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Selby Urban Village Residential developments London Plan Fire Statement

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1. Document Overview

1.1 Limitations

The London Plan 2021 requires that the design and construction of specific building types achieve the highest fire safety standards, considered at an early stage of the project development.

Our client for this development is Karakusevic Carson Architects. Their client is the London Borough of Haringey.

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This report aims to provide the Fire Statement (FS) for the proposed residential development at Selby Urban Village in Haringey, London. It informs the design team of the recommended measures to support a planning application.

Whilst fire safety measures introduced are primarily for life safety, they will also have a beneficial effect on reducing potential fire losses and the extent of any consequential damage. It cannot be guaranteed that a fire will not start on the premises and; the opinion of the nominated insurance company and any other interested stakeholders should be sought.

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Systems and measures described establishing a principle on which reliance may be placed by other parts of the fire strategy. This is done on 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 a safe building, there is an ongoing management obligation to ensure that the active and passive fire protection facilities are correctly maintained and that there are appropriate management procedures in place to facilitate a safe evacuation in the event of a fire. This is a fundamental life safety requirement and is enforceable under the Regulatory Reform (Fire Safety) Order 2005.

1.2 Guidance

This FS has been based on the recommendations set out in BS9991:2015 – Fire safety in the design management and use of residential buildings – Code of practice. Responsibility for deciding if the planning requirements have been met rests with the planning authority.

The proposed residential development inclusive of four buildings (Plot 5, 6, 7, and 8) will be classified as a major development as there will be more than ten dwellings. A major development is defined by reference to part 1 of the Town and Country Planning Order 2015 as having ten or more dwellings or occupying an area of 0.5 ha or more. For non-residential sites the definition is based on a minimum area of 1000m² (1 ha).

1.3 The objective of this FS

The objective of this FS is to outline how this development achieves the following London Plan policies:

(Policy D12)

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

1. Identify suitably positioned unobstructed outside space:
 - a. for fire appliances to be positioned on
 - b. appropriate for use as an evacuation assembly point.
2. Are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire, including appropriate fire alarm systems and passive and active safety measures.
3. Are constructed in an appropriate way to minimise the risk of fire spread.
4. Provide suitable and convenient means of escape and associated evacuation strategy for all building users.
5. Develop a robust strategy for evacuation which can be periodically updated and published, and all building users can have confidence in.
6. Provide suitable access and equipment for firefighting that is appropriate for the size and use of the development.

B. All major development proposals should be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party, suitably qualified assessor.

The statement should detail how the development proposal will function in terms of:

1. the building's construction: methods, products and materials used, including manufacturers' details
2. the means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach
3. features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans
4. access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these
5. how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building
6. ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.

2. Introduction to project

2.1 General

This document provides an overview of the residential development at Selby Urban Village, Tottenham, London, with a view to demonstrating how the proposed development complies with London Plan Policies D5(B5) and D12(B) as outlined within the London Plan document issued March 2021.

Each plot building of the development will have a floor area in excess of 1000m² (as confirmed by the architect) when measured along the external footprint of the plots. In addition, it is proposed to provide more than 10 residential flats to the plots and therefore, under the guidance of The London Plan, it is required to assess the scheme as a 'Major Development'. Consequently, the criteria of Policy D12(B) will be detailed, including how the development will meet the requirements.

The Selby Urban Village development consists of four separate residential 'Plots', Plot 5, Plot 6, Plot 7 and Plot 8.

Plot 5 has five stories above ground and has a topmost finished floor level (TFFL) of approximately 16.5m in height, and consists of two escape stairs, however, each escape stair forms the only means of escape from the building parts they serve. The ground floor level consists of flats served by a single escape route.

Plot 6 has five stories above ground with a TFFL of approximately 16m and is served by three escape stairs, however, each escape stair forms the only means of escape from three different parts of the building at levels 1-5. independently accessed ground floor flats and maisonettes are included within the development with their own independent escape.

Plot 7 has five stories above ground with a TFFL of approximately 16.5m above ground and a commercial space at ground level. The residential parts are served by a single means of escape.

Plot 8 has four stories above ground with a TFFL of approximately 13m above ground and has a single means of escape stair. The escape stair serves the flats and upper maisonettes at levels 2-4, with ground and first floor consisting of maisonettes and 1 no. flat with their own independent exit at ground.

