Fire Strategy Block J
November 2023

ABERFELDY VILLAGE MASTERPLAN

Aberfeldy Village Masterplan

BLOCK J

STAGE 3 FIRE STRATEGY

November 2023

/

Introba

510478.000

Issue	Description	Date	Prepared By	Signed Off
01	Stage 3 Issue	06/04/2022	AK	SB
Rev 1	Incorporating latest crib sheet introduction	20/09/2023	DE	SB
Rev 2	Incorporating design team comments	21/09/2023	DE	SB
Rev 3	Incorporating GLA comments	06/11/2023	DE	SB

Project Office:

Introba Consulting Ltd (formerly Elementa Consulting)
150 Holborn
London EC1N 2NS
United Kingdom
+44(0)203 697 9300

Project Contact:

Simon Burch EngTech MIFireE – Associate Principal
Simon.Burch@ introba.com

Disclaimer

Table of Contents

1 Introduction

1.1 Scope

This Stage 3 Fire Strategy assesses Block J of the Aberfeldy Village development in terms of fire safety.

It is intended for discussion between the design team and to assist the design team in developing the layouts to ensure that once a Building Regulations application is made, all the fire safety elements will be incorporated into the plans.

This report is based on the guidance in Approved Document B (ADB), 2019 edition incorporating the 2020 amendments.

This guidance has been developed to ensure the highest standard of fire safety is designed into the building development at an early stage of design.

Consideration has also been given to The London Plan dated March 2021, which replaces all previous versions. The London Plan is legally part of each of London's Local Planning Authorities' Development Plan and must be taken into account when planning decisions are taken in any part of Greater London. Planning applications should be determined in accordance with it, unless there are sound planning reasons (other material considerations) which indicate otherwise. Any sections within the report that are part of a recommendation from The London Plan shall be highlighted in blue.

1.2 Building Description

The Site is located in Poplar, within the administrative boundary of the London Borough of Tower Hamlets. Block J is addressed in this report which is solely residential, and consists of a six storey apartment block (Ground + 5 upper levels) and a row of terraced houses.

This report supersedes the 510478 - Aberfeldy Masterplan Stage 3 Fire Strategy Block J dated 06/04/2022 previously submitted in support of the Hybrid Application (LBTH Ref: PA/21/02377/A1 and GLA Ref: 2023/0300/S3) and should therefore be read on a standalone basis.

Following a resolution to refuse planning permission by the London Borough of Tower Hamlets (LBTH) Strategic Development Committee (SDC) in February 2023, and the subsequent direction that the Mayor of London will act as the local planning authority for the purposes of determining the Hybrid Application, the design of the scheme has been amended to accommodate second staircases in all buildings over 18m in height.

For the sake of completeness only it should be noted that the above referenced amendments follow previous amendments to the Hybrid Application, made prior to its consideration by the LBTH SDC, the assessments of which were set out within previous revisions of this 510478 - Aberfeldy Masterplan Stage 3 Fire Strategy Block J – Rev 3. In summary the previously assessed charges were: the incorporation of Jolly's Green within the red line boundary, the removal of the previously proposed Block A3 and associated increase in open space and play space, an increase in the number of affordable rented family homes, and the inclusion of second staircases in Plots F & I, which are part of the detailed proposals and are addressed in a separate fire statement.

Further information is set out within the accompanying Covering Letter (as prepared by DP9 Ltd, dated November 2023) and the updated Planning Statement (as prepared by DP9 Ltd, dated November 2023).

1.3 Fire Strategy Summary

The proposals outlined in this document demonstrate a level of fire safety equal to or greater than the general standard as required by compliance with the recommendations in ADB.

The residential occupancies have been separated with fire resisting construction, equal to the structural fire resistance required for the residential block. Other elements of the fire strategy are summarised below:

- The residential accommodation will implement a stay-put policy.
- Structural fire protection will be provided in accordance with Table B4 of ADB. Each floor will be designed as a compartment floor.
- Sprinkler coverage is provided to the residential dwellings and shall be extended to cover the amenity areas (bike storage etc).
- The apartment block is provided with a dry riser in the escape stair.

1.4 Policy D12 Fire Safety Statement

1.4.1 Declaration of Compliance

In the interests of fire safety, the proposed technical design content produced for the planning application complies with all the relevant legislation and requirements of London Plan Policy D12 and D5(B5) as summarised in the following sections.

1.4.2 Competency and Qualifications of Assessors

The author of this report complies with Section 3.12.9 of Policy D12 of the London Plan and Section 5.2.3 of the London Plan Fire Safety Guidance as outlined below.

Simon Burch BA EngTech MiFireE– Associate Principal

Simon is Associate Principal and Fire Engineer at Introba registered with the Engineering Council and a Member of the Institution of Fire Engineers (MiFireE) with a wealth of experience on a variety of high-rise residential developments for major housing clients across London and the South East. He is the lead author of fire strategies and responsible for all stages of the fire engineering design from the initial client contact through the tendering phase, across construction and the ongoing management and maintenance of fire safety systems and passive fire protection.

He has 23 years of operational service with the Fire and Rescue Service and completed all relevant training and development to act as Incident Commander to manage operational response to building fires.

He has 12 years experience as a Technical Fire Safety Officer with the Fire Service managing a Team of Inspecting Officers and leading on fire engineering design review and consultation, reviewing and commenting upon Building Regulations submissions and technical inspection to confirm compliance to the requirements of the Regulatory Reform (Fire Safety) Order including construction of high rise, multi-occupied residential buildings. This included experience in response to the Grenfell disaster for completing review of façade construction of relevant buildings in the Authority area, reporting to DCLG and agreeing any remediation and interim measures. Experience also included involvement in investigation of fires in multi-occupied buildings of national significance including consultation with BRE and other expert investigators to identify and review construction defects. Completion of all relevant Technical Fire Safety training at the Fire Service College including a Level 5 Diploma in Fire Engineering

He has Three and a half years experience with Introba Consulting involving input to design and fire strategy for major residential, commercial and mixed use projects. He heads the London Office of Fire Engineers for Introba and has overall responsibility for the fire engineering delivery.

1.4.3 The Building's Construction Method and Products and Materials Used

Structural fire protection will be provided in accordance with Table B4 of ADB. Each floor will be designed as a compartment floor. Further information is provided in Sections 5.1 and 5.2.

All materials within the external wall construction for the residential apartment block will be non-combustible as discussed in Section 6.3.

As the design develops these will be catalogued to ensure that once the building control process is started, the information will be available for review. This also applies to the manufacturer's details, which will be included in the O&M's and detailed further as the design develops.

1.4.4 Means of Escape for All Building Users and Evacuation Strategy

The residential apartments will implement a stay-put policy.

To assist with the evacuation of disabled occupants as recommended in the London Plan dated March 2021, one evacuation lift will be provided to provide a dignified escape for disabled occupants within the apartment block. This is discussed further in Section 3.4.

1.4.5 Passive and Active Fire Safety Measures

The apartments and houses will be provided with an automatic fire alarm and detection system in accordance with BS5839 Part 6.

The residential common corridors at the upper levels within the apartment block will be provided with a natural smoke shaft, 1.5m^2 in size.

Sprinkler coverage is provided to all the residential apartments and shall be extended to cover the ancillary accommodations.

The apartments shall all be enclosed in fire rated construction with fire doors, as will the staircase, lift, and risers. This is discussed in detail in Section 5.2.1. The ancillary accommodation shall also be enclosed in fire rated construction and is accessed from outside.

Any penetrations through the compartment walls shall be fire stopped.

1.4.6 Access and Facilities for the Fire and Rescue Service

A dry riser inlet will be located on the facade of the apartment block and adjacent to the entrance. It will also be within 18m of the fire appliance parking location.

All parts of the floor plate will be covered within 45m when measured along a suitable route for laying a hose from a dry riser outlet or within 45m of the fire appliance parking location at the fire tender access level as discussed in Section 7.

Hydrants will be provided within 90m of the wet riser inlet in accordance with ADB.

1.4.7 Site Access for the Fire and Rescue Service

Fire tender access will be provided in accordance with the ADB and LFB guidance as discussed in Section 7.

1.4.8 Future Development of the Asset and the 'Golden Thread' of Information

A Regulation 38 pack shall be submitted to the end users upon handover. This will contain all of the details of the building fire safety / protection measures. Any changes to the buildings following their construction will need to maintain the original design intent of this fire strategy and be assessed by a suitable competent person, so as not to reduce the built-in fire safety measures. Whilst it is not possible at this time to specify exactly what will be in this document, it will contain as a minimum the fire strategy (including the evacuation strategy), fire drawings, information on the systems included including operational manuals and maintenance and testing regimes.

As this report is produced for planning purposes it outlines the principles for the ongoing management, maintenance and monitoring of the buildings from a fire safety perspective and this will be further developed with the design team as the design progresses. Further details are provided within Section 8 which are considered sufficient at this stage.

2 Legislation

2.1 Building Regulations 2010

The development will consist of a new building, hence, will be undergoing building works as defined in Regulation 3 of The Building Regulations 2010. The building will therefore have to comply with the requirements of Schedule 1 of the Regulations.

The requirements of the Schedule relating to fire safety are:

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

The principle aim of the Building Regulations is to ensure the health and safety of people in and around a building.

The 'requirements' set out broad objectives or functions, which the individual aspects of the building design and construction must set out to achieve. They are therefore often referred to as 'functional requirements' and are expressed in terms of what is 'reasonable', 'adequate' or 'appropriate'.

2.2 Approved Document B (ADB)

The Ministry of Housing, Communities and Local Government's (MHCLG) has produced a number of guidance documents to assist designers in meeting the relevant requirements of the Building Regulations. These 'Approved Documents' provide guidance on different aspects of the Regulations. Approved Document B – Fire safety (ADB) provides general design guidance on ways in which the functional fire safety requirements can be satisfied.

The Building Regulations 2010 require reasonable standards of health and safety for persons in or about the building to be provided.

However, as with many "deemed to satisfy" documents, the ADB is general in its approach and cannot contain sufficient detail for the multiplicity of building designs and varieties of building fire loads and occupancies encountered in practice.

The recommendations presented in the ADB provide guidance on how to satisfy the functional requirements of the Building Regulations. However, there is no obligation to adopt any particular solution contained in the document. The document recognises this and accepts that, if the requirement can be demonstrated to have been satisfied by alternative solutions, then this is equally acceptable.

2.3 Regulatory Reform (Fire Safety) Order

Once the buildings are occupied, the Regulatory Reform (Fire Safety) Order (RRO) becomes the controlling fire safety legislation.

The Order came into force on 1st October 2006 and revoked the existing Fire Precautions Act and the Workplace Regulations. Under this order it will be necessary for the owner/ occupier of the building to carry out and maintain a fire safety risk assessment.

The building management team will also be responsible under this order to ensure that the buildings' fire safety provisions are appropriately managed, maintained and tested over the whole life of the building.

2.4 Construction, Design and Management Regulations

Projects undertaken in the UK are subject to the requirements of the Construction (Design and Management) Regulations 2015 (CDM) or within the European Union, that particular country's interpretation of the European Union Directive.

This report defines the strategy for meeting the functional and performance requirements for fire safety in the finished building. It is intended to form part of the submission for approval under the Building Regulations, Part B (Fire safety). Where any conclusions or recommendations contained within this report specify particular materials, products or forms of construction these will have been assessed, in accordance with CDM Regulations 11 and 18 (duties for designers).

In the event that these involve significant residual risks or health and safety critical assumptions, this information will be made available to the CDM Coordinator. Where the architect or other consultants use all or part of this report to specify works, they are understood to be competent in alerting the Client, CDM Coordinator, Designers, Contractors and Building Occupier of issues arising under the CDM Regulations.

2.5 Statutory Consultation

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

The consultation should allow both parties to reach mutually compatible views on whether the building meets the requirements of both pieces of legislation. In the exceptional event that the fire authority propose to require physical changes to the building to meet the requirements of the Fire Safety Order, the building control body should make the applicant aware.

2.6 The London Plan

The London Plan is the statutory Spatial Development Strategy for Greater London prepared by the Mayor of London ("the Mayor") in accordance with the Greater London Authority Act 1999 (as amended) ("the GLA Act") and associated regulations.

The London Plan was published by the Mayor in March 2021 and forms the statutory spatial development strategy for Greater London. This report addresses the recommendations in Policy D5 (Inclusive Design) and Policy D12 (Fire Safety).

A Policy D12 statement is included in Section 1.5.

Any changes to the building following its construction will need to maintain the original design intent of this fire strategy and be assessed by a suitable competent person.

3 Means of Warning & Escape

Schedule 1 of the Building Regulations requires the following functional requirements to be met in respect of B1, Means of Warning and Escape:

> *"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."*

The general principle to be followed when designing for means of escape is that any person confronted by a fire within a building can turn away from it and make a safe escape; therefore, alternative means of escape should be available from most parts of the building.

3.1 Evacuation Strategy

Residential means of escape is somewhat different to many other types of buildings in that only the apartment that has a fire in it is immediately evacuated. The reasoning behind this is due to the level of compartmentation between each of the apartments and to reduce false alarms affecting all the people within the building. The Fire Service carries out evacuation of the other apartments if necessary. This also applies to the houses within Block J.

3.2 Travel Distances

The travel distances for the building should follow the recommendations of ADB, which is detailed in the table below.

Purpose Group	Accommodation	Travel within	Maximum travel distance (m)	
			In one direction	More than one direction
1(a)	Apartment	Within Apartment / Hallway	9m	N/A
	Common Areas	Within Common Corridor	7.5m	30m
7	Storage	Storage	25m	45m
	Plant Rooms	Escape within room	9m	35m
		Enclosed escape route	18m	45m

Table 1 –Travel distance requirements

3.3 Escape within Residential Accommodations

3.3.1 Escape within Apartments/Houses

All of the apartments are provided as two-storey apartments with every room accessed from an internal staircase. The protected entrance hallway/staircase will be provided as a 30-minute enclosure with FD20 fire doors.

The houses which form part of block J have either two or three upper storeys. In both cases, each will be provided with an internal stair which leads directly to outside at ground floor level. This will be provided as a 30-minute enclosure with FD20 fire doors.

3.3.2 Escape within Common Corridors

When the travel distances within the common corridor are up to 7.5m in a single direction of escape, the common corridor will be provided with automatic smoke venting to assist means of escape.

The travel distances within the common corridor are within 7.5m as can be seen on the following image. The corridor will be provided with a natural smoke shaft which will be a minimum of 1.5m^2 in size. This natural smoke shaft will rise at least 0.5m above any surrounding structures within 2m at roof level.

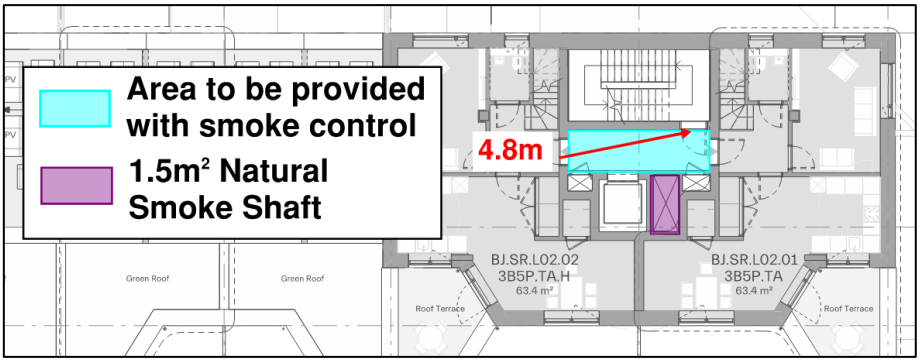

Figure 1 – Common Corridors – Block J

3.3.3 Vertical Escape

The storey exits leading into the staircase at each level are required to have a minimum clear width of 850mm. The final exits door at ground level should technically have a minimum clear width at least as wide as the associated staircase, however as the only occupants using the exit should be those in the apartment of fire origin it should be possible to reduce the residential final exit width down to a clear opening of 850mm.

The stairs of the block J apartment block should be a minimum of 750mm wide as it is not a firefighting stair, however in practice the stair will be at least 1000mm in width.

3.3.4 Final Exit Route

Approved Document B requires that any discharge paths from the staircase must be along a protected route with any access into adjacent accommodation being by way of a protected lobby. Cupboards and stores should not be directly accessed from the entrance lobby.

As can be seen on the following image, within the apartment block the stair leads directly to outside.

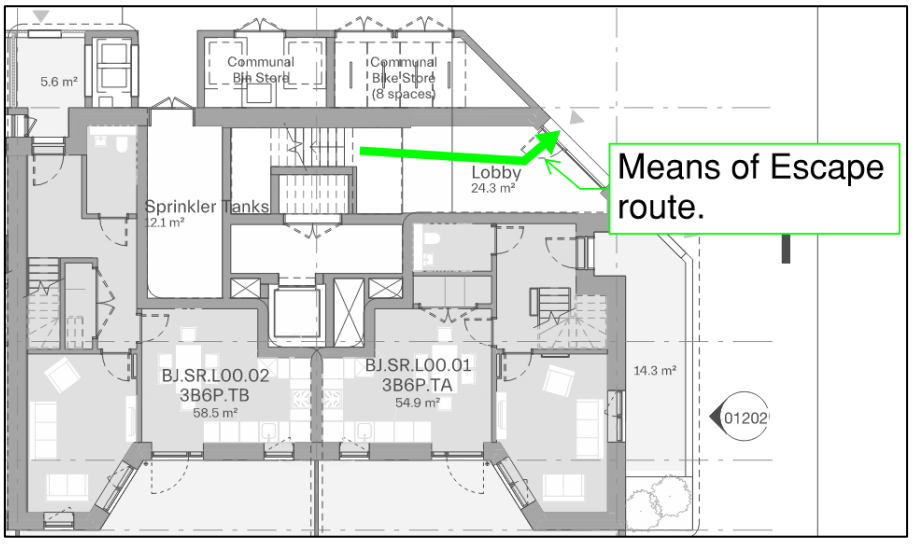

Figure 2 – Final exit route – Blocks J

3.3.5 Ancillary Accommodation

All ancillary accommodation is accessed from the outside with no direct communication from within the residential areas. As the spaces are small the travel distances are conformed to.

3.4 Disabled Evacuation

The residential accommodations on the upper levels do not require disabled refuges to be provided.

Policy D5 Inclusive design of the London Plan outlines that emergency carry down or carry up mechanical devices or similar interventions that rely on manual handling are not considered to be appropriate, for reasons of user dignity and independence. It suggests that the installation of lifts which can be used for evacuation purposes (accompanied by a management plan) provide a dignified and more independent solution.

Furthermore, Policy D12 Fire Safety recommends that in all developments where lifts are installed, Policy D5 Inclusive design requires as a minimum at least one lift per core (or more, subject to capacity assessments) to be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building.

However, an evacuation lift deemed to be fully compliant with the current regulations will require a full team of staff to operate, which is impractical for a residential scheme where there may not be sufficient permanent staff at all times. Therefore, it is considered reasonable to provide an evacuation lift that has dual power supply and allows a disabled occupant to descend to ground floor under fire service control should they see fit to utilise the lift for evacuation. This lift will be a minimum 1100mm x 1400mm in size.

The building management forms an integral part of the design and on-going functionality of the building after occupation. The building will have a management team whose responsibilities will include ensuring the fire safety strategy is adopted and enforced. One of the responsibilities of this team will be to develop a management strategy for the building. This strategy will incorporate details of how the building satisfies the requirements of the Equality Act 2010. The management strategy should include information on staff training, how disabled occupants will be evacuated in the event of a fire and identify key roles in ensuring they are assisted in a fire situation.

3.5 Fire Alarm & Detection System

3.5.1 Residential Accommodation

Apartments with protected entrance hallways/staircases should be provided with a Life safety system (L) minimum LD1 automatic fire detection and alarm system with a minimum grade D power supply, designed, installed and maintained in accordance with BS5839 Part 6. If the sprinkler system serving the apartment block has a flow meter at each floor as opposed to at the entrance to each apartment, these apartments will be required to have an LD1 fire detection and alarm system.

It is not considered that the private balconies will be required to have an additional sounder as even though they are accessed from one access room the sounder in the apartment will be able to alert the occupants in the balcony to a fire.

The system should be of Grade D1 if the apartments are to be rented accommodation and Grade D2 if they are to be owner occupied.

A smoke detection system should be provided in the common corridors on each floor to BS5839 Part 1 and to an L5 standard. The sole purpose of the detection system is to activate the smoke ventilation system. No sounders will be provided in the common areas.

The houses will be provided with a minimum LD2 automatic fire detection and alarm system with a minimum grade D power supply, designed, installed and maintained in accordance with BS5839 Part 6.

3.5.1 Ancillary Accommodation

The fire alarm and smoke detection within the stores, plant and refuse rooms should be designed in accordance with BS5839 Part 1 and be of type M/L3.

3.6 Emergency lighting

Emergency lighting as backup lighting should meet the recommendations of BS5266 Parts 1 and 7.

Final locations and routes shall be agreed during the design development.

3.7 Signage

Escape signage should follow the recommendations of BS5499. Further detail will be provided during the design development.

Wayfinding signage will also be required for the fire service and will be detailed as the design develops.

3.8 Manual Fire Fighting Equipment / Fire Extinguishers

Manual firefighting equipment will not be installed within the common parts of the residential accommodation nor the houses.

4 Internal Fire Spread (Linings)

Schedule 1 of the Building Regulations requires the following functional requirements to be met in respect of B2, Internal fire spread (linings):

"To inhibit the spread of fire within the building the internal linings shall:
a) adequately resist the spread of flame over their surfaces; and
b) have, if ignited, a rate of heat release which is reasonable in the circumstances.

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

4.1 Surface Linings

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

The wall and ceilings linings within the building should meet the recommendations outlined in the table below.

Location	**Class of Lining**
	European Class*
Small Rooms of area less than 4m² in residential accommodation	D-s3, d2
Other Rooms	C-s3, d2
Circulations spaces within dwellings	C-s3, d2
Other circulation spaces including the common areas of block of flats and commercial units	B-s3, d2
Note: * The European classifications are described in BS EN 13501-1.	

Table 2 – Surface lining requirements

For the purpose of these requirements, a wall includes the internal surfaces of internal and external glazing as well as any part of a ceiling which slopes at an angle greater than 70 degrees to the horizontal. Doors, door frames, window frames and frames in which the glazing is fitted, architraves and skirting are also exempt from these limitations.

The class of linings can be downgraded (but not less than D-s3, d2) in walls of rooms providing the total area of those parts in any one room does not exceed one half of the floor area of the room and subject to a maximum of 20m² in residential accommodation.

5 Internal Fire Spread (Structure)

Schedule 1 of the Building Regulations requires the following functional requirements to be met in respect of B3, Internal fire spread (structure):

1. *The building shall be designed and constructed so that, in event of fire, its stability will be maintained for a reasonable period.*
2. *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.*
3. *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 intended use of the building.*
4. *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.*

The requirements will be met;

a) If the loadbearing elements of structure of the building are capable of withstanding the effects of fire for an appropriate period without loss of stability;
b) If the building is sub-divided by elements of fire-resisting construction into compartments;
c) If any openings in fire-separating elements are suitably protected in order to maintain the integrity of the element; and
d) If any hidden voids in the construction are sealed and sub-divided to inhibit the unseen spread of fire and products of combustion, in order to reduce the risk of structural failure and the spread of fire, in so far as they pose a threat to the safety of people in and around the building.

The extent to which these measures are necessary is dependent on the use of the building, its size and on the location of the element of construction.

5.1 Fire Resistance of Elements of Structure

Premature failure of the structure can be prevented by provisions for loadbearing elements of structure to have a minimum standard of fire resistance, in terms of resistance to collapse or failure of load bearing capacity.

The period of fire resistance required in accordance with ADB is linked to the risk profile of the building considering the height of the top floor and whether the building is sprinklered or not. Where any element supports another the supporting element should possess at least the resistance of the other. Approved Document B defines an element of structure as:

- 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 galley
- an external wall; and
- a compartment wall.

The following are excluded from definition of an element of structure:

- Structure that supports only the roof, unless:
  - the roof performs the function of a floor, such as for parking vehicles, or as a means of escape, or
  - the structure is essential for the stability of an external wall which needs to have fire resistance.

The minimum level of structural fire resistance required for the apartment block is 60-minutes as the top floor is under 18m in height.

The minimum level of structural fire resistance required for the houses is 30-minutes for the two-storey houses, and 60-minutes for the three-storey houses. Where elements of structure support the party wall between houses, this will require 60-minutes fire resistance.

Where elements of structure support a building above, they should be provided with the structural fire resistance to at least that required for the building they support.

Any elements which only support themselves and or a roof can be non-fire rated.

5.2 Compartmentation

5.2.1 Residential Accommodation

All apartments should have 60-minute fire resistant compartment walls with FD30S self-closing front doors. The internal hallway/stair should be provided as 30-minutes fire resisting with FD20 doors. The internal stair within the houses will also achieve 30-minutes fire resistance with FD20 doors.

All floors should be compartment floors with a fire resistance equal to the structure.

The apartment block stairs should have a fire rating equal to the structure with FD30S doors.

The lift shaft and risers should have fire ratings equal to the structure with FD30 doors.

In order to assist with the evacuation of disabled occupants as recommended in the New London Plan dated March 2021, it is recommended that an evacuation lift be provided to provide a dignified escape for disabled occupants within the buildings. The evacuation lift in the apartment block will be provided in a 60-minute enclosure.

The final exit route from the stair to outside should be the same fire rating as the stair.

Openings in compartment walls should be limited to the passage of service ducts and access doors fitted with smoke seals. Where service ducts pass through compartment walls these will be provided with a fire barrier. All openings will be provided with a similar period of fire resistance to the wall they are provided within, and the fire doors are to be locked closed.

To protect the final exit routes from the building all wall construction within 1.8m of the final exit points will be fire rated to 30 minutes. In general, the final exit is acceptable providing there are two directions of discharge from the exit, however where escape is only possible in a single direction and the exit route in the open air is within 1.8m of the building then any glazing present should be fire rated glazing to 30 minutes (integrity only).

5.2.2 Ancillary Accommodation

Stores, plant and refuse rooms should be enclosed in 60 minutes fire resistance with FD30 doors. These are all accessed directly from outside.

5.3 Fire Stopping and Cavity Barriers

Openings in compartment walls should be limited to the passage of service ducts and access doors fitted with smoke seals. Where service ducts pass through compartment walls these will be provided with a fire barrier. All openings will be provided with a similar period of fire resistance to the wall they are provided within, and any fire doors are to be locked closed.

Any openings for services breaching compartment walls will be fire stopped (unless protected throughout their entire length with fire resisting material). Full fire stopping details will be developed as the design progresses.

Cavity barriers will be included in any cavity where there is a potential for unseen fire spread. The key areas that require cavity barriers are as follows:

- At the junction between an external cavity wall and a compartment wall that separates buildings. and at the top of such an external cavity wall.

- At the junction between an external cavity wall and every compartment floor and compartment wall.
- At the junction between a cavity wall and every compartment floor, compartment wall, or other wall or door assembly that forms a fire-resisting barrier.
- In a protected escape route, above and below any fire-resisting construction that is not carried full storey height.
- Within the void behind the external face of rain screen cladding at every floor level and on the line of compartment walls abutting the external wall.
- Within extensive voids greater than 20m in length.
- At the edges of cavities (including around openings, i.e., windows).

The cavity barriers should achieve 30 minutes fire resistance (i.e., 30 minutes integrity and 15 minutes insulation). Any penetrations through the cavity barriers will be either:

- Fitted with a proprietary sealing system.
- Pipes of limited diameters that are sealed with fire-stopping or sealed with sleeving of non-combustible pipe material.

5.4 Sprinklers

5.4.1 Residential Accommodation

Sprinklers will be provided to all residential accommodation as per the May 2020 amendment to ADB, which requires sprinklers for all residential apartments over 11m in height. This system will be in line with BS9251 (2021), category 3 system.

5.4.2 Ancillary Accommodation

Ancillary accommodation may be served by the residential sprinkler system providing it is within the restrictions of Table 4 of BS9251. If there are spaces greater than this, sprinkler coverage will need to be taken from the commercial BS EN 12845 system. All spaces are under this size and so it is not anticipated that the commercial sprinkler system for the site will cover this block.

6 External Fire Spread

Schedule 1 of the Building Regulations requires the following functional requirements to be met in respect of B4, External fire spread:

a) *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 building.*
b) *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.*

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

6.1 Unprotected Areas

The unprotected areas are the areas of the façade that are not fire rated (i.e. glazing, etc.), which should be sized so that fire spread is unlikely to occur to buildings on the adjacent site or to separate fire compartments on the same site.

The table below shows the result of the calculations for the worst-case scenario for each accommodation.

Facade / Compartment	**Actual Compartment (W x H)**	**Enclosing Compartment (W x H)**	**Required Boundary Distance (with 100% Unprotected Openings)**	**Available Boundary Distance**	**Acceptable Maximum % of unprotected openings**
Block J					
Level 00	North (9.15m x 3m)	12m x 3m	1.75m	>1.75m	100%
	South (9.15m x 3 m)	12m x 3m	1.75m	>1.75m	100%
	East (9.23m x 3 m)	12m x 3m	1.75m	>1.75m	100%
	West (12.6m x 3 m)	15m x 3m	2m	>1.2m	100%
Level 01-05	North (9.15 x 3 m)	12m x 3m	1.75m	>1.75m	100%
	South (9.15 x 3 m)	12m x 3m	1.75m	>1.75m	100%
	East (12.6 x 3 m)	15m x 3m	2m	>2m	100%
	West (12.6 x 3 m)	15m x 3m	2m	>2m	100%

Table 3 – External Wall unprotected areas assessment

6.2 External Wall Construction

The external envelope of the building should not be a medium for fire spread.

Block J is under 18m in height, and therefore as it is greater than 1m from the relevant boundary there are no restrictions on the external wall materials when referring to ADB.

However, it is advised that the apartment block of block J is considered the same way as the other apartment blocks on site to guard against any changes in guidance, and that the external wall build-up is of A2-s1, d0 classification or better. This will also ensure the apartment block complies with the relevant part of the Fire Safety Act 2021.

To protect the staircases from a fire on the floor plate any wall construction perpendicular to the stair core within 1.8m of the staircase should be fire rated equal to that of the fire protection to the stairs.

There is no restriction on the external wall materials of the houses. To completely separate the houses from the apartment block, the fire stopping between the apartment block and the terraces will be continued to the outer face of the cladding material.

6.3 Roofs

Roof coverings for the apartment block and the houses should be designed in accordance with Table 12.1 of ADB as shown in Figure 3 below.

Table 12.1 Limitations on roof coverings

Designation[1] of covering of roof or part of roof	Distance from any point on relevant boundary			
	Less than 6m	At least 6m	At least 12m	At least 20m
B_{ROOF}(t4)	●	●	●	●
C_{ROOF}(t4)	○	●	●	●
D_{ROOF}(t4)	○	●[2(3)]	●[2]	●
E_{ROOF}(t4)	○	●[2(3)]	●[2]	●[2]
F_{ROOF}(t4)	○	○	○	●[2(3)]

● Acceptable.
○ Not acceptable.

NOTES:

Separation distances do not apply to the boundary between roofs of a pair of semi-detached dwellinghouses and to enclosed/covered walkways. However, see Diagram 5.2 if the roof passes over the top of a compartment wall.

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

1. The designation of external roof surfaces is explained in Appendix B.
2. Not acceptable on any of the following buildings.
   a. Dwellinghouses in terraces of three or more dwellinghouses.
   b. Any other buildings with a cubic capacity of more than 1500m³.
3. Acceptable on buildings not listed in (1) if both of the following apply.
   a. Part of the roof has a maximum area of 3m² and is a minimum of 1500mm from any similar part.
   b. The roof between the parts is covered with a material rated class A2-s3, d2 or better.

Figure 3 - Limitations on Roof Coverings

Where the apartment block terraces on level 02 are above the accommodation below, this will be treated as BRoof(t4) as per the recommendations of BS8579, with the following figure demonstrating where this applies (the hatched areas are specified as BRoof(t4)).

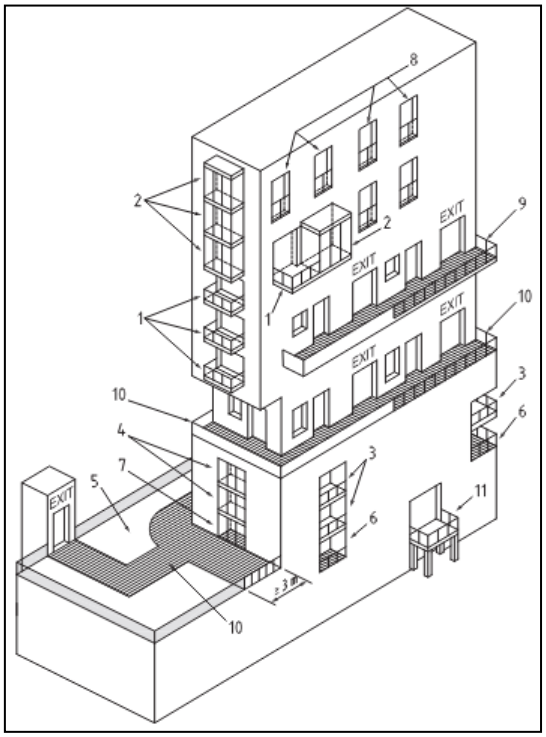

Figure 4 – Roof designation as taken from BS8579

7 Access & Facilities for the Fire Service

Schedule 1 of the Building Regulations requires the following functional requirement to be met in respect of B5, Access and facilities for the fire service:

(1) The building shall be designed and constructed so as to provide reasonable facilities to assist fire fighters in the protection of life.

(2) Reasonable provisions shall be made within the site of the building to enable fire appliances to gain access to the building.

The following discusses the implications of these requirements on the proposed design with regard to access and facilities for the Fire Service within and around the building.

7.1 Vehicle Access

Fire Service access is required to provide access for fire personnel and a water supply to within a reasonable distance of the building entrances. Due care should be given to ensure that the vehicle access route meets the requirements for a pump appliance as shown in the table below (which is taken from London Fire Brigade – Guidance Note 29).

Appliance Type	Minimum width of road between kerbs	Minimum width of gateways	Minimum turning circle between kerbs	Minimum turning circle between walls	Minimum clearance height	Minimum carrying capacity
Pump	3.7m	3.1m	16.8m	19.2m	3.7m	14.0t

Table 4 – Vehicle Access Requirements

Any access / security measures in and around the site (especially any bollards preventing vehicle access) should be bypass-able by the fire service. The details of the bypass arrangements should be developed and agreed with the fire service as applicable.

The road layout shows that fire service access is available to within 18m of the dry riser inlet.

7.2 Internal Fire Service Access

As the apartment block is under 18m in height, it is not required to have a firefighting shaft. However, the stair will be provided with a dry riser to provide adequate hose coverage.

Firefighting access to the houses will be direct from the street.

7.3 Dry Riser

The dry riser inlet should be adjacent to the building entrance and be visible from the fire appliance (plus accessible within 18m of the fire appliance parking location).

All parts of the floor plates should be covered within 45m (when measured along a route suitable for laying hose) from the dry riser outlet provided within the escape stair.

7.4 Smoke Venting

7.4.1 Residential Accommodation

The smoke venting requirements for the residential areas are discussed in detail as part of the common areas means of escape section (Section 3). No further provisions beyond this are needed for firefighting.

7.4.2 Ancillary Accommodation

All ancillary accommodation is accessed from the outside with no direct communication from within the residential areas. Therefore, no smoke venting is required.

7.5 Hydrants

ADB recommends that hydrants should be provided as necessary to ensure that the dry riser inlet is within 90m of a fire hydrant. Where the existing hydrants cannot achieve this, then a private hydrant should be provided.

It is proposed that a site survey confirms whether the above criteria is achieved based on any existing hydrant provisions. If this survey establishes that the existing hydrants are inadequate it is recommended that an additional private hydrant is included on the site.

7.6 Emergency Power Supplies

Each life safety system provided within the building will have an independent power supply which would operate in the event of a failure of the main supply.

Secondary power supply should be provided to the following life safety systems:

- Automatic opening vents,
- Fire Alarm System,
- Emergency lights and signs,
- Evacuation Lift,
- Emergency Voice Communication (EVC) panels,
- Residential sprinkler system.

8 Fire Safety Management

8.1 General

Given the use and likely occupancy of the building, management procedures will assist in the prevention and control of fires and the evacuation of occupants.

Good housekeeping standards will be enforced to ensure that the effectiveness of the fire safety provisions is not affected.

Maintenance procedures will be developed to ensure that all equipment and services within the building are able to operate effectively.

A full Fire Risk Assessment should be carried out by the occupier of the building nearer to the development completion and be in place on occupation to meet the Regulatory Reform Order (RRO). The assessment should be maintained and act as a record of the provision and measures, passive and active, used to minimize fire risk within and around the building.

8.2 Key Management Issues

This section describes each of the key management areas that will need to be implemented and maintained during the lifetime of the building:

- All necessary fire safety systems must be regularly maintained and tested.
- The building management will regularly monitor and control the specification and use of combustibles within the escape routes and circulation areas. These areas will generally be maintained free of all combustibles and the escape routes will be unobstructed at all times.
- A full Fire Risk Assessment will be developed for the building.
- All building staff and tenants will receive regular training including roles and responsibilities for key members of staff.

8.2.1 Control of Evacuation and Fire Safety Planning / Implementation

A detailed fire safety plan will be drawn up by the building management, which will provide clear simple advice for the occupants in the event of an emergency.

The fire safety plan will be prepared, maintained and implemented by the fire personnel responsible for the building in question and will include:

- The procedures to be adopted in the event of a fire signal being given
- Procedures for evacuation of occupants (including disabled occupants)
- Procedures for equipment maintenance
- Frequency and nature of fire drills
- Staff training
- Procedures for recording and monitoring equipment maintenance and any fire incidents

Expanding on the information given above the fire strategy includes are number of risk critical areas resulting in the need to formalize the fire safety management in the building. In order to develop and maintain the safety of the building, the building management should formulate a policy statement appropriate to the building configuration, location, occupation, and if relevant, to the building users. The policy statement should include:

- General safety issues related to the use of the building
- Possible fire scenarios
- Aims and objectives of the proposed management system and its methodology

This policy should be endorsed by the highest level of management.

8.3 Regulation 38

To satisfy Regulation 38 to the Building Regulations it is proposed that a full package of building design information is passed to the end users. It is therefore proposed that the following information is provided to the end users:

- The fire strategy report
- Any management information proposed in addition to that contained in this strategy
- Details of all passive fire safety measures (including compartmentation, cavity barriers, fire doors, self-closers and duct dampers)
- Details of the fire alarm and detection systems, emergency lighting, emergency signage, access controls, door hold open devices
- Details of all active fire safety measures including sprinkler systems design, including isolating valves and control equipment; and smoke control systems design, including mode of operation and control systems.
- Details of the dry / wet risers, fire hydrants
- Any high risk rooms and equipment present
- As built plans for the building
- O&M Manuals for the building systems, including commissioning information and certification
- Any provision incorporated into the building to facilitate the evacuation of disabled people

This information will be transferred as a package of information by the main contractor at handover of the building.

9 Conclusions and Recommendations

This report outlines the fire safety strategy proposals for the Aberfeldy Masterplan Block J and seeks to demonstrate compliance with the Building Regulations (generally in the form of the recommendations of Approved Document B).

The designs of the residential cores, such as travel distances etc., are compliant within the common areas in accordance with ADB.

Elements of structure will achieve the required levels of fire resistance.

In the apartment block, a dry riser will be provided in the escape stair, but it will not be required to be provided with the facilities of a firefighting shaft.

Based upon the above proposals it is considered that adequate measures are provided to meet the functional requirements of the Building Regulations. This report addresses the recommendations in Policy D5 (Inclusive Design) and Policy D12 (Fire Safety) from the London Plan as well as the guidance within The Fire Safety London Plan Guidance (LPG) 2022.

Introba

ECOWORLD
LONDON
CREATING TOMORROW & BEYOND

POPLAR HARCA

ABERFELDY VILLAGE MASTERPLAN