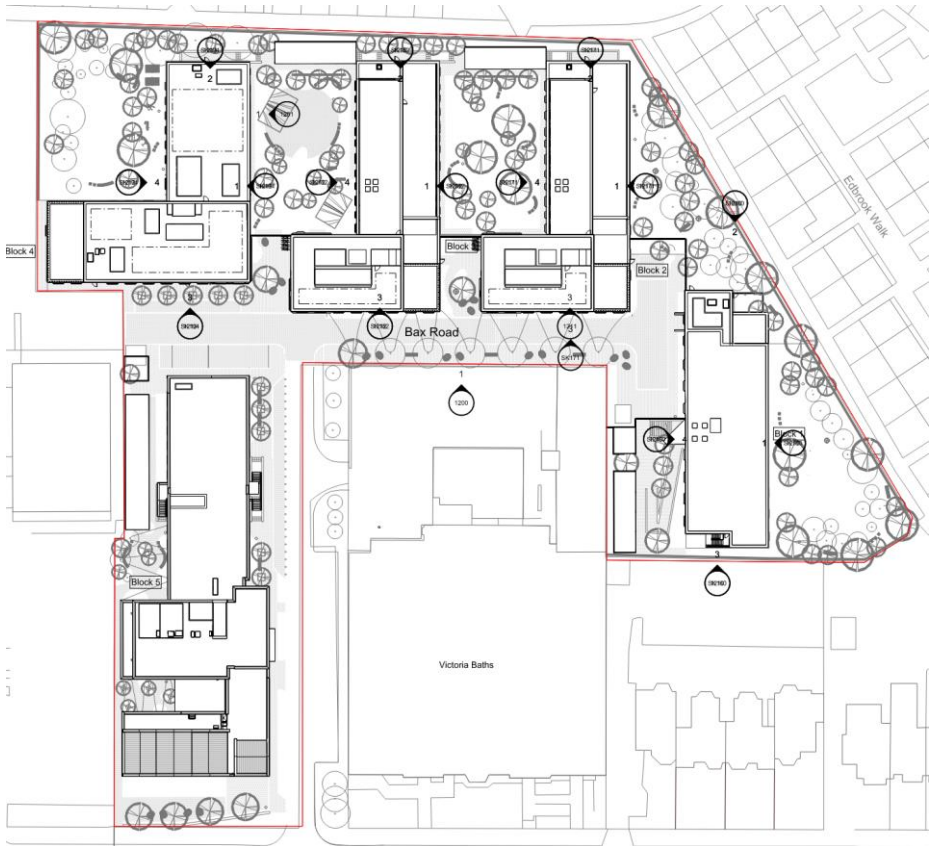


Figure 2: Proposed Site Plan

3.2. Building Height

3.2.1. The respective building height is measured from the lowest adjacent ground floor to the uppermost occupied storey. **Error! Reference source not found.** below shows the corresponding height for each proposed block that is located within the site.

	Height to Top Storey (m)	Number of Storeys
Block 1	11 m	3
Block 2	17.1 m	5
Block 3	17.1 m	5
Block 4	27 m	7
Block 5	35.3 m	11

Table 2: Respective Blocks Height

3.3. Design Approach

- 3.3.1. There are two primary approaches to designing student residential accommodation from a fire engineering standpoint. The accommodation can be classified as institutional, or residential.
- 3.3.2. Victoria Point will be designed using the residential model, as it allows for more flexibility and easier long-term management. This must be balanced against additional compartmentation and increased smoke control provisions.

4. Package of Fire Safety Measures

4.1. Automatic Fire Detection & Alarm System

- 4.1.1. All studio rooms will be provided with a Category LD1 fire detection and alarm system in accordance with BS 5839-6.
- 4.1.2. The ground floor amenity accommodation and basement will be provided with a Category L2 fire detection and alarm system in accordance with BS 5839-1.

4.2. Smoke Control

- 4.2.1. Blocks 1-4 will be provided with a 1.5 m² AOV at the end of the corridors designed in accordance with EN 12101-2.
- 4.2.2. A 1.0 m² AOV will be provided at the top of all stairs. Override controls should be provided at ground and the top floor.
- 4.2.3. A 0.8 m² mechanical smoke ventilation shaft will be provided within the corridors of Block 5. The system will be designed in accordance with BS 9991 Appendix A, and the Smoke Association Guide Revision 3.1.
- 4.2.4. A 1.5 m² AOV will be located at the end of the corridor of Block 5 to provide replacement air during the event of a fire and be designed in accordance with EN 12101-2.

4.3. Basement Smoke Control

- 4.3.1. The basement smoke control will not be altered from the existing strategy, where breakout panels/glazing is provided at the top of each room.

4.4. Automatic Fire Suppression

- 4.4.1. A Category 4 sprinkler system designed in accordance with BS 9251: 2021 will be provided throughout each block.
- 4.4.2. Sprinklers protection will be provided throughout the basement in accordance with EN 12845. This system can be used to supply the residential sprinklers, offering additional redundancy with respect to water capacity, power supplies and pump provision.

4.5. Dry Rising Mains

- 4.5.1. Dry rising mains will be located within the firefighting stairs of Blocks 4 and 5 and be designed in accordance with BS 9990.

4.6. Emergency Lighting

- 4.6.1. Emergency lighting should be installed in accordance with the relevant parts to BS 5266-1.

4.7. Emergency Signage

- 4.7.1. Emergency signage should be provided as per BS ISO 3864-1 and BS 5499-4.

4.8. Wayfinding Signage

- 4.8.1. Wayfinding signage should be provided to assist the fire service to identify the exact location of a fire during the event of a fire.

4.9. Firefighters Lifts

- 4.9.1. Blocks 4 and 5 will be provided with a firefighting/passenger lift, which will be located within the protected lobby. The respective lifts will be designed in accordance with EN 81-72.

4.10. Evacuation Lifts

- 4.10.1. Blocks 4 and 5 will be provided with a passenger/evacuation lift, which is located within the firefighting lobby and designed in accordance with Annex G of BS 9999.

4.11. Emergency Power Supplies

- 4.11.1. Power supplies to emergency and life safety equipment should comply with BS 8519.

5. Means of Escape

5.1. Escape Strategy

- 5.1.1. In an event of a fire, only the occupants that have been directly affected by the fire should evacuate the building. Nevertheless, if other occupants decide to evacuate, the common corridors leading to the escape stairs are reasonably protected which allows them to do so.
- 5.1.2. Occupants within the amenity accommodation on the ground floor and basement should evacuate simultaneously if the alarm is raised.

5.2. Residential Travel Distances

- 5.2.1. BS 9991 sets down the maximum travel distances that is acceptable within residential buildings, which is reflected in Table 4 below based on the sprinkler provisions applied.

Area	One Direction (m)	Two Directions (m)
Common Residential Corridors	15 m	60 m
Studio Apartment	9 m	-
Internal Apartment Corridor	9 m	

Table 3: Residential Maximum Travel Distances

5.3. Non-Residential Travel Distances

- 5.3.1. The scheme shall be designed to meet the travel distance recommendations outlined within BS 9999. The travel distances are based on the relevant risk profile accounting for sprinkler protection where applicable, this is illustrated in Table 4.

Area	Risk Profile	One Direction (m)	Two Directions (m)
Amenity Accommodation	A2	15 m	37 m
Plant/Ancillary	A2	15 m	37 m

Table 4: Non-Residential Travel Distances

Notes:

1. In accordance with BS 9999, where the layout is unknown the direct distances should be used, which is 1/3 less than the actual distance.

5.4. Horizontal Means of Escape

- 5.4.1. The minimum storey exit width to cater unassisted access is 850 mm. The absolute minimum width the exit can be is 800 mm.
- 5.4.2. Storey exits are measured between the door leaf and the door stop.

5.5. Vertical Means of Escape

- 5.5.1. All blocks will have a minimum of two escape stairs available to occupants in the event of a fire. Each staircase leads directly to the ground floor where the final exit will be located.
- 5.5.2. The minimum width of the common escape stair can be no less than 1000 mm, where the absolute minimum width for the firefighting stairs can be no less than 1100 mm.
- 5.5.3. Stair width is measured between the walls or balustrades. Handrails may encroach up to 100 mm on either side of the stair.

5.6. Doors and Escape Corridors

- 5.6.1. In general, doors on escape routes, including the external gates (whether the door is a fire door or not) should not be fitted with a lock, latch, or bolt fastening, or be fitted with simple fastenings that can be readily operated from the side approached by people making an escape.
- 5.6.2. If electronic access controls are provided to doors/gates they should be failsafe open and have a green break glass override on the escape side and be linked to the fire alarm in accordance with BS 7273-4.
- 5.6.3. The final exit door should be fitted with panic hardware in accordance with BS EN 1125.
- 5.6.4. Electrically powered locks should return to the unlocked position on operation of the AFD system, loss of power and/or activation of a manual door release unit (Type A – BS EN 54-11).

5.7. Disable Refugee

- 5.7.1. Disabled refugees will be located within the lobbies that are associated with each stair. The minimum refugee size will be 900 x 1400 mm and be clear of the escape routes.

5.8. Final Exits from Stairs

- 5.8.1. In accordance with BS 9991, all final exits from escape stairs should directly discharge to the outside of the building via a protected route.
- 5.8.2. The final exits from the stairs should maintain the width of the stairs leading to it and discharge directly to a place of ultimate safety.
- 5.8.3. **Error! Reference source not found.** and Figure 4 illustrates the final exit located within the corresponding blocks.



Figure 3: Ground Floor Final Exit



Figure 4: Basement Final Exit (Block 2 - 3)

6. Internal Fire Spread (Linings)

6.1. Wall and Ceiling Linings

6.1.1. All wall and ceiling linings should meet the relevant classifications given in Table 5 of BS 9999 (extracted in Table 5).

Location	European Class ²
Small rooms ¹ of area not more than: a) 4 m ² in residential accommodation b) 30 m ² in non-residential accommodation	D-s3, d2
Other rooms ²	C-s3, d2
Other circulation spaces, including the common areas of blocks of accommodations.	B-s3, d2

Table 5: Minimum Surface Spread of Flame Classifications

Notes

1. BS 9999 defines a "room" as "an enclosed space within a building that is not used solely as a circulation space. The term includes not only conventional rooms, but also cupboards that are not fittings and large spaces such as warehouses. The term does not include voids such as ducts, ceiling voids and roof spaces."
2. When a classification includes 's3, d2', this means that there is no limit set for smoke production and/or flaming droplets/particles.

7. Internal Fire Spread (Structure)

7.1. Fire Resisting Construction

7.1.1 Load bearing elements of the structure relates to the following:

- Beams
- Structural Frame
- Columns
- Load Bearing Walls
- Floor Structure

7.1.2 BS 9991 outlines the minimum required fire resistance periods required for elements of structure, based on the building height and the ventilation conditions. Based on the sprinkler provisions, Blocks 1-4 will have a standard fire resistance of 60 minutes and Block 5 will have a standard fire resistance of 120 minutes.

7.1.3 Each floor throughout all blocks will be designed as a compartment floor and have a fire resistance of 60 minutes.

7.1.4 Where apartments are perpendicular to one another, a 60-minute compartment wall should be provided and extend 1.5 m to mitigate the possibility of external fire spread from one apartment to another.

7.2. Compartmentation

7.2.1. Table 6 sets down typical compartmentation provisions for the scheme.

Area	Minutes (REI)
Substation	240
Firefighting Shaft	120
Electrical/Life Safety Riser	120
Protected Lobby	60
Stairs and lift	60
Between apartments	60
Between apartments and corridors	60
Compartment Floors	60/120
Service risers / refuse chutes	60
Internal room corridors	30

Table 6: Compartmentation Previsions

7.2.2. Figure 5 below illustrates the typical floor compartmentation for this scheme.

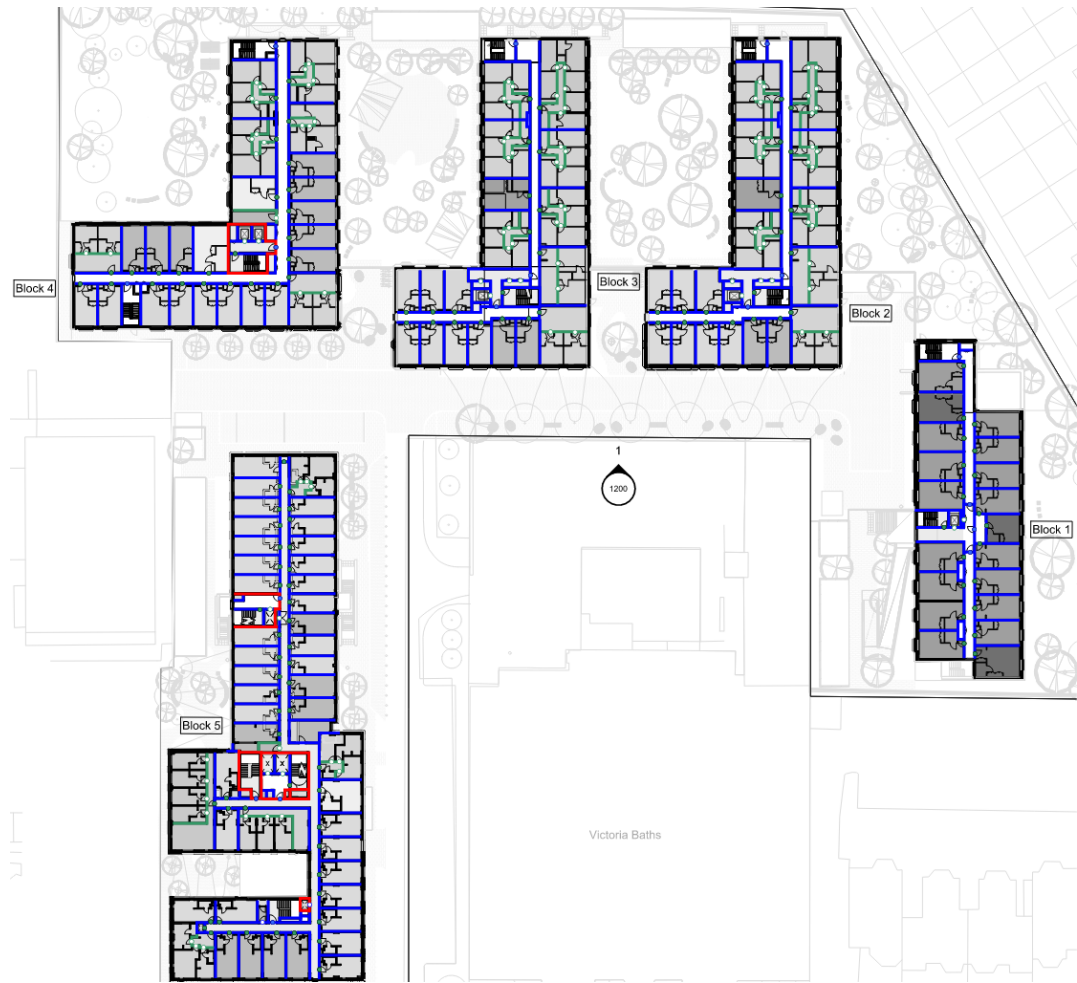


Figure 5: Typical Compartmentation (Red = 120 Minutes, Blue = 60 Minutes, Green = 30 Minutes.)

7.3. Fire Doors

7.3.1. Table 7 sets down the standard of fire rated doors to be provided throughout the scheme.

Door Location	Door Rating (mins) ¹
Protected lobbies	E60S
Plant and refuse stores	E60S
Apartments	E30S
Stair	E30S/E60S
Smoke Shafts	E30S/E60S
Service risers	E30/E60
Internal apartment doors	E30

Table 7: Fire Door Rating

7.4. Concealed Spaces (Cavities)

- 7.4.1. Cavity barriers should be provided to sub-divide any extensive cavities inside the building, e.g. within floor and ceiling voids and in the external walls. These should typically be at 20 m centres where the materials within the cavity achieve a surface spread of flame classification of at least Class C-s3, d2 or at 10m centres otherwise. Cavity barriers are also required:
- Above/below any fire resisting construction forming or sub-dividing any protected escape routes.
 - At the junction of compartment walls and external cavity walls.
 - At the junction of an opening within a wall containing a cavity.
 - At the junction of fire resisting walls and any non-fire resisting construction; and
 - To close any cavities.
- 7.4.2. All cavity barriers should achieve a minimum of 30-minutes fire resistance (integrity) and 15-minutes fire resistance (insulation). The cavity barriers should also achieve a surface spread of flame classifications of at least Class C-s3, d2.

7.5. Ventilation Ducts and Flues

- 7.5.1. The integrity of all air handling ducts needs to be maintained when they pass through lines of fire resisting construction. In this scheme, the integrity of these ducts should be maintained using either:
- Fire Dampers (which can be actuated) tested under BS EN 1366-2 and certified under BS EN 15650. They can be rated as 'E' or 'ES';
 - Fire Resisting Enclosures; or
 - Fire Resisting Ductwork.
- 7.5.2. Fire dampers should be provided within the thickness of the fire separating elements where non-fire resisting ductwork passes through fire resisting construction. However, dampers should not be provided in extract ductwork serving kitchens. The ductwork should either be fire resisting or enclosed in a fire resisting casing where it passes through other areas of the building.
- 7.5.3. Fire dampers should achieve not less than the fire resistance of the element through which they pass (integrity & insulation). Adequate means of access should be provided to allow inspection, testing and maintenance of both, the fire damper and its actuating mechanism.
- 7.5.4. Motorised fire dampers (ES rated) are required where an air path exists into and out of an escape route enclosure (e.g. stairs, lobbies and enclosed escape corridors).

8. External Fire Spread

8.1. General

- 8.1.1. The external walls of a building shall adequately resist the spread of fire over walls and from one building to another, having regards to the building height, use and position.
- 8.1.2. The external envelope of the building will not contribute to excessive fire spread from one part of the building to another. Thus, the external wall system will comply with Regulation 7 and be designated Class A2-s1, d0 or better under EN 13501-1 2019.
- 8.1.3. The external walls will be constructed such that:
- The risk of ignition be an external source to the outside surface of the building and spread of fire over the outside should be restricted.
 - The materials used and associated attachments do not contribute to the rate of fire spread up the outside of the building.

8.2. Boundary Conditions

- 8.2.1. The boundary conditions are necessary to calculate the external fire spread to the boundary site and from building to building. Two boundary conditions will be considered within this assessment which consist of the site boundary conditions and the notional boundary conditions.
- 8.2.2. Figure 6 illustrates the extent of the boundary lines for the purpose of addressing external fire spread. The site boundary is taken to the midpoint of adopted roads where applicable and to the existing site boundary which is shown via the red outline. The notional boundary distance is taken from the midpoint between the respective blocks, this is shown as the blue arrow.



Figure 6: Site and Notional Boundary Distance

- 8.2.3. An assessment using the Enclosing Rectangle Method outlined within BRE 187 has been utilised for the largest compartment facing the corresponding site boundary. A summary of the findings is illustrated in Table 8, which account for the benefit of sprinkler protection.

Elevation	Site Boundary Distance (m)	Compartment Dimensions	Enclosing Rectangle	Unprotected Area Permissible
Block 2-3 (South)	10 m	2.6 x 6.8	3 x 9	100%
Block 4 (West)	1.9 m	2.6 x 6.8	3 x 9	100%
Block 5 (West)	1.2 m	2.6 x 14.6	3 x 15	60 %

Table 8: Boundary Conditions

- 8.2.4. Where no external changes are made to corresponding building, the assessment is not necessary. The notional boundary distance between Blocks 2-3 and 3-4 is c. 3.3 m. With the largest studio having a width of c. 6.2 m and a height of c. 2.6 m, the BRE assessment concludes that no additional fire resistance is required to the respective external walls. No additional external fire resistance is required for the remaining blocks within the site.

8.3. External Walls Surface

- 8.3.1. Any new cladding or external walls should be class B-s3, d2 or better (European).

8.4. External Wall Insulation

- 8.4.1. Any new insulation product used to create the external wall should be constructed with limited combustibility (e.g., Class A or better in accordance with EN 13501-5).

8.5. Green Roof and Terrace

- 8.5.1. Any new roof coverings should be designed to achieve $B_{ROOF}(t_4)$ in accordance with EN 13501-5.
- 8.5.2. Green roofs shall be designed in accordance with the GRO Green Roof Code 2021 incorporating the following:
- The growing medium layer (substrate) should be a minimum of 80 mm deep, with an organic content of not more than 50%.
 - A 300 mm fire break should be provided around all penetrations. This should be increased to 500 mm where there are opening into the building.
 - One-metre wide fire break should be provided at 40 m intervals, which should consist of 20 – 50 mm pebbles, to a minimum depth of 50 mm.

9. Access and Facilities for the Fire Service

9.1. Fire Hydrants

9.1.1. The water supply for the fire service will be via existing water hydrants. Hydrants should be located within 90 m of the entrance to each building.

9.2. Vehicle Access

9.2.1. Primary vehicle access will be via Bax Road, which serves all buildings on the site. Figure 7 illustrates the vehicle access route. Turning points will be provided to ensure Fire Service vehicles do not have to reserve more than 20 m.



Figure 7: Fire Service Vehicle Access

9.2.2. The access routes for the Fire Service vehicles should conform to the following requirements for a pump appliance:

Provision	Criteria
Minimum width of road between kerbs	3.7 m
Minimum width of gateways	3.1 m
Minimum turning circle between kerbs	16.8 m
Minimum turning circle between walls	19.2 m
Minimum clearance height	3.7 m
Minimum carrying capacity	12.5 tonnes
Maximum dead-end access route	20 m

Table 9: Fire Service Vehicle Access Requirements

9.3. Fire Mains

9.3.1. Dry rising mains should be provided within the firefighting stairs of Blocks 4 and 5 and be designed in accordance with BS 9990.

9.3.2. Coverage should be provided to within 60 m to any point on the floor plate, when measured along a suitable route for the hose.

9.3.3. As Blocks 1-3 will not be provided with fire mains, vehicle access for fire appliance should not exceed 45 m from all points within each respective block. The distance between fire service pumping appliance and any point within all apartments may be up to 75 m with the addition of sprinklers.

9.4. Firefighting Shafts

9.4.1. Blocks that exceed 18 m in height should be provided with a firefighting shaft. The firefighting shaft should conform with the following provisions:

- Firefighting stairs with a minimum width of at least 1100 mm;
- A means of smoke ventilation to the lobby;
- A 1.0 m² AOV at the head of the firefighting stairs; and
- A dry fire main provision to the fire stairs, as the topmost storey of the block exceeds 18 m in height.

9.5. Firefighters Lifts

9.5.1. The passenger/firefighters lifts within Blocks 4 and 5 should conform to BS EN 81-72.

10. Fire Safety Management Requirements

- 10.1.1. Management procedures have a pivotal role to play in fire prevention, control and evacuation of occupants should a fire incident occur. The management is the responsibility of the property owner and the respective tenants under the RRO.
- 10.1.2. Inherent in both the prescriptive standards and the approach adopted for this scheme is the assumption that there will be appropriate fire safety management of the premises when in use.
- 10.1.3. This section is intended to introduce the RRO, its obligations and provide initial guidance in fulfilling these duties. It is the responsibility of the landlords/building management to ensure that all fire safety systems within the common areas are tested and maintained to ensure their continuous effectiveness. The landlord/building management needs to be aware of all fire safety features provided and their purpose.
- 10.1.4. It is important that management are aware of their responsibilities detailed in this document and agree that they are sufficiently capable of performing them. Effective arrangements should be put in place to manage all aspects of fire safety in the premises and the details of those arrangements need to be recorded, e.g. within a fire safety management plan.
- 10.1.5. Any deviation from the principles or ethos of the final fire safety strategy could impact on the effectiveness of its implementation post construction and should be factored into an updated document accordingly. The fire strategy may contain bespoke solutions independent from prescriptive guidance and should therefore be shared with building management and fire risk assessors, or any other relevant person.

10.2. Evacuation of Disabled Occupants or Occupants That Require Assistance to Escape

- 10.2.1. Providing an accessible means of escape should be an integral part of fire safety management in all buildings. Fire safety management should consider the full range of people who might use the premises, paying particular attention to the needs of disabled people.
- 10.2.2. An evacuation plan should not rely on the assistance of the fire and rescue service. This is an important factor that should be considered in the building design.

10.3. Occupants

- 10.3.1. The responsible person should advise occupants formally of the fire safety arrangements for the building, what to do to prevent fires occurring, and what to do in the event of a fire. This information should be contained within a handbook which should also address the potential for problems arising where sub-contractors are employed, e.g. for fit-out work.

10.4. Maintenance of Fire Protection Measures

- 10.4.1. It is essential that the fire protection measures integrated in a building function in a fire. The fire protection measures should be inspected on a regular schedule to ensure that they are always available and functional. Inspections should include, but not necessarily be limited to, compliance with the following recommendations:
- Escape routes should always be kept clear. Storage of goods and equipment could block exits and provide an unwanted fire load and potential source of ignition.

- Door locks, panic bars and automatic door release mechanisms should be maintained so that they are easily openable in an emergency.
- Whenever additional or replacement services breach compartment walls or floors, the integrity of fire separation should be maintained using appropriate fire-resisting materials in spaces where breaches of compartmentation have occurred.
- Fire safety equipment such as fire extinguishing and fire main inlet and outlet valves should not be obstructed by stored goods, machinery, or parked vehicles.
- All fire safety equipment, e.g. fire alarms, emergency escape lighting, automatic fire suppression systems, smoke control systems and fire extinguishers, should be maintained and tested in accordance with the relevant standard by competent persons.
- Fire doors should be maintained.
- Evacuation lifts should be suitably maintained and have periodic tests to ensure their operation in the event of a building evacuation.

10.5. Maintenance of Building Plant and Equipment

- 10.5.1. Fire can start in machinery and equipment which is not adequately maintained or cleaned. The responsible person should check that the equipment and plant is regularly maintained.

10.6. Ensuring that Systems Respond Properly in an Emergency

- 10.6.1. It is essential that in the event of a fire, all fire safety provisions function as intended and all fire emergency procedures are implemented to facilitate appropriate action. As it can never be foreseen when a fire might occur, it is part of the role of the responsible person to ensure that all the built-in passive and active safety systems operate (or are effective) on demand.

10.7. Escape Routes

- 10.7.1. The following recommendations should be met to ensure that escape routes are always available for use when the building is occupied.
- All escape routes should be kept free from obstruction.
 - Goods, materials, unwanted furniture, etc. should not be stored within escape routes. Any obstruction should be removed immediately.
 - All escape routes should be inspected frequently. A log detailing the frequency and results of inspection should be included in the fire safety manual and corrective measures should be taken where necessary.
 - Fire doors that are intended to be kept closed should remain closed and unobstructed.
 - Fire doors on hold-open devices should be operable and should be unobstructed.
 - The exterior of the building should be inspected to ensure that final exits and routes to assembly points are not blocked, and no combustible items are stored.
 - Fire safety signs and notices, fire extinguishers, emergency escape lighting, fire doors and shutters should not be obscured.
 - Seating areas should not be provided within escape corridors.

- Maintenance and redecoration of surface finishes and floor coverings should not use materials that might propagate surface spread of flame and/or fire, or adversely affect the means of preventing such propagation.
- The floor surfaces (including stairs and ramps) within escape routes should be maintainable, even, and non-slip. Resilient floor surfaces should be maintained in accordance with BS 6263-2. Only emulsion polish (not wax polish) should be used on such floor surfaces.

10.8. Maintenance of Fire Safety Equipment and Provisions

- 10.8.1. Planned inspection, maintenance and testing procedures should be established and used to ensure that all fire protection systems can operate effectively when required. Arrangements should be made for all fire safety equipment, installations, and systems (including fire detection systems, automatic fire suppression systems, door control mechanisms, smoke control systems, evacuation lifts, emergency escape lighting, standby power systems, and all passive fire protection provisions) to be inspected and tested on a regular basis by a competent person. Material alterations, additions, repairs or modifications to services and equipment should be carried out only by competent persons.

10.9. Fire-Fighting Access and Equipment

- 10.9.1. Dry rising fire mains and the accompanying emergency inlet and/or outlet boxes should be regularly inspected for damage and repaired where necessary. Where provided, outlet straps to fire mains should be checked to see that they are in place and secure.
- 10.9.2. Fire and rescue service access roads and gates leading to the building can become obstructed by the indiscriminate parking of cars and other vehicles using the site. Management procedures should exercise control over the parking of vehicles on private access roadways also used for fire and rescue service access, so that fire appliances are not obstructed in an emergency and are able to proceed to within the required distance of the fire main inlets.

10.10. Contingency Planning

- 10.10.1. It might be necessary to implement contingency arrangements in the event of safety systems being unavailable, e.g. due to maintenance or repair. The fire risk assessment should be used to identify critical systems and inform contingency planning in terms of additional management actions and timescales.



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