



Fire Safety Strategy

Westminster Court
Brighton Road, Worthing, West Sussex, BN11 2EQ

www.elev8fireengineering.com

Date of issue – 12th May 2025
Doc Reference – Elev8250655
Revision – P01

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Project Information

Client	HML Property Management Ltd
Building name	Westminster Court
Address	Brighton Road, Worthing, West Sussex, BN11 2EQ
Property type	Residential Flats
Reference number	Elev8250655

Quality Control

Revision	Date	Comment	Author	QA & Technical review	Approver
P01	12/05/25	Initial Draft	LK	CH	CH

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This report is formulated based on the information made available at the time of preparation. It is applicable to the above-mentioned project only, in accordance with The Clients instructions. If any further information is made available following the publication of this report, this report will need to be reviewed in full, unless otherwise agreed with Elev8 Fire Engineering Ltd.

Table of Contents

Project Information.....	2
Quality Control.....	2
1. Executive Summary.....	5
1.1 Recommendations.....	7
2. Introduction	10
2.1 Appointment and Scope	10
2.2 Background.....	10
2.3 Methodology	10
2.4 Building Description.....	11
2.5 Provision of Information.....	11
2.6 Limitations	12
3. Legislation and Guidance	12
3.1 The Building Act 1984.....	12
3.2 The Building Regulations 2010	12
3.3 Regulation 38.....	12
3.4 Regulation 7.....	13
3.5 The Fire Safety Act (2021)	13
3.6 Fire Safety (England) Regulations 2022.....	13
3.7 The Regulatory Reform (Fire Safety) Order 2005.....	14
3.8 Guidance.....	14
4. Means of Warning and Escape	15

4.1 Functional Requirement	15
4.2 Purpose Group.....	15
4.3 Fire Evacuation Strategy	15
4.4 Fire Detection and Alarm Systems.....	15
4.4.1 Residential Apartments.....	15
4.4.2 Communal Areas	16
4.4.3 Fire Alarm System Interfaces.....	16
4.5 Means of Escape from Flats.....	17
4.5.1 Internal Flat Layouts.....	17
4.6 Means of Escape in the Common Parts.....	18
4.6.1 Travel Distance	18
4.6.2 Common Escape Routes	18
4.6.3 Final Exits.....	21
4.6.4 Lifts	21
4.7 General Provisions	21
4.7.1 Emergency escape Lighting	21
4.7.2 Escape Signage	21
4.7.3 Doors	21
4.7.4 Secondary power supplies.....	22
4.7.5 Provisions for disabled occupants.....	22
5. Internal Fire Spread (Linings)	23
5.1 Functional Requirement	23
5.2 Wall and Ceiling Linings	23

5.3	Thermoplastics, roof lights and lighting diffusers	23	7.2.2	Balconies	31
6.	Internal Fire Spread (Structure)	24	7.3	Space Separation	33
6.1	Functional Requirement	24	7.4	Roof Coverings	33
6.2	Elements of Structure	24	8.	Access and Facilities for the Fire Service	34
6.3	Compartmentation and Fire Resisting Construction	24	8.1	Functional Requirement	34
6.4	Construction of compartment floors and walls	26	8.2	General	34
6.4.1	Junctions	26	8.3	Vehicle Access	34
6.5	Ventilation ducts and flues passing through fire-separating elements	26	8.4	Access to Fire Mains	34
6.6	Fire Stopping	27	8.5	Access to buildings for firefighting personnel	35
6.7	Concealed Spaces (cavities)	28	8.6	Operational Information for the Fire and Rescue Service	35
6.8	Fire Doors	30	8.7	Wayfinding Signage	36
7.	External Fire Spread	31	9.	Fire Risk Management	37
7.1	Functional Requirement	31	9.1	General	37
7.2	Construction of External Walls	31	9.2	Ongoing Fire Risk Management	37
7.2.1	Materials and products	31	References		40

1. Executive Summary

Westminster Court is an existing, purpose built, residential building located on Brighton Road, Worthing, West Sussex, BN11 2EQ. Originally constructed circa 1963 the block provides thirty six self-contained residential dwellings in general needs use across the ground to eighth floor level.

As this building is existing, the fire strategy report is retrospective in nature, therefore there is no requirement to comply with the current building regulations or associated design guidance. However, this fire strategy report has been developed and benchmarked with the functional requirements set out in Part B of Schedule 1 of the Building Regulations 2010 (1). Thereby, providing a clear point of reference to support any future building refurbishments, system upgrades and all future fire risk management.

A summary of the fire safety measures is outlined below.

Table 1 Summary of fire safety measures

Requirement	Description	Comment
General	Building Height	21.12m to uppermost occupied floor slab (residential)
	Building Use	Residential (apartments)
Means of Escape and Warning	Evacuation strategy	Stay Put
	Fire detection and alarm system	- A Grade D LD3 system within apartments. - A Category L5 system in the common areas to operate the Automatic Opening Vents (AOV).
	Means of escape	- Apartments exit to protected corridors. - Residential corridors are served by a single protected stairs providing vertical means of escape.
	Smoke Ventilation	Openable windows are provided to residential lobbies and stair landings on each level.
Internal Fire Spread (Linings)	Wall and ceiling linings	It is important that in circulation spaces, where the rapid spread of fire is most likely to prevent occupants from escaping, the surface linings are restricted, by making provision for them to have low rates of heat release and surface spread of flame. These provisions are set out in Table 6 of this report.
Internal Fire Spread (Structure)	Fire resistance	- Structural elements - 90 minutes. - Each floor is constructed as a compartment floor. - Each flat is separated by 60 minutes fire resisting construction.
External Fire Spread	External wall materials	The external walls are masonry and concrete frame construction. Balconies comprising a concrete deck with steel frame and glazed balustrades are affixed to the outer shell.

Access and Facilities for the Fire Service	Vehicle access	• Fire service vehicle access is provided via Brighton Road with entry provided to the front elevation. • Fire hydrants are provided on nearby road junctions.
	Access for firefighting personnel	• The block is provided with a dry rising main, firefighting stairs and firefighting lift.
Fire Risk Management	Fire Risk Assessment	• As this is an occupied building, there are ongoing legal requirements for the Responsible Person Under the Regulatory Reform (Fire Safety) Order 2005 (RRO) (2). Under this legislation the 'Responsible Person(s)' must ensure that the necessary level of general fire precautions are implemented in the occupied building. The fire authority having jurisdiction has the power to inspect the premises to check that the Responsible Person(s) comply with the duties under the Order and that the Responsible Person(s) have carried out a suitable and sufficient fire risk assessment and acted upon the significant findings of that assessment. • This Fire Strategy report should be used as a key source of information to inform future fire risk assessments and must be made available to anyone carrying out a fire risk assessment of the premises. Similarly, the principles and provisions of this fire strategy must be put into practice when the building is in use. If any subsequent variation to the fire strategy is to be introduced a fire risk assessment must be carried out which considers the implications of any change on all aspects of the fire safety arrangements.

1.1 Recommendations

The recommendations outlined below are the main deviations identified as part of this retrospective fire strategy report for the Westminster Court. It is recommended that the Responsible Person reviews and updates the Fire Risk Assessment (FRA) to ensure it fully incorporates the findings and recommendations of this fire strategy report.

Table 2 Summary of recommendations

Report Section	Requirement	Recommendation
4.5	Fire Detection and Alarm System	The premises currently have a 'mixed system' incorporating Grade D/F LD3 system(s) within dwellings inspected and a L3 system comprising smoke detection in the communal escape routes, and an interlinked detector inside each flat entrance hallway behind the flat entrance door that adjoins the communal escape routes. To support the ongoing use and management of the building, it is recommended that smoke alarms are installed in all domestic premises, and, where this is not already the case, residents should be advised to fit domestic smoke and heat alarms to a minimum standard of Category LD3. A Category LD3 system incorporates detectors in all circulation areas that form part of the escape routes from the apartment. Sounders should be provided to balconies/private amenity spaces to alert occupants of these areas in the event of a fire. Following completion of the proposed compartmentation works, the stay put strategy will be reinstated. Due to the stay put evacuation strategy, a means of giving warning within the common parts of the residential areas could potentially conflict with the escape strategy. Therefore, to support the proposed approach, it is recommended that one of the following options are adopted: • Ensure that the sound pressure level of the communal system does not exceed 45 dBA in the hallway of residents' flats to avoid confusion or a perceived need to evacuate upon activation of the communal alarm system. • Reconfigure the existing system to operate communal ventilation systems only (if installed as part of this fire strategy). To achieve this, alarm sounders and manual call points should be removed from the residential floors.

		It is recommended that a 3 rd party accredited fire alarm contractor is appointed to design and adjust the system currently in place.
4.7.3	Smoke Control	A suitable means of ventilating the common lobbies to provide sufficient protection to the common stairs should be provided. The residential lobbies and stairwell within Westminster Court are provided with openable windows at each floor level. All existing openable windows were observed to have a free area of less than 1.0m². ADB requires the following to be in place: • the corridor or lobby next to each stair should have a smoke vent. The location of the vent should comply with both of the following. ○ Be as high as practicable. ○ Be positioned so the top edge is at least as high as the top of the door to the stair. • Smoke vents should be provided with a minimum free area of 1.5m² and be located on an external wall or discharge into a vertical smoke shaft that meet the criteria outlined in ADB Section 3.51 b. • A vent to the outside with a minimum free area of 1m² should be provided from the top storey of the stair. • In single stair buildings, smoke vents on the storey where the fire is initiated, and the vent at the head of the stair, should be activated by smoke detectors in the common parts. Guidance relevant to the block at the time of construction specified that stair lobbies should be provided with permanent openings in the external wall of not less than 15 sq ft (1.39m²). Consequently the provision of lobby ventilation currently in place within Westminster Court is not in line with prescriptive recommendations outlined in current guidance or the guidance relevant to the block at the time of construction. From external observation, it appears that the design intent of the block was to provide permanent natural ventilation in the form of louvred vents to the stair lobbies, this is consistent with the recommendations made by guidance at the time of construction. However, from a visual internal inspection the permanent vents provided to the lobbies appear to have been infilled as part of more modern renovations to the block. Given the importance of maintaining smoke free conditions in the means

		of escape, it is prudent that adequate smoke ventilation to provide sufficient protection to the common stairs and lobbies is provided. Consequently, recognising that the provision of openable windows to the stair enclosure meets compliance with the benchmark standard at the time, one of the following approaches should be adopted. • Reinstall the existing permanent natural ventilation to the flat lobbies ensuring the openings provide a minimum free area of 15 sq ft (1.39m²) in accordance with the original design intent for the building. • Upgrade the provision of smoke ventilation provided to the block to meet the recommendations of current guidance. To achieve this the following provision should be made. • Automatic opening vents (AOV's) with a minimum free area of 1.5m² should be provided to each flat lobby • An AOV with a minimum free area of 1m² should be provided to the top storey of the stair. • If smoke is detected in the common lobby, both of the following should occur. ○ Simultaneous opening of vents on the storey where the fire is located, and at the head of the stair. ○ Vents from the lobbies on all other storeys should remain closed, even if smoke is subsequently detected on storeys other than where the fire is located. To meet the requirements outlined above and Sections 3.50-3.53 of ADB.
6 (All)	Compartmentation, fire stopping and fire doors	Compartmentation, fire stopping, and fire door deficiencies are present throughout the building. Compartmentation and fire door surveys have been undertaken. These have identified a number of defects and remediation requirements. It is expected that the findings from these surveys will be addressed and implemented.

2. Introduction

2.1 Appointment and Scope

Elev8 Fire Engineering Ltd have been appointed by HML Property Management Ltd to produce a Fire Safety Strategy for a residential block known as Westminster Court. The existing purpose built block is located on Brighton Road, Worthing, West Sussex, BN11 2EQ, providing residential flats across nine floors,.

Generally, a fire strategy report is submitted to the Approving Authorities to assist in the process of gaining approval under Part B of the Building Regulations 2010. However, as this is an existing building, no such obligation is required. This fire strategy aims to outline how the building meets the functional requirements for Part B of Schedule 1 of the Building Regulations 2010 (1). Therefore, providing a full understanding of the fire safety measures required to support the ongoing fire risk management of the building.

2.2 Background

Westminster Court is an existing building originally constructed circa 1963 comprising 36 residential apartments in general needs use across the ground to eighth floors.

It is understood that the building is to undergo remedial works to upgrade the building's fire safety provisions and repair defects identified to the standard of compartmentation to adequately support the intended use of the building.

This fire strategy has been drafted to support the management team and other interested parties with any future renovation works and the ongoing fire safety management of the building.

2.3 Methodology

Westminster Court is an existing building therefore; it is unlikely that all existing fire safety measures will align with current fire safety standards and guidance. It should also be noted that it is unreasonable to expect building owners to upgrade fire safety measures to current standards as a matter of course.

Therefore, the following methodology has been adopted:

The fire strategy for all areas of the building will be benchmarked against current fire safety guidance and standards.

Where aspects of the design fall short of these benchmarks, this will be clearly identified, and reference will be made to determine whether compliance was achieved with prescriptive guidance relevant to the building at the time of construction – if the design doesn't align to either current or past guidance, this will either be justified by a qualitative or quantitative appraisal (where appropriate) or an alternative code-compliant solution will be suggested. Where this is the case, further analysis may be required and will be subject to formal approval from the relevant authorities.

As such the primary guidance document referred to when developing this fire strategy is – Approved Document B Volume 1 Dwellings 2019 edition incorporating 2020, 2022 and 2025 amendments – for use in England.

Secondary guidance, the guidance relevant to the building at the time of construction is - CP3: Chapter IV 1962 Code of basic data for the design of buildings, Chapter IV Precautions against fire, Part 1 Flats and maisonettes in blocks over 80 ft in height.

2.4 Building Description

Westminster Court is an existing nine storey (G-8) building providing residential apartments across each floor. A single staircase and two passenger lifts serve the upper floors.

The building is accessed at ground floor level from Brighton Road. The entrance foyer gives access to four dwellings and houses two passenger lifts serving the upper floors. The ground floor also provides a plant area which is separated from the rest of the building and accessed externally.

The upper floors are similar in layout. Each level provides four flats which are separated from the stair by protected corridors that also house resident store cupboards and the passenger lifts.

Building elevations are not provided. Information provided by the client indicates that the building height is measured as 21.12 m from the ground floor to the uppermost occupied floor slab.

The existing building is illustrated in Figure 1.

2.5 Provision of Information

The following relevant information has been made available by the client.

Table 3 Relevant information provided

Document Title	Author	Date
Floor Plans – Ground floor to Eighth floor	Infinity Surveying Ltd	03/02/25
Orientation Plan	Infinity Surveying Ltd	03/02/25
On Arrival Information	Infinity Surveying Ltd	03/02/25
Fire Risk Assessment	Marsh Surveyors	12/02/24



Figure 1 Westminster Court existing elevation

2.6 Limitations

The fire safety provisions outlined in this report are specifically focused on the life safety of the building occupants. Property protection or insurance requirements are not included in this report unless otherwise stated.

Whilst fire safety measures introduced for compliance with this life safety objective have a beneficial effect on reducing potential fire losses and the extent of any consequential damage, this document is intended to satisfy life safety requirements only.

In view of this, the opinion of the nominated insurance company and any other stakeholders should be sought. This report makes the assumption that all work will be done using appropriate materials and in a workmanlike manner, as per Building Regulations 2010. Whilst this document details the fundamental strategy for safe premises, there is an ongoing management obligation to ensure that the passive and active fire protection facilities are correctly maintained.

3. Legislation and Guidance

The following sections outline the main legislation and guidance relevant to the project.

3.1 The Building Act 1984

The Building Act 1984 (4) is an important piece of legislation that sets out the legal framework for building control and construction. Under the Building Act 1984, the Secretary of State has the power to make Building Regulations, which provide specific requirements and standards for various aspects of building design and construction, including fire safety.

3.2 The Building Regulations 2010

The current Building Regulations are the Building Regulations 2010 (1). Compliance with these regulations is demonstrated through the functional requirements in Part B of Schedule 1 of the Building Regulations, which can be broken down as follows:

- Requirement B1: Means of warning and escape
- Requirement B2: Internal fire spread (linings)
- Requirement B3: Internal fire spread (structure)
- Requirement B4: External fire spread
- Requirement B5: Access and facilities for the fire service

3.3 Regulation 38

The aim of this regulation is to ensure that the person responsible for the building has sufficient information relating to fire safety to enable them to manage the building effectively. The aim of regulation 38 will be achieved when the person responsible for the building has all the information to enable them to do all of the following.

- Understand and implement the fire safety strategy of the building.
- Maintain any fire safety system provided in the building.
- Carry out an effective fire risk assessment of the building.

For building work involving the erection or extension of a relevant building (i.e. a building to which the Regulatory Reform (Fire Safety) Order 2005 (2) applies, or will apply), or the relevant change of use of a building, fire safety information should be given to the responsible person at one of the following times.

- When the project is complete.
- When the building or extension is first occupied.

3.4 Regulation 7

Regulation 7 of the Building Regulations requires that all building work should be carried out in a workmanlike manner, with adequate and proper materials that are appropriate for the circumstances in which they are used, are adequately mixed and prepared, and are applied, used or fixed so as to perform the functions for which they are designed. Further guidance is provided in the Approved Document supporting Regulation 7.

Independent certification schemes exist to provide additional confidence that products are manufactured and installed to an appropriate and consistent standard. Such schemes can assist in ensuring that the Material and Workmanship requirements of Regulation 7 are satisfied. It is therefore suggested that, where appropriate, manufacturers and installers that are subject to independent certification schemes are specified on this project.

Recent changes to Regulation 7 in December 2018 prohibit the use of combustible materials within the external wall construction and specified attachments including balconies, solar shading or solar panels, within residential buildings which have a storey more than 18m above the lowest adjacent external ground level.

3.5 The Fire Safety Act (2021)

The Fire Safety Act 2021 (enacted on 16.05.2022) has amended the applicability of the RRFSO to residential buildings as follows:

- ‘Where a building contains two or more sets of domestic premises, the things to which this order applies include —
 - (a) the building’s structure and external walls and any common parts;

(b) all doors between the domestic premises and common parts (so far as not falling within subparagraph (a)).

The reference to external walls includes—

- (a) doors or windows in those walls, and
- (b) anything attached to the exterior of those walls (including balconies).

This clarification empowers fire and rescue services to take enforcement action and hold building owners to account if they are not compliant.

3.6 Fire Safety (England) Regulations 2022

The Fire Safety (England) Regulations 2022 implemented most of the recommendations made by the Grenfell Tower Inquiry in its Phase 1 report, which required a change in the law. The regulations seek to improve the fire safety of blocks of flats in practical, cost-effective ways for individual leaseholders and proportionate to the fire risk.

For multi-occupied residential buildings over 11 metres in height, responsible persons must:

- undertake quarterly checks on all communal fire doors and annual checks on flat entrance doors

In all multi-occupied residential buildings, responsible persons must:

- provide residents with relevant fire safety instructions and information about the importance of fire doors

The Fire Safety Act (FSA) clarified the scope of the Fire Safety Order to make clear it applies to the structure, external walls (including cladding and

balconies) and individual flat entrance doors between domestic premises and the common parts.

The Fire Safety (England) Regulations 2022, made under article 24 of the Fire Safety Order, impose new duties on responsible persons with regard to the areas brought within the Fire Safety Order by the Fire Safety Act and commencement of section one of the Fire Safety Act was, therefore, a necessary precursor to the laying of these regulations

3.7 The Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order 2005 (RRO) applies to this development and forms a crucial part of the 'responsible persons' duties.

The RRO places a general duty of fire safety care on employers, occupiers and owners of most premises and requires them to take such fire precautions as may be reasonably required to ensure that premises are safe for the occupants and those in the immediate vicinity.

The 'responsible person' has a duty to carry out a Fire Risk Assessment which must focus on the safety in case of fire of all 'relevant persons'.

The main focus of the Fire Risk Assessment is to ensure that the premises are safe for the occupants to use and that all fire safety measures are adequate and appropriately maintained. In new buildings, the Fire Risk Assessment ensures that the fire safety provisions required under the Building Regulations 2010 are in place, adequate and maintained, whereas in existing buildings it ensures that despite any modifications undertaken throughout the building's lifecycle, it is still safe for use. It is therefore important that the Fire Safety Strategy for more complex buildings (regardless of age) is clear and well documented.

3.8 Guidance

Guidance for the fire precautions will generally follow the recommendations contained within Approved Document B Volume 1 Dwellings 2019 edition incorporating 2020, 2022 and 2025 amendments – for use in England. Any deviations from these standards are to be provided with justification demonstrating that the functional requirements of the Building Regulations are met however these will be subject to approval from the approving authority and local Fire Service.

Where no specific provision is mentioned in this document regarding any particular aspect, reference should be made to Approved Document B Volume 1 Dwellings 2019 edition incorporating 2020, 2022 and 2025 amendments – for use in England (ADB).

Reference will also be made to the guidance relevant to the building at the time of construction is - CP3: Chapter IV 1962 Code of basic data for the design of buildings, Chapter IV Precautions against fire, Part 1 Flats and maisonettes in blocks over 80 ft in height. The code of practice published by BSI provided recommendations for fire precautions in blocks of flats over 80ft (approximately 24m) in height. The code of practice was also considered appropriate for buildings less than 80ft in height.

Other guidance has been used in creating this fire strategy report. Where it has, it is referenced at the end of this report.

4. Means of Warning and Escape

4.1 Functional Requirement

‘The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of fire from the building to a place of safety outside the building capable of being safely and effectively used at all material times’.

4.2 Purpose Group

The Purpose Group provides a classification for differing levels of hazard within different building types. They can apply to the whole building or part of a building where a building is compartmented.

The Purpose Group for Westminster Court is:

Table 4 Purpose Group

Title	Group	Purpose
Residential (dwellings)	1(a)	Flat

4.3 Fire Evacuation Strategy

It is understood that the building currently operates a simultaneous evacuation strategy such that on activation of the fire alarm all occupants will leave the building and assemble at a place of safety away from the building. It is understood that this approach is due to compartmentation defects identified during the risk assessment process.

Following successful completion of the compartmentation works, it is recommended that the following approach be adopted in line with the original design intent and current regulatory guidance:

A ‘stay put’ evacuation strategy should be adopted following the successful completion of the compartmentation works. The principle of the stay put evacuation is that only the occupants of the dwelling containing the fire (the ‘flat of fire origin’) are expected to make an escape. This approach is supported by national guidance for the Building Regulations and is based on the following assumptions:

- A fire will generally only occur in a flat;
- There is no reliance on external rescue;
- There is a high degree of compartmentation and therefore a low probability exists that there will be fire spread beyond the flat of origin;
- If a fire does occur within the common parts, the materials and construction used in these areas should limit the development and spread of fire.

This does not preclude the event that occupants may wish to self-evacuate at any time. Any additional evacuation is at the discretion of the Fire Service if they decide it is necessary to do so during operational procedures.

4.4 Fire Detection and Alarm Systems

4.4.1 Residential Apartments

In accordance with ADB, single family dwellings should be provided with a fire detection and alarm system to a minimum standard of Grade D2 Category LD3 standard, incorporating one or more mains-powered detectors, each with an integral standby battery power, in accordance with the relevant recommendations of BS5839-6:2019+A1:2020. ADB also recognises that a higher standard of protection should be considered where occupants of a dwelling would be at special risk from fire.

The residential units inspected were observed to be provided with Grade F or Grade D, Category LD3 systems comprising smoke detection in the entrance hall of the flat. While the Grade D systems observed meet compliance with the modern approach Grade F systems are battery powered with no mains or back up power supply and as such do not meet compliance with current guidance.

At the time of construction guidance did not consider a means to warn occupants of fire necessary, instead placing emphasis on intervention and providing a means to summon the fire and rescue service in the event of fire. As such the provisions observed within dwellings during the site visit are reasonable and provide no additional risk to occupants than those commonly accepted at the time of construction.

To support the ongoing use and management of the building, it is recommended that smoke alarms are installed in all domestic premises, and, where this is not already the case, residents should be advised to fit domestic smoke and heat alarms to a minimum standard of Category LD3.

A Category LD3 system incorporates detectors in all circulation areas that form part of the escape routes from the apartment. Sounders should be provided to balconies/private amenity spaces to alert occupants of these areas in the event of a fire.

4.4.2 Communal Areas

The fire detection and alarm system installed in the communal areas of Westminster Court is currently required to support the simultaneous evacuation strategy of the flats.

During the site visit manual call points and alarm sounders were observed throughout the residential areas. No commissioning paperwork for the

systems in place is available, therefore the category of the existing system cannot be determined.

Following completion of the proposed compartmentation works, the stay put strategy will be reinstated. Due to the stay put evacuation strategy a means of giving warning within the common parts of the residential areas could potentially conflict with the escape strategy. Therefore, to support the proposed approach, it is recommended that one of the following options are adopted:

- Ensure that the sound pressure level of the communal system does not exceed 45 dBA in the hallway of residents' flats to avoid confusion or a perceived need to evacuate upon activation of the communal alarm system.
- Reconfigure the existing system to operate communal ventilation systems only (if installed as part of this fire strategy). To achieve this, alarm sounders and manual call points should be removed from the residential floors.

It is recommended that a 3rd party accredited fire alarm contractor is appointed to design and adjust the system currently in place.

4.4.3 Fire Alarm System Interfaces

The communal automatic fire alarm system will have interfaces and links as necessary to operate equipment/devices and a number of examples are indicated below; for more information see BS5839-1:2017:

- Security systems on exit doors – released as required;
- Gas supply valves (plant areas) – isolate;
- Smoke ventilation systems – relevant system activates depending on the location of detection;

4.5 Means of Escape from Flats

4.5.1 Internal Flat Layouts

The internal design of the apartments at Westminster Court are all single level with all habitable rooms served by a protected entrance hall. ADB recommends that single storey flats provided with protected entrance halls, should meet the following:

- The total travel distance from the flat entrance door to the furthest habitable room should be limited to 9 m.
- The entrance hall should be enclosed in construction that achieves a minimum of 30 minutes fire resistance (load bearing capacity, integrity and insulation).

The travel distance from the access door of the furthest habitable room within a flat to the flat entrance door did not exceed 9m in flats accessed during the site visit. As such, compliance with ADB is met. An example of existing entrance halls with flats at Westminster Court is illustrated in the figure below.



Figure 2 Example of protected entrance hall provided to flat

4.6 Means of Escape in the Common Parts

Westminster Court is provided with a single stairway. As such the means of escape from flats is available in a single direction only, from dead-end conditions. A typical layout is illustrated in the figure below.



Figure 3 Example of communal flat lobby

4.6.1 Travel Distance

Travel distance is the distance that a person would travel from any point within the floor area to the nearest storey exit, determined by the layout of walls, partitions and fittings. The relevant travel distances for Westminster Court are outlined below.

- Common corridors – 7.5m in a single direction.
- Ancillary areas – 18m in a single direction and 35m with more than one direction.

All travel distances are in line with the guidance.

4.6.2 Common Escape Routes

ADB provides the following recommendations in the case that the means of escape from flats is provided in a single direction only, such as Westminster Court.

- every dwelling should be separated from the common stair by a protected lobby or common corridor and
- the travel distance limitations in Section 4.6.1, on escape in one direction only, are observed;

It was observed during the site visit that design intent of Westminster Court has adopted protected lobbies between the flats and the stair with the single direction travel distances in place, are broadly within the 7.5m limit identified above, as such, compliance with ADB is met.

4.6.2.1 Horizontal escape routes

The exit widths within the development exceed 750mm, which is adequate. This is because the exit widths in residential elements are not critical due to the stay put evacuation strategy, and the minimum size of exits can be based on the needs for everyday use.

4.6.2.2 Vertical escape route

The means of escape from the upper floors provided by a single internal staircase. The stairway is designed as a protected stairway and discharges at ground floor level directly from the stair enclosure. A single means of escape is acceptable in this instance due to the dwellings being separated from the protected stairway by a protected lobby.

The escape stairs measured to provide approximately 1000mm of clear width and is therefore considered reasonable for escape and firefighting purposes. Whilst acknowledged not to meet the 1100mm specified for a firefighting stair in current guidance, adjustment is considered impractical, and the cost disproportionate for an existing block to overcome 100mm in width.

4.6.2.3 Smoke Control

Despite the provisions outlined in this fire strategy, it is probable that some smoke will enter the common corridor from a fire in the flats. Therefore, a suitable means of ventilating the common lobbies to provide sufficient protection to the common stairs should be provided. ADB requires the following to be in place:

- the corridor or lobby next to each stair should have a smoke vent. The location of the vent should comply with both of the following.
 - Be as high as practicable.
 - Be positioned so the top edge is at least as high as the top of the door to the stair.
- Smoke vents should be provided with a minimum free area of 1.5m^2 and be located on an external wall or discharge into a vertical smoke shaft that meet the criteria outlined in ADB Section 3.51 b.

- A vent to the outside with a minimum free area of 1m^2 should be provided from the top storey of the stair.
- In single stair buildings, smoke vents on the storey where the fire is initiated, and the vent at the head of the stair, should be activated by smoke detectors in the common parts.

The residential lobbies and stairwell within Westminster Court are provided with openable windows at each floor level. All existing openable windows were observed to have a free area of less than 1.0m^2 .

Guidance relevant to the block at the time of construction specified that stair lobbies should be provided with permanent openings in the external wall of not less than 15 sq ft (1.39m^2).

Consequently, the provision of lobby ventilation currently in place within Westminster Court is not in line with prescriptive recommendations outlined in current guidance or the guidance relevant to the block at the time of construction.

From external observation, it appears that the design intent of the block was to provide permanent natural ventilation in the form of louvred vents to the stair lobbies, this is consistent with the recommendations made by guidance at the time of construction. However, from a visual internal inspection, the permanent vents provided to the lobbies appear to have been infilled as part of more modern renovations to the block. The original louvred vents are illustrated in Figure 4 below.

Given the importance of maintaining smoke free conditions in the means of escape, it is prudent that adequate smoke ventilation to provide sufficient protection to the common stairs and lobbies is provided.

Recognising that the provision of openable windows to the stair enclosure meets compliance with the benchmark standard at the time, one of the following approaches should be adopted.

- Reinstall the existing permanent natural ventilation to the flat lobbies, ensuring the openings provide a minimum free area of 15 sq ft (1.39m²) in accordance with the original design intent for the building.
- Upgrade the provision of smoke ventilation provided to the block to meet the recommendations of current guidance. To achieve this the following provision should be made.
 - Automatic opening vents (AOV's) with a minimum free area of 1.5m² should be provided to each flat lobby
 - An AOV with a minimum free area of 1m² should be provided to the top storey of the stair.
 - If smoke is detected in the common lobby, both of the following should occur.
 - Simultaneous opening of vents on the storey where the fire is located, and at the head of the stair.
 - Vents from the lobbies on all other storeys should remain closed, even if smoke is subsequently detected on storeys other than where the fire is located.

To meet the requirements outlined above and Sections 3.50-3.53 of ADB.

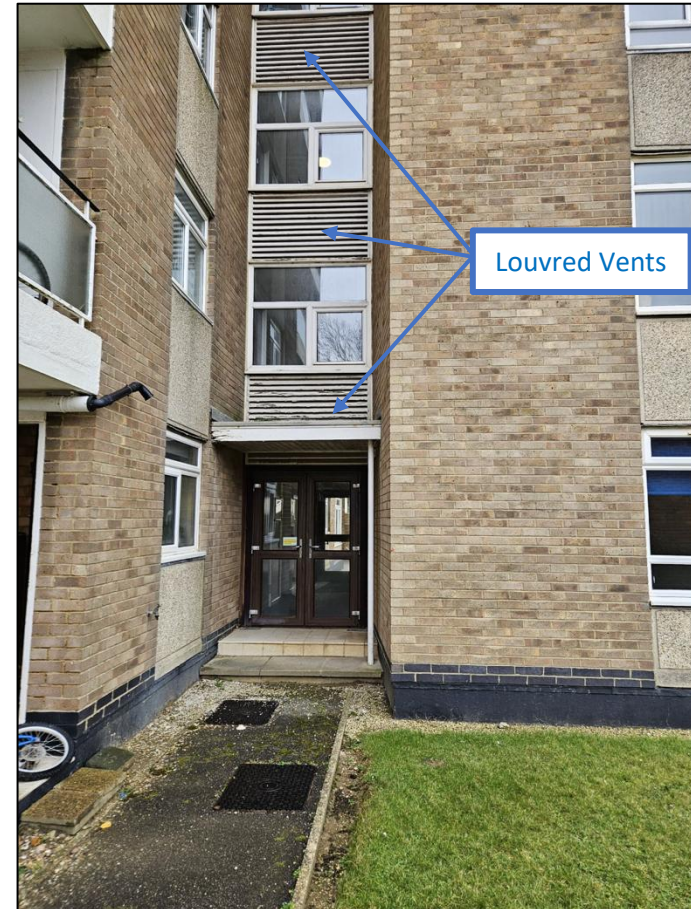


Figure 4 Original louvred ventilation provided to residential lobbies

4.6.3 Final Exits

Final exits must be of suitable width to accommodate all occupants likely to use them in the event of a fire and not less in width than the minimum width required for the escape route(s) they serve.

Final exits must be located to facilitate the evacuation of persons out of and away from the building. Accordingly, escape routes should be arranged so that occupants can leave the area around the building rapidly via direct access to a street, passageway, walkway, or open space. The route away from the building should be well defined and, if necessary, provided with suitable guarding.

Final exits should not present a barrier for disabled people. Where the route to a final exit does not include stairs, a level threshold, and, where necessary, a ramp should be provided.

Westminster Court is provided with 2 final exits from the ground floor residential lobby and a single final exit from the protected stairwell. Due to the stay put evacuation strategy, the escape capacity is considered reasonable without further occupancy calculations being performed and as such compliance with the recommendations of ADB is met.

4.6.4 Lifts

The building is provided with two passenger lifts with fire fighter controls. The exact specification of the lifts is unknown.

4.7 General Provisions

4.7.1 Emergency escape Lighting

All escape routes should have adequate artificial lighting. If the mains electricity power supply fails, escape lighting should illuminate the route (including external escape routes where required).

In addition, escape lighting should be provided to all of the following.

- Toilet accommodation with a minimum floor area of 8m²;
- Electricity and generator rooms;
- Switch room/battery room for emergency lighting system;
- near each exit door intended to be used in an emergency;
- near stairs so that each flight of stairs receives direct light;
- near any other change in level;
- at each change of direction;
- at each intersection of corridors;
- near to each final exit and outside the building to a place of safety;
- near each piece of fire-fighting equipment and call point;
- near escape equipment provided for disabled people;

Escape stair lighting should be on a separate circuit from the electricity supply to any other part of the escape route and should conform to BS 5266-1 (5) and BS EN 1838 (6).

4.7.2 Escape Signage

Every doorway or other exit providing access to a means of escape, other than exits in ordinary use (e.g. main entrances), are required to be distinctively and conspicuously marked by an exit sign in accordance with BS ISO 3864-1 (7) and BS 5499-4 (8).

Final exit levels from stairs should be clearly marked as such, particularly where the exit opens off a stair that continues down or up beyond the level of the final exit.

4.7.3 Doors

In general, doors on escape routes (whether or not the doors are fire door sets) should be either of the following.

- Not fitted with a lock, latch or bolt fastenings.
- Fitted only with simple fastenings that are all of the following.
 - Easy to operate; it should be apparent how to undo the fastening.
 - Operable from the side approached by people escaping.
 - Operable without a key.
 - Operable without requiring people to manipulate more than one mechanism.

The door of any doorway or exit should be hung to open in the direction of escape whenever reasonably practicable. It should always be hung to open in the direction of escape if more than 60 people might be expected to use it during a fire.

All doors on escape routes should be hung to open not less than 90°, and with a swing that is clear of any change of floor level.

A door that opens towards a corridor or a stairway should be sufficiently recessed to prevent its swing from encroaching on the effective width of the stairway or corridor.

4.7.4 Secondary power supplies

Power and control cables should be installed in accordance with BS 8519:2020.

Where dual power supplies are recommended by the relevant British Standard or industry guidance to any life safety system, the primary power source should generally be taken from the public electricity supply, with secondary power, being supplied from an alternative utility supply from another substation, a generator, an uninterruptable power supply (UPS) or batteries.

If the primary power source fails, then the power supply should be automatically switched over to a secondary power source. Failure of or damage to one of the power sources should not cause the failure of the other power source or the failure of the supply of power to the system.

4.7.5 Provisions for disabled occupants

As the building is designed as residential flats with a stay-put evacuation strategy in place, disabled refugees are not considered necessary on the upper levels. However, consideration is to be given to management practices to ensure means of escape for occupants in the event of evacuation.

5. Internal Fire Spread (Linings)

5.1 Functional Requirement

‘To inhibit the spread of fire within the building, the internal linings shall - adequately resist the spread of flame over their surfaces; and have, if ignited, either a rate of heat release or a rate of fire growth, which is reasonable in the circumstances. In this paragraph “internal linings” mean the materials or products used in any partition, wall, ceiling or other internal structure’.

5.2 Wall and Ceiling Linings

Restrictions are placed on the wall and ceiling lining materials within certain areas of buildings to limit the spread of fire and the production of smoke in these areas. It is particularly important that in circulation spaces, where the rapid spread of fire is most likely to prevent occupants from escaping, the surface linings are restricted, by making provision for them to have low rates of heat release and surface spread of flame. All wall and ceiling linings will meet the relevant classifications outlined in Table 4 below:

Table 5 Classification of wall and ceiling linings

Location	National Class	European Class
Small rooms of area not more than: a) 4m ² in residential accommodation b) 30m ² in non-residential accommodation	3	D-s3, d2
Other rooms	1	C-s3, d2
Circulation spaces within dwellings		
Other circulation spaces, including the common areas of residential parts	0	B-s3, d2
Note 1: The National classifications do not automatically equate with the equivalent classifications in the European column, therefore products cannot typically assume a European class, unless they have been tested accordingly.		

Note 2: Where a classification includes “s3, d2” this means that there is no limit set for smoke production and/or flaming droplets/particles.

Parts of walls in rooms may be of lower performance than stated in Table 6, but no worse than class D-s3, d2. In any one room, the total area of lower performance wall lining should be less than an area equivalent to half of the room’s floor area, up to a maximum of 60m² of wall lining.

For the purposes of this report, the surface of any glazing in the vertical plane and any part of a ceiling which slopes at an angle of more than 70° to the horizontal are considered to be walls. The following are not considered to be walls:

- Doors and door frames;
- Window frames and any frames in which glazing is fitted;
- Architraves, mouldings, skirtings and picture rails; and
- Fireplace surrounds and mantles and fitted furniture.

Ceilings include the surface of any glazing in the horizontal plane and any part of a wall that slopes at an angle of 70° or less to the horizontal. The following are not considered to form parts of a ceiling:

- Trap doors and their frame;
- Window frames of roof lights and frames in which glazing is fitted;
- Architraves, mouldings, exposed beams, picture frames and similar narrow members.

5.3 Thermoplastics, roof lights and lighting diffusers

Thermoplastic materials may be used in windows, roof lights and lighting diffusers in suspended ceilings provided that they meet the recommendations of ADB Appendix B.

6. Internal Fire Spread (Structure)

6.1 Functional Requirement

‘The building shall be designed and constructed so that, in the event of fire, its stability will be maintained for a reasonable period. A wall common to two or more buildings shall be designed and constructed so that it adequately resists the spread of fire between those buildings. To inhibit the spread of fire within the building, it shall be sub-divided with fire-resisting construction to an extent appropriate to the size and undertaking of the building. The building shall be designed and constructed so that the unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited’.

6.2 Elements of Structure

The life safety role of structural fire resistance is threefold:

- 1) to minimize the risk to occupants, some of whom might have to remain in the building for some length of time while evacuation proceeds;
- 2) to reduce the risk to fire-fighters who might be engaged in search or rescue operations; and
- 3) to reduce the danger to people in the vicinity of the building, who might be hurt by falling debris or as a result of the impact of the collapsing structure on other buildings.

In addition to any load-bearing function, separating elements need to provide an adequate standard of:

- 1) integrity, to avoid the formation of openings or cracks in the element that allow flame or hot gases to pass through it, to ignite the unexposed surface or materials on the unexposed side of the element; and

- 2) insulation, to avoid the unexposed side of the element becoming hot enough to ignite material in contact with it.

BS EN 13501-2 (9) specifies the procedure for classification of construction products and building elements using data from fire resistance tests which are within the direct field of application of the relevant test method. The following criteria is used to categorise fire resistance requirements:

- ‘R’ is the resistance to fire in terms of loadbearing capacity.
- ‘E’ is the resistance to fire in terms of integrity.
- ‘I’ is the resistance to fire in terms of insulation.

Elements of the main structure include:

- A member forming part of the structural frame of a building or any other beam or column;
- A loadbearing wall or loadbearing part of a wall;
- A floor;
- A loadbearing external wall; or
- A compartment wall (including a wall common to two or more buildings) where there is a requirement to control external fire spread risk.

6.3 Compartmentation and Fire Resisting Construction

Westminster Court is a residential building across the ground to the eighth floor level. Therefore, each element of structure shall provide 90 minutes fire resistance since the building has a floor greater than 18m but less than 30m from the access level.

Each flat shall be separated from the remainder of the building by 60 minutes of fire resistance and an FD30s fire door.

All of the following should be provided as compartment walls and compartment floors and should have, as a minimum, the fire resistance given in Table 5.

- Any floor (unless it is within an apartment i.e. between one storey and another within one individual dwelling).
- Any wall separating any apartment from another part of the building.
- Any wall common to two or more buildings.
- Stairs and service shafts connecting compartments should be protected to restrict the spread of fire between the compartments. These are called protected shafts. Walls or floors surrounding a protected shaft are considered to be compartment walls or compartment floors.

Any structure which only supports a roof does not require fire resistance unless the roof performs the function of a floor, supports a roof-top means of escape route, or structure is essential for the stability of a fire resisting element of an external wall.

A summary of the fire resistance requirements is outlined in Table 6.

Table 6 Fire resistance requirements

Part of Building	Minimum Fire Resistance rating when tested to the relevant part of BS 476 (minutes)			Method of exposure
	Loadbearing Capacity (R)	Integrity (E)	Insulation (I)	
Structural Elements (frame/beam/column)	90	-	-	Exposed faces
Loadbearing wall	90	-	-	Each side separately

Compartment Floors	90	90	90	From underside
Any roof that performs the function of a floor	90	90	90	From underside
Compartment walls separating occupancies or a flat from any other part of the building	60	60	60	Each Side separately
Compartment Walls not identified above	90	90	90	Each side separately
Protected Shafts (Risers, Passenger Lifts stairs)	90	90	90	Each Side separately
Enclosure not forming part of a compartment wall or protected shaft to a protected lobby/corridor	30	30	30	Each side separately
Firefighting Shaft	120	120	120	From side remote from shaft
Construction that separates firefighting stair, lift and lobby	60	60	60	Each side separately
fire resisting sub-division	30	30	30	Each side separately
Enclosure of	30	30	30	Each side separately

protected entrance hall in flat				
Cavity Barriers	-	30	15	Each side separately

6.4 Construction of compartment floors and walls

Every compartment wall and floor should:

- form a complete barrier to fire spread between the compartments; and
- have the appropriate fire resistance indicated in Table 5.

Timber beams, joists, purlins and rafters may be built into or carried through a masonry or concrete wall if the openings for them are kept as small as practicable and fire-stopped. If trussed rafters bridge the wall they should be designed such that the failure of part of the truss in one compartment would not cause the failure of the part in the other compartment.

Compartment walls should run the full height of the storey in which they are situated. Where a compartment floor projects beyond the face of a lower storey, the fire resistance should be maintained over the full extent of the floor.

Compartment walls that are common to two or more buildings (e.g. party walls) should run the full height of the building in a continuous vertical plane. Thus, adjoining buildings should be separated only by walls, not by floors.

6.4.1 Junctions

Where a compartment wall or compartment floor meets another compartment wall or an external wall, the junction should maintain the fire resistance of the compartment.

A compartment wall should be taken up to meet the underside of the roof covering or deck, with appropriate fire-stopping where necessary at the wall/roof junction to maintain continuity

6.5 Ventilation ducts and flues passing through fire-separating elements

Where air handling ducts pass through fire-separating elements such as compartment walls or the enclosures to protected escape routes, then the integrity of those elements should be maintained, using one or a combination of the following four methods:

- Method 1: thermally actuated fire dampers;
- Method 2: fire-resisting enclosures;
- Method 3: protection using fire-resisting ductwork;
- Method 4: automatically actuated fire and smoke dampers triggered by smoke detectors.

Methods 1 and 4 should not be used for extract ductwork serving kitchens. This is due to the likely build-up of grease within the duct which can adversely affect the effectiveness of any dampers.

Method 1 should not be used where ductwork passes through or serves an escape route, as large volumes of smoke can pass through without activation of the thermal devices and E-rated fire dampers have no performance rating in terms of smoke resistance.

Methods 2 and 3 should be used only where ductwork does not serve the escape route it passes through.

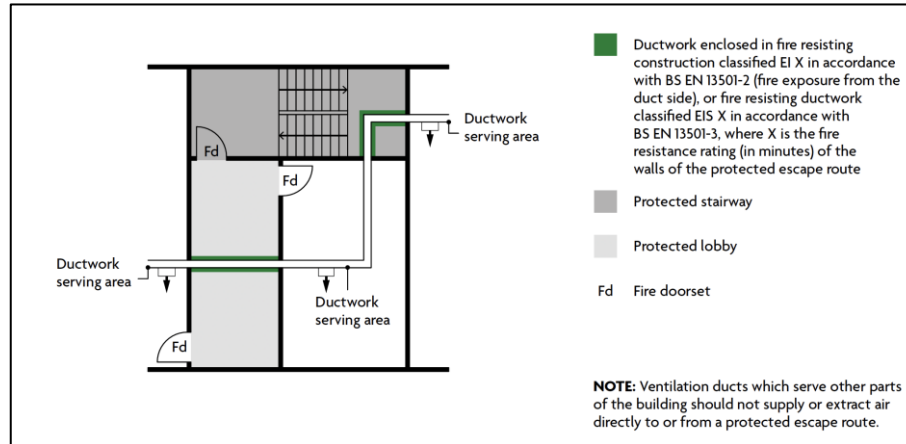


Figure 5 Ductwork passing through protected routes (Method 2 or Method 3)

Method 4 may be used for extract ductwork passing through the enclosures of protected escape routes, both where the ductwork does and does not serve the escape route (Figure 14 is an example of where ductwork serves an escape route).

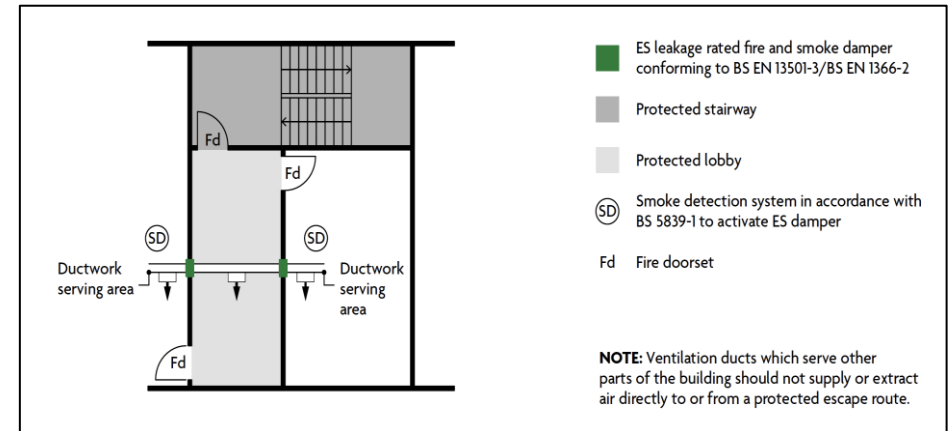


Figure 6 Ductwork passing through protected routes (Method 4)

6.6 Fire Stopping

If a fire separating element is to be effective, then every joint, imperfection of fit, or opening to allow services to pass through the element, should be adequately protected by sealing or fire stopping so that the fire resistance of the element is not impaired.

Fire-stopping is used for sealing apertures and imperfections of fit, or design tolerance between fire resisting walls, floors and ceilings to restrict the passage of fire and smoke. Fire-stopping products should have at least the same fire resistance as the separating elements into which they are installed. Examples can be seen below:

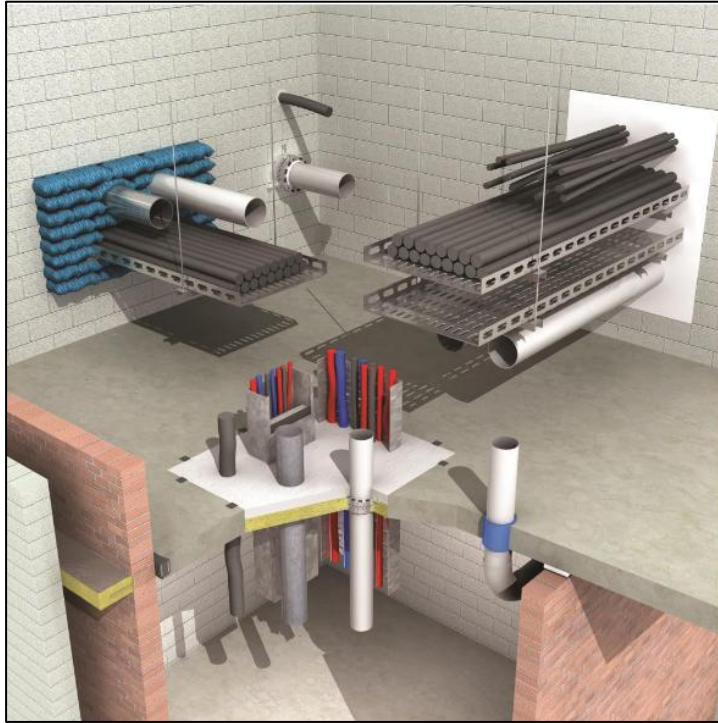


Figure 7 - Examples of fire stopping provisions.

Proprietary, tested fire-stopping and sealing systems are available and may be used. Different materials suit different situations, and not all are suitable in every situation. Other fire-stopping materials include the following.

- a) Cement mortar.
- b) Gypsum-based plaster.
- c) Cement-based or gypsum-based vermiculite/perlite mixes.
- d) Glass fibre, crushed rock, blast furnace slag or ceramic-based products (with or without resin binders).
- e) Intumescent mastics.

These may be used in situations appropriate to the particular material. Not all materials will be suitable in every situation. When undertaking any new fire stopping works it is recommended that the following documents are referred to:

- Ensuring Best Practice for Passive Fire Protection in Buildings – Association for Specialist Fire Protection (ASFP) (10).
- ASFP Red Book Fire Stopping: Linear joint seals, penetration seals & cavity barriers (11).

6.7 Concealed Spaces (cavities)

Concealed spaces and cavities in the construction of the building provide a route for smoke and flame spread, especially in voids above and below ceilings/floors. As the spread of smoke or flames would be concealed and unnoticed it presents a greater danger and risk of becoming developed prior to being noticed than if it occurred in the open.

Every cavity barrier should provide a minimum fire resistance of 30 minutes of Integrity and 15 minutes of Insulation. However, cavity barriers in a stud wall or partition or provided around openings may be formed of:

- Steel at least 0.5mm thick;
- Timber at least 38mm thick;
- Polythene-sleeved mineral wool, or mineral wool slab, in either case under compression when installed in the cavity;
- Calcium silicate, cement based or gypsum-based boards at least 12mm thick.

Concealed spaces and cavities in the construction of the building provide a route for smoke and flame spread, especially in voids above and below ceilings/floors. As the spread of smoke or flames would be concealed and

unnoticed it presents a greater danger and risk of becoming developed prior to being noticed than if it occurred in the open.

The unseen spread of fire or smoke via voids and cavities can be a threat to occupants if it bypasses compartment boundaries or elements protecting the means of escape. Cavity barriers are required to sub-divide all cavities to restrict the spread of smoke and flame through the building.

The provision of cavity barriers is outlined in Section 9 of ADB and sets out maximum dimensions of cavities.

Every cavity barrier should provide a minimum fire resistance of 30 minutes Integrity and 15 minutes Insulation.

The provision of cavity barriers is illustrated in the figure below.

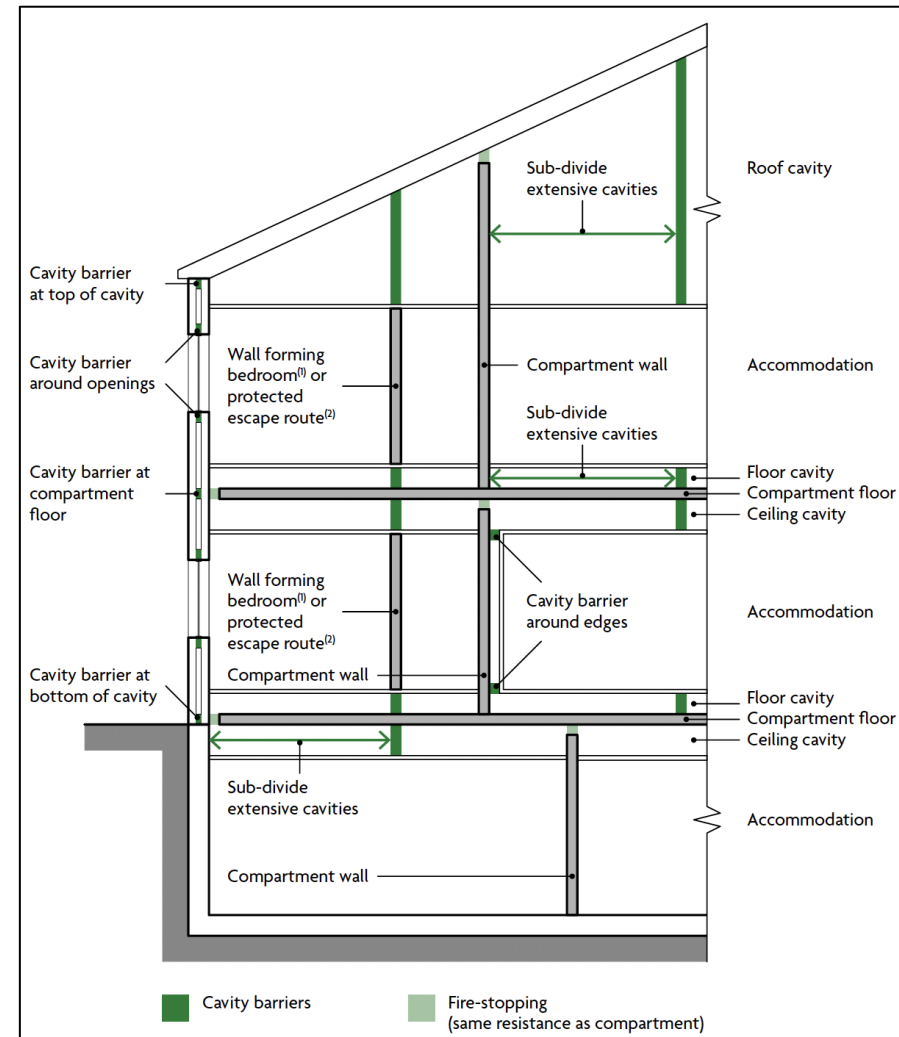


Figure 8 - Examples of fire stopping provisions.

6.8 Fire Doors

Fire Doors are required to have a fire resistance requirement of Integrity 'I' only. The requirements for fire doors are set out in Table 6 below:

Table 7 Fire resistance requirements for fire doors

Location	Fire Resistance Rating
Fire-fighting stair doors	FD60S
Firefighting lift doors	FD60S
Flat entrance doors	FD30S
Flat protected hallway doors	FD30S
Protected stairway doors	FD30S
Service riser shaft doors	FD60S
Service riser cupboard doors	FD30S
Store cupboard doors	FD30S

Fire doors can only operate correctly if they are fully closed at the time of fire. As a result, all fire doors, except those leading to a cupboard or service duct (both of which are normally kept locked shut), should be fitted with a self-closing device.

All fire door sets should be 3rd party certified products that have demonstrated performance through fire testing. Fire doors should be installed by 3rd party accredited contractors.

7. External Fire Spread

7.1 Functional Requirement

‘The external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of the building. The roof of the building shall adequately resist the spread of fire over the roof and from one building to another, having regard to the use and position of the building’.

7.2 Construction of External Walls

The external surface (i.e. outermost external material) of external wall should comply with the following:

Table 8 Reaction to fire performance of external surface of walls

Building type	Building height	Less than 1000mm from the relevant boundary	1000mm or more from the relevant boundary
Relevant building		Class A2-s1,d0 ¹ or better	Class A2-s1,d0 ¹ or better
All ‘residential’ purpose groups (purpose groups 1 and 2)	More than 11.0m	Class A2-s1,d0 ² or better	Class A2-s1,d0 ² or better
	11m or less	Class B-s3, d2 ² or better	No provisions
1. The restrictions for these buildings apply to all the materials used in the external wall and specified attachments. 2. Profiled or flat steel sheet at least 0.5mm thick with an organic coating of no more than 0.2mm thickness is also acceptable.			

7.2.1 Materials and products

In a building with a storey 18m or more in height, any insulation product, filler material (such as the core materials of metal composite panels, sandwich panels and window spandrel panels but not including gaskets, sealants and similar), etc. used in the construction of an external wall should be class A2-s3, d2 or better.

7.2.2 Balconies

In buildings that include a ‘residential’ purpose (purpose groups 1 and 2) with a storey 11m or more in height balconies should meet either of the following conditions.

- a) Only contain materials achieving class A1 or A2-s1, d0, except for any of the following.
 - i. Cavity trays when used between two leaves of masonry.
 - ii. Intumescent and fire-stopping materials where the inclusion of the materials is necessary to meet the requirements of Part B of Schedule 1 to the Building Regulations 2010.
 - iii. Membranes.
 - iv. Seals, gaskets, fixings, sealants and backer rods.
 - v. Thermal break materials where the inclusion of the materials is necessary to meet the thermal bridging requirements of Part L of Schedule 1 to the Building Regulations 2010.
 - vi. Any material achieving class A1fl or A2fl-s1 when it forms the top horizontal floor layer of a balcony and is provided with an imperforate substrate under it which extends to the full size of the class A1fl or A2fl-s1 material.
 - vii. Electrical installations.
 - viii. Fibre optic cables.
- b) Achieve both of the following conditions.

- i. Have an imperforate soffit that extends to the full area of the balcony, achieves a minimum REI 30 rating and is constructed of materials achieving class A2-s1, d0 or better.
- ii. Materials achieving class B-s1, d0 or worse extending beyond the boundary of a single compartment should include a band of material rated class A2-s1, d0 or better, a minimum of 300mm in width centred on that boundary line

Westminster Court is estimated to be 21.12m in height to the uppermost occupied floor slab. From a visual external inspection the external walls of the block appear to be of masonry construction to the original build, this can be seen in Figure 9 illustrated below.

Specific information relating to the external wall build ups in place is not provided. Therefore, the external walls materials cannot be verified. As these areas are existing it is expected that the fire performance of the walls would be considered as part of the fire risk assessment process and be informed by a Fire Risk Appraisal of External Walls (FRAEW) in line with PAS 9980:2022.



Figure 9 Existing External Wall

7.3 Space Separation

The building design must ensure that fire spread does not occur from one building to a neighbouring building. The potential radiating area of a building is a key factor in this analysis.

The boundary that the wall faces is the relevant boundary. This may be the site boundary, the centre line of a road, railway or other dividing feature, or a notional boundary between two buildings. When assessing the potential for fire spread between buildings, a full compartment fire is usually assumed.

Elevation drawings have not been provided to assess the amount of unprotected area provided to building compartments. However, it is not expected that any changes to the external walls of the existing building will be made. It is assumed that suitable requirements are met for the existing façade due to the following reasons:

- The presence of floor-by-floor compartmentation means the radiating compartment would be relatively small and limited to the size of a single apartment.
- The boundary distances to all elevations are an existing condition which will have previously been subject to assessment.

Taking these points into consideration, further assessment of the space separation at Westminster Court is not considered necessary.

7.4 Roof Coverings

A roof is classed as an external wall where it is pitched at an angle greater than 70° to the horizontal.

Roof coverings refer to the external material layers, not the roof structure itself.

Separation distance is the minimum distance from the roof, or part of the roof, to the relevant boundary. Table 10 sets out separation distances by the type of roof covering and the size and use of the building based on current guidance and the guidance at the time of build.

Table 9 Provisions for roof coverings

Designation of covering of roof or part of roof (European Class)	Minimum distance from any point on relevant boundary			
	Less than 6m	At least 6m	At least 12m	At least 20m
B _{ROOF} (t4)	Acceptable	Acceptable	Acceptable	Acceptable
C _{ROOF} (t4)	Not Acceptable	Acceptable	Acceptable	Acceptable
D _{ROOF} (t4)	Not Acceptable	Acceptable ⁽¹⁾⁽²⁾	Acceptable ⁽¹⁾	Acceptable
E _{ROOF} (t4)	Not Acceptable	Acceptable ⁽¹⁾⁽²⁾	Acceptable ⁽¹⁾	Acceptable ⁽²⁾
F _{ROOF} (t4)	Not Acceptable	Not Acceptable	Not Acceptable	Acceptable ⁽²⁾⁽³⁾

NOTES:

Separation distances do not apply to enclosed/covered walkways.

Polycarbonate and uPVC rooflights that achieve a class C-s3, d2 rating by test may be regarded as having a B_{ROOF}(t4) classification.

1. Not acceptable on any of the following buildings.

- Dwellinghouses in terraces of three or more dwellinghouses.
- Any other buildings with a cubic capacity of more than 1500m³

2. Acceptable on buildings not listed in (1) if both of the following apply.

- Part of the roof has a maximum area of 3m² and is a minimum of 1500mm from any similar part.
- The roof between the parts is covered with a material rated class A2-s3, d2 or better

8. Access and Facilities for the Fire Service

8.1 Functional Requirement

'The building shall be designed and constructed so as to provide reasonable facilities to assist firefighters in the protection of life. Reasonable provision shall be made within the site of the building to enable fire appliances to gain access to the building'.

8.2 General

Fire-fighting facilities generally include, where appropriate:

- The provision of vehicular access for fire appliances to the perimeter of the building or site;
- Provision of easy and speedy entry points to the site and/or the interior of the building for fire-fighters and their equipment;
- Provision of and access to sufficient supplies of a fire-fighting medium, usually water;
- Means of enabling fire-fighters, once they have entered a building, to reach any point within that building in the shortest possible time, including the provision of fire-fighting lifts, where appropriate;
- Means of ensuring that once firefighters have arrived at a location within a building, they can remain there in relative safety whilst they carry out their fire-fighting operations;
- Provision for fire and rescue service communications;
- Provision of facilities to release, or extract, smoke and heat from the building or site;
- Provision for removing spent fire-fighting extinguishing medium.

8.3 Vehicle Access

Every building should be provided with suitable access for firefighting purposes, roadways should be constructed to allow access for fire

appliances, and entry points to buildings should be readily identifiable to the fire and rescue service.

Firefighting vehicle access is provided via Brighton Road with entry provided to the side elevation.

Table 10 - Fire service vehicle access route specification

Appliance Type	Minimum Width of Road Between Kerbs (m)	Minimum Width of Gateways (m)	Minimum Turning Circle Between Kerbs (m)	Minimum Turning Circle Between Walls (m)	Minimum Clearance Height (m)	Minimum Carrying Capacity (tonnes)
Pump	3.7	3.1	16.8	19.2	3.7	12.5
High Reach	3.7	3.1	26.0	29.0	4.0	17.0
NOTES: 1. Fire appliances are not standardised. The building control body may, in consultation with the local fire and rescue service, use other dimensions. 2. The road base can be designed to 12.5 tonne capacity. Structures such as bridges should have the full 17-tonne capacity. The weight of high reach appliances is distributed over a number of axles, so infrequent use of a route designed to accommodate 12.5 tonnes should not cause damage.						

8.4 Access to Fire Mains

Westminster Court is provided with dry fire mains, located in the communal lobby enclosure. At the time of construction, guidance specified that access for a pumping appliance to within 18m of each fire main inlet connection point. The inlet should be visible from the appliance. The inlets provided are located on the face of the building at ground floor level, with vehicle access provided adjacent to the inlets. A Fire hydrant is located on Brighton Road, opposite Hampton Court.

An overview of the fire service access is provided below.



Figure 10 – Fire service access

8.5 Access to buildings for firefighting personnel

As Westminster Court has a height of more than 18m above the fire service access level, ADB would recommend the provision of a firefighting shaft containing a Firefighting lift and dry rising main (DRM).

In the case of Westminster Court, a dry rising main and passenger lift with firefighter controls is provided, accessed from the residential lobby on each floor.

It is generally accepted that the firefighting lobby in residential premises can be omitted if the distance from the firefighting lift to the stair is less than 7.5m. However, when omitting the lobby; the firefighting shaft serving flats, both guidance at the time of construction and currently specifies that outlets from the fire main should be located within the firefighting stairway. This is not the case as the dry rising main is accessed from the residential lobby.

At the time of construction guidance recommended that dry rising main outlets should be sited as close as possible to the access stair or the fire fighting lift. Recognising that the DRM is positioned between the stair and the firefighting lift compliance with guidance at the time of construction is assumed.

As this is an existing building it is expected that the Fire and Rescue Service would have been consulted regarding the provision, access and facilities for the fire service at the time of build. It is recommended that consultation is held with the enforcing fire authority to confirm that the existing arrangement is suitable for them to mount fire service operations.

8.6 Operational Information for the Fire and Rescue Service

The Fire Safety (England) Regulations 2022 made it a legal requirement from 23 January 2023 for existing high-rise residential buildings in England to have a secure information box installed on the premises.

The regulations require responsible persons to install a suitably secure information box in or on their high-rise building. They will also be required to provide in the box:

- their UK contact details
- the UK contact details of any other person who has the facilities to and is permitted to access the building as the responsible person considers appropriate

- copies of the building's floor plans – which identify specified key fire-fighting equipment
- a single page block plan - which identifies specified key fire-fighting equipment

Access should be given to the fire and rescue service. Boxes should be maintained, and their contents kept up to date in line with the duties imposed by the regulations and the Fire Safety Order.

8.7 Wayfinding Signage

Wayfinding signage should be provided to assist the fire service with the identification of each floor and flats in each block, in accordance with the requirements of The Fire Safety (England) Regulations 2022.

The floor identification signs should meet all of the following conditions.

- 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.
- 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.
- 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.
- 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.
- The text should be on a contrasting background, easily legible and readable in low level lighting conditions or when illuminated with a torch.

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

of the following conditions.

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

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 of the following conditions.

- 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.
- The wording should take the form Flats X–Y, with the lowest flat number first.
- The text should be in sans serif typeface with a letter height of at least half that of the floor indicator sign.
- The wording should be supplemented by arrows when flats are in more than one direction.
- 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.

9. Fire Risk Management

9.1 General

Under the Regulatory Reform (Fire Safety) Order 2005 (RRO) every owner, occupier and operator of premises is required to adequately manage the safety of the areas under their control. Under this legislation the 'Responsible Person(s)' must ensure that the necessary level of general fire precautions is implemented in the occupied building. The fire authority having jurisdiction has the power to inspect the premises to check that the Responsible Person(s) comply with the duties under the Order and that the Responsible Person(s) have carried out a suitable and sufficient fire risk assessment and acted upon the significant findings of that assessment.

This Fire Strategy report should be used as a key source of information to inform future fire risk assessments and must be made available to anyone carrying out a fire risk assessment of the premises. Similarly, the principles and provisions of this fire strategy must be put into practice when the building is in use. If any subsequent variation to the design fire strategy is to be introduced a fire risk assessment must be carried out which considers the implications of any change on all aspects of the fire safety arrangements.

The aims of this fire strategy are twofold:

1. To determine how the building meets the functional requirements of the Building Regulations. Therefore, providing a full understanding of the fire safety measures to support the building works.
2. Set out the fire safety provisions to support the Responsible Person with all ongoing fire risk management.

Where this fire strategy shows that compliance with Part B of the Building Regulations was achieved, then the fire safety measures of the building, its

equipment and facilities are likely to achieve compliance with the relevant requirements of the RRO, if maintained and managed correctly and effectively.

9.2 Ongoing Fire Risk Management

The Responsible Person and their appointed competent person, have ongoing duties to manage fire safety within their building.

General

The primary role of the fire safety manager involves preventing fires by creating an environment that minimizes the risk of fire ignition and limits the development of any fires that do occur. Effective fire prevention is as crucial as ensuring the functionality of fire safety systems. Maintaining furniture, furnishings, decor, and equipment is also equally important for occupant safety as maintaining fire safety equipment.

To prevent fires, the Responsible Person should:

- Monitor occupant behaviour.
- Oversee smoking policies.
- Implement effective housekeeping routines.
- Manage waste disposal practices.
- Reduce hazards related to combustible contents, furnishings, and surface finishes.
- Mitigate risks associated with construction materials and components.
- Establish standards for purchasing furniture, furnishings, and fittings.
- Avoid conditions that could lead to gas and dust explosions.
- Maintain furniture, furnishings, decor, and equipment.

- Review and assess potential fire initiation and propagation methods and their consequences.
- Ensure integration with other systems, such as ventilation and communications.
- Evaluate risks from new equipment, processes, or technologies.
- Control work permits and associated procedures.
- Conduct training and education programs.
- Establish and maintain inspection and security procedures outside of regular hours to prevent arson.
- Supervise and instruct contractors and subcontractors.
- Perform routine checks, inspections, and maintenance of equipment that could cause fires, particularly heat-generating equipment, cable chafing, self-heating, and fuel supplies.

Separate teams may be necessary to monitor various hazard areas effectively. Regular inspections should be documented in the fire safety manual.

Smoking is a significant risk factor and is legally prohibited in public buildings in many countries, including the UK. Where legal prohibitions do not exist, smoking should be restricted to designated areas, and appropriate fire-safe ashtrays and bins should be provided.

Housekeeping

Good housekeeping is an essential ingredient in fire safety management. It can reduce the chance of a fire starting, reduce the potential rate at which a fire can grow and the size it can reach, and ensure that the fire protection features in a building function as intended in the event of a fire. There are two primary aspects to housekeeping: reducing the chances of a fire developing or starting and protecting escape routes.

Reducing Ignition Sources

Potential ignition sources should be identified and controlled, for example:

- a) smoking. Where smoking is permitted, suitable ashtrays should be provided. Illicit smoking should be controlled by appropriate management and building design;
- b) the use of naked flames such as candles, or heaters using naked flames;
- c) processes involving hot works;
- d) cooking;
- e) misused or faulty electrical equipment;
- f) overheated or worn cables;
- g) lighting displays, such as halogen lights placed near flammable material.

All equipment should be installed, maintained, used and managed in an appropriate manner and by competent persons. Staff training should support this. Particular care should be taken with electrical equipment.

Controlling Fuel Load

Measures should be taken to control the risk from fire caused by the presence of combustible material, including as many of the following as are appropriate.

- a) Reduce the fire load, e.g. by replacing bottled gas heating with electric heating sources or reducing the amount of stock stored in a building.
- b) Alter the way goods are stored. A fire will grow significantly more quickly in goods stored vertically.
- c) Only store goods and furnishings in an appropriate manner, e.g. in dedicated store rooms.

- d) Ensure that all highly flammable substances are used and stored safely, and, if necessary, in appropriate storage containers.
- e) Control the amount and storage of rubbish, storing it in a safe location away from buildings, preferably in a designated area.
- f) Remove redundant services, such as communication cables, particularly in voids, as these can constitute a significant fire load.
- g) Construct display fittings, linings, special displays that are not readily ignitable. Site them in such a way that exits are kept clear and unobstructed, and exit signs are visible from the relevant part of the premises.

Maintenance of Fire Protection Measures

It is essential that the fire protection measures in a building are able to carry out their function in a fire, and they should therefore be checked periodically. Daily inspections should be carried out to ensure that the fire protection measures are available at all times. Such inspections should include, but are not necessarily limited to, the following.

- a) Escape routes should be kept clear at all times. Storage of goods and equipment could block exits and provide an unwanted fire load and potential source of ignition.
- b) Door locks, panic bars and automatic door release mechanisms should be maintained so that they are easily openable in an emergency.
- c) Fire alarm manual call points and other 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.
- d) All fire safety equipment, e.g. fire alarms, emergency escape lighting, automatic fire suppression systems and fire extinguishers, should be maintained and tested in accordance with the relevant standard by competent persons.

- e) Certain parts of the building fabric can contain flammable elements which can significantly contribute to fire spread. Checks should be made to ensure that any damaged panels are repaired.

Arson

Good security arrangements can reduce the risk of arson, but care should be taken to ensure that they do not prejudice the means of escape. The Responsible Person should ensure that any measures intended to prevent unauthorized access do not hinder the entry of the fire and rescue service to fight the fire or effect the rescue of trapped persons.

Conflicts Between Security and Means of Escape

There can be a conflict between security arrangements and means of escape, and the Responsible Person should ensure that security arrangements do not prevent occupants from reaching a place of relative or ultimate safety. Security of the building can be in both directions: ingress and egress.

Security arrangements should also take into account the needs of the fire and rescue service who might have to enter the building to effect rescue or assist with evacuation.

Contractors, Subcontractors and Hot Work

All activities of outside contractors should be strictly supervised and controlled to minimize any additional fire risk. The supervision should include checks of any area where hot work is to be undertaken or where contractors have been engaged. The Responsible Person, or a delegated representative, should ensure that all necessary precautions against fire are taken, and should instruct contractors in fire safety procedures. Arrangements should also be made for the safety of the contractors themselves in the event of fire.

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