The site plan for the development has been indicated in Figure 2.1 below.



Figure 2.1 Stair location

2.2 Qualifications of the authors

Nathan Henderson

Position

Fire Engineer

Qualifications/Memberships

MEng, AIFireE

Craig Loughlin

Position

Fire Engineer

Qualifications/Memberships

BEng (Hons), AIFireE

Dominic Way

Position

Director

Qualifications

CEng, MIFireE

This statement was prepared by Nathan Henderson and was reviewed by Craig Loughlin and authorised by Dominic Way.

Nathan Henderson, a fire engineer at BB7, has a MEng (Hons) in Mechanical Engineering. Nathan is an associate of the Institution of Fire Engineers and has completed several London Plan Fire Statements in the past.

Dominic Way, a Director at BB7, is a qualified professional with Ceng and is a member grade membership with the Institution of Fire Engineers and 20 years of experience within the industry.

3. Policy D5

3.1 Requirements

“Development proposals should achieve the highest standards of accessible and inclusive design. They should be designed to incorporate safe and dignified emergency evacuation for all building users. In all developments where lifts are installed, as a minimum at least one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building.”

Each stair core within the development has at least one evacuation lift that is situated in a protected lobby which serves the escape stair. The evacuation lifts will have an associated disabled refuge that will be provided with a two-way communication system that will be designed as per the recommendations of BS 5839-9.

The design and operation of the evacuation lifts are in accordance with BS EN 81-20.

There is a statutory requirement or requirement of the London Plan that requires more than one evacuation lift to be installed per core. However, there is a potential that the London Fire Brigade (LFB) will request an additional lift to be installed to prevent occupants and members of the LFB from trying to operate the lift simultaneously. It will also provide an additional layer of protection in the event of a lift being down.

This request from the LFB usually occurs where there are firefighting lifts, which there aren't in this development.

There is no current published guidance that requires the corridors adjacent to the lift lobbies to be provided with ventilation. However, in the draft document of BS 9991, there is a proposed revision being used that would suggest that all lobbies/corridors adjacent to the lift lobby should be provided with either a mechanical or natural smoke ventilation system.

In the interest of future-proofing the design, the common corridors are provided with mechanical ventilation. The figures below shows the indicative ventilation strategy which is being progressed.

Plans indicating the lift cores and escape routes from each level have been provided in the following figures.

3.2 Evacuation Lift Proposals

The layouts of the cores and their ventilation proposals (covered in detail in Section 4.6 of this report) have been shown in the following figures both at ground and typical upper floors of each plot.

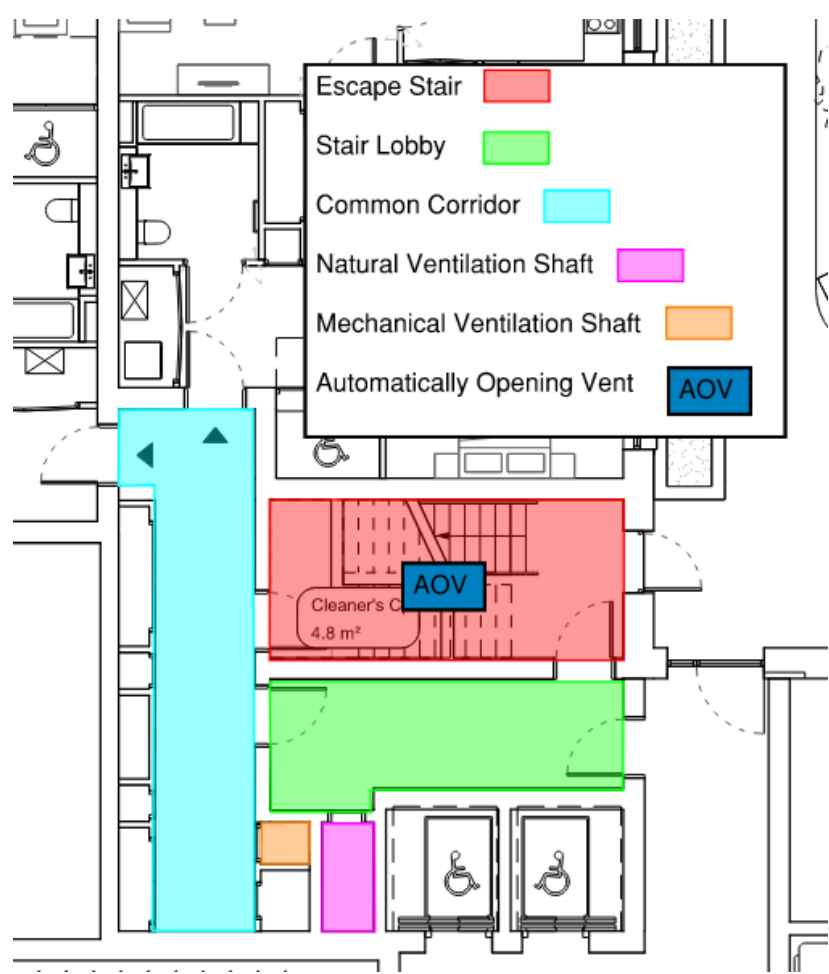


Figure 3.1 Plot 5 Plan Level 00



Figure 3.2 Plot 5 Level 02/03

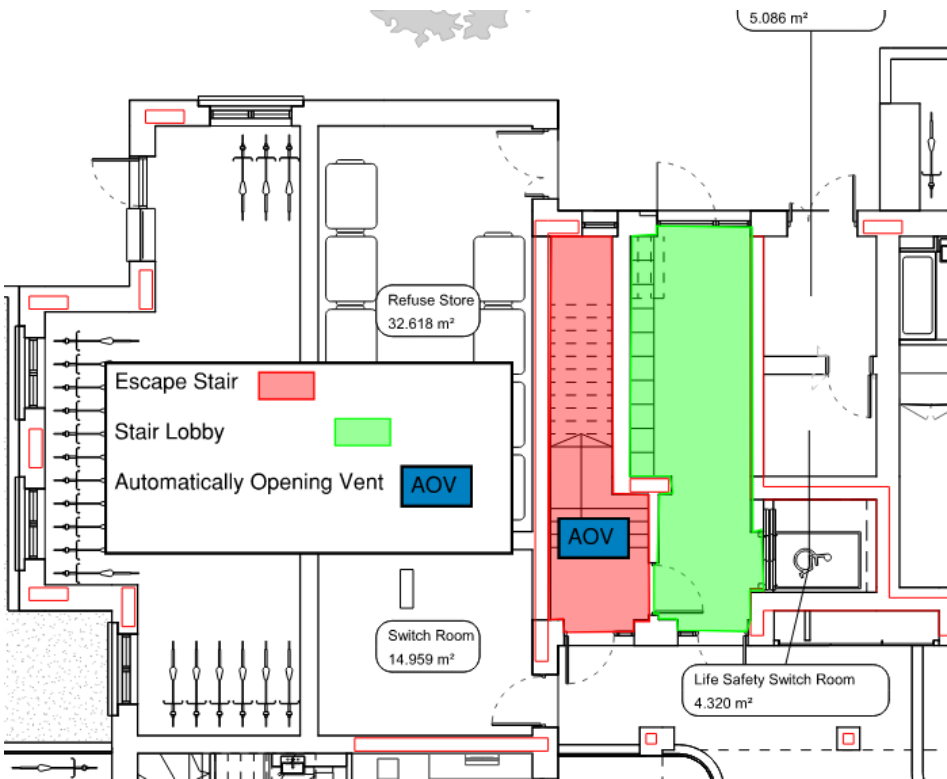


Figure 3.3 Plot 6 (Core A & C) - Level 00



Figure 3.4 Plot 6 (Core A & C) - Level 01

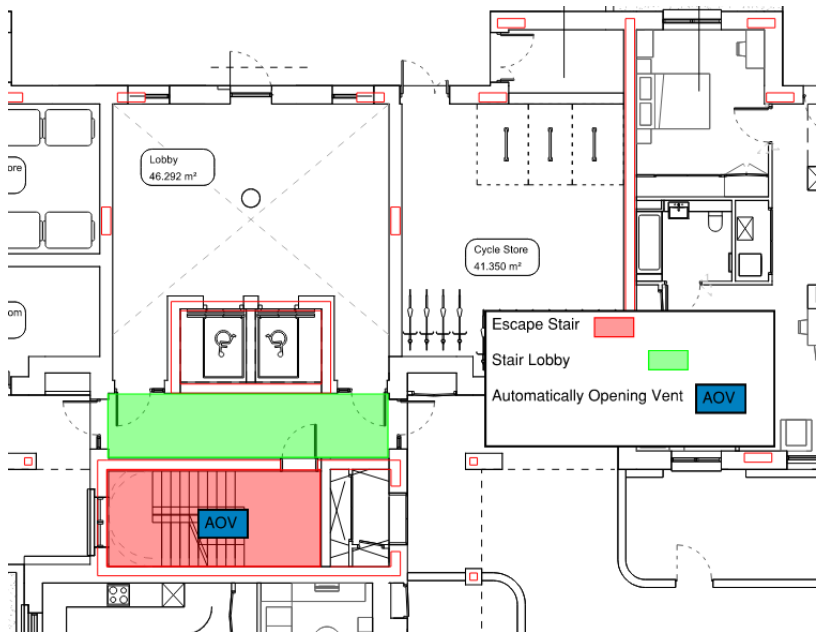


Figure 3.5 Plot 6 (Core B) - level 00

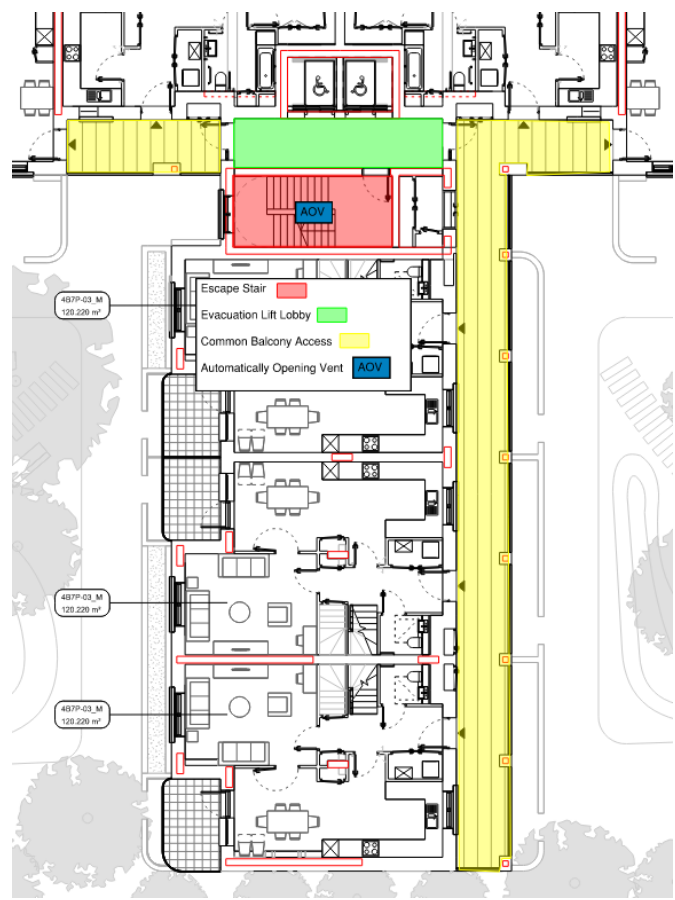


Figure 3.6 Plot 6 (Core B) level 02

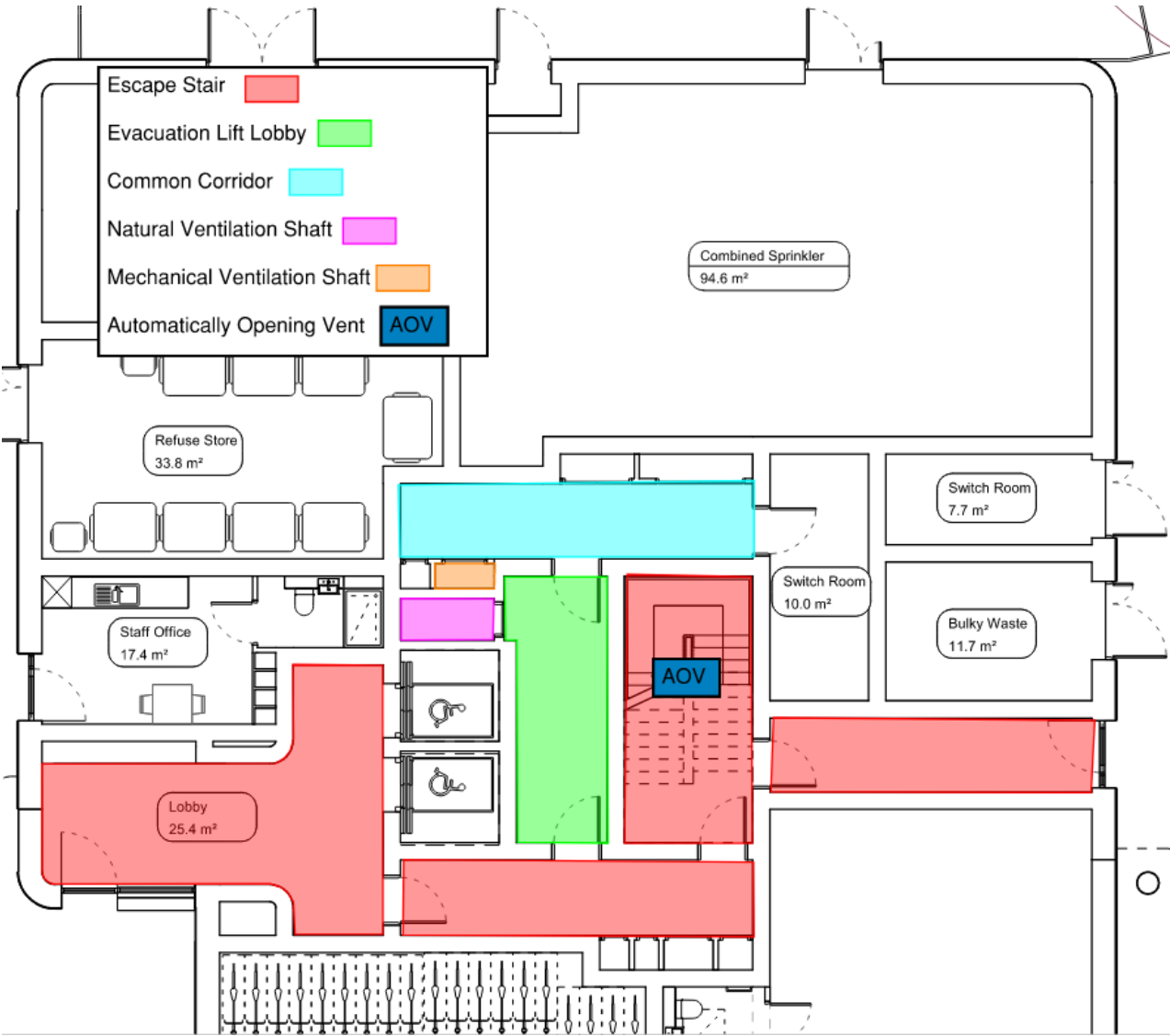


Figure 3.7 Plot 7 - Level 00



Figure 3.8 Plot 7 – level 01

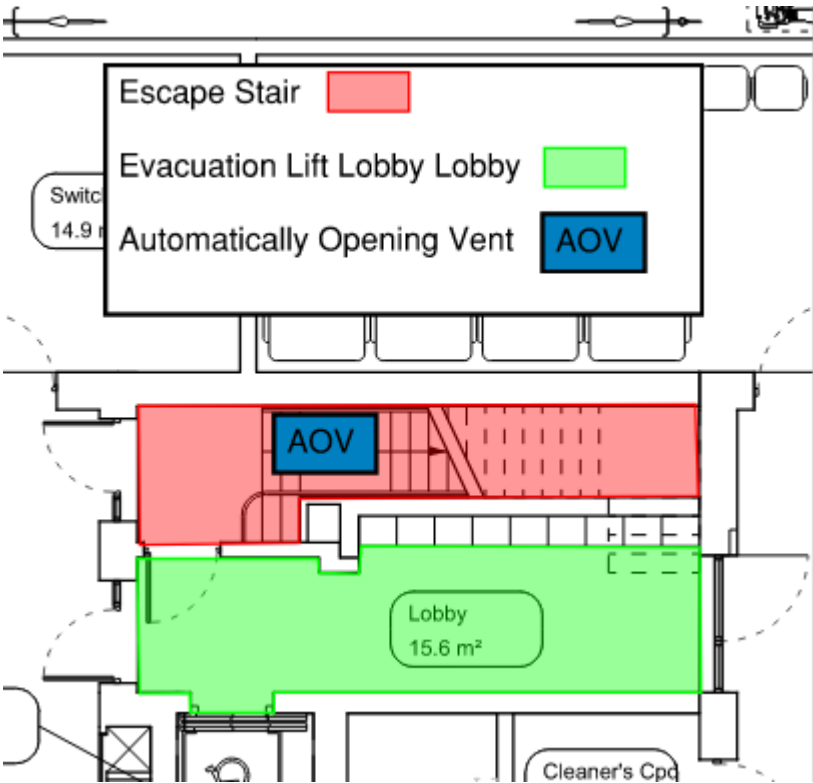


Figure 3.9 Plot 8 - Level 00

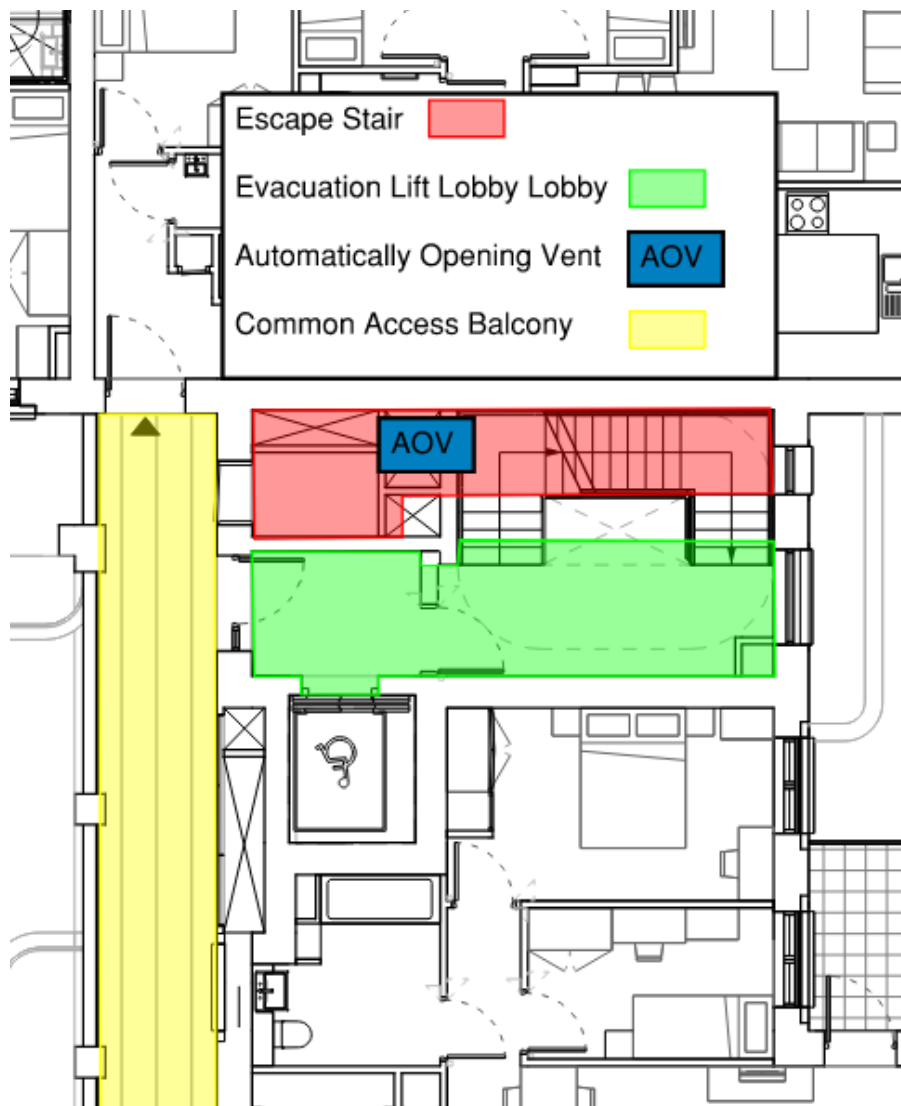


Figure 3.10 Plot 8 - Level 01

It is considered the provisions for the evacuation lifts is robust and in excess of current guidance recommendations, however, BB7 considers that the proposals future proof the development to upcoming updates to guidance. Each lift is to be provided with fire protective measures suitable to allow their continued use in a fire event. These include resilience measures, such as suitable back up power, fire protection of lift equipment and power/control cabling.

On the upper floors, the evacuation lifts and access points to the escape stair are located within a protected, lobby providing a space for disabled occupants to safely await evacuation in the event of a fire. The lobbies open into a balcony and therefore there is no real risk of smoke ingress. Alternatively, the corridor adjacent to the lobby and the lift lobby are ventilated. Mechanical vents will be used as shown in the plans above.

The purpose of the strategy on the latter mechanical example will be to demonstrate that smoke is kept out of the lobby containing the refuge. The specialist designers chosen to do this would determine the details of the system but adequate shaft have been allowed to enable them to do this.

On the ground floor the same level of protection is afforded to the stairs as it is on the upper floors.

3.3 Evacuation Strategy/Building Management Plan

The building provides primarily residential accommodation; therefore, it can be presumed that there will not always (if at any time) be a suitably trained person on site to manage the evacuation using the evacuation lifts. At this early stage it is understood that there isn't a management company in place.

With no 24/7 management for an evacuation management plan to be implemented, the evacuation lift is recommended to utilise automatic evacuation technology whereby the evacuation lifts are activated upon detection and alarm within the building. This is considered to be suitable for the proposed use and the risk profile of the building.

Further to the above, the operation of the evacuation lift will consist of the following, based on the draft guidance contained within BS DD EN 81-76.

- The lift shall serve registered landing calls;
- The priority of the landing calls shall be based on the distance from the Main Evacuation Exit Floor (MEEF), with the furthest landing call getting highest priority;
- On arrival at a landing, the lift shall open the doors and give a voice announcement (for example, "Evacuation. Enter the car");
- Once passengers have entered the lift, the doors shall be closed and the lift proceeds directly to the MEEF;
- The lift may serve other landing calls on the way to the MEEF, which will incorporate;
 - An audible and visual indication to inform persons not to leave the car (for example "no Exit"); and
 - A means to prevent stops without sufficient capacity (load or space sensors).
- At the latest when the actual door dwell time exceeds 30 seconds, all door protective measures shall attempt to close as defined in BS EN 81-20:2019, Clause 5.3.6.2.2.1 b) 4);
- Actuation on the landing call device shall not prevent a loaded car from closing its doors and leaving the floor;
- On arriving at the MEEF, the evacuation lift shall open its door and shall make audible and visual indications such as "Exit Now".

It should be noted that this guidance for the use of automatic evacuation from BS EN 81-76 is still undergoing consultation at the time of writing this report, however, the document is considered a reasonable approach for the development at Selby Urban Village as the building does not have onsite management.

If the draft guidance document BS DD EN 81-76 does not come into effect, or the technology isn't yet available or the above is deemed unacceptable, a management plan should be put in place, reflective of BS 9999 Annex G.2.3 for the building to utilise driver-assisted evacuation for the development.

3.4 Capacity

D12 of the London plan asks for the option of a simultaneous evacuation to be considered.

With the residential apartments operating on a stay-put evacuation policy, it is expected that only a single apartment or upper maisonnette will ever need to evacuate at any one time. This is all that would be required under the guidance of ADB, for Building less than 18 m in height, and BS9991.

An Evacuation Alert System (EAS) is being provided in accordance with BS 8629, to allow the attending Fire Service to evacuate the whole premises, should firefighters believe a full evacuation is needed. To provide additional resilience and support to the fire service this has been provided over and above the typical ADB recommendations.

However, this does not take into account that occupants may choose to self-evacuate. Therefore, the most onerous capacity assessment has been taken with all occupants evacuating at the same time, with an expected occupancy of 4 persons per apartment.

The ground floor commercial area in Plot 7 has not been considered within this assessment as this area would not share evacuation routes. It can be seen that the layout of the space is very simple and there is a single door proposed which would be adequate for 60 people and this is appropriate for the limited size (e.g. 80m²); which is likely to have back of house also incorporated within it.

The total upper floor expected occupants have been detailed below within, some of which may be required to use the evacuation lifts. The ground floor ancillary areas are considered to be transient spaces and therefore the occupancy of these areas has been accounted for elsewhere in the development.

Thus, it has not been considered within this capacity assessment. It should be noted that the separate blocks of Plots 5 & 6 have been considered separately as there is no communication between them.

Where a maisonette is accessed directly from outside it has also been excluded from the occupancy capacity as they will not be using the common escape routes.

An occupancy of 4 persons per apartment has been used. It is possible a large number of guests would be within one apartment but unlikely more than one. Most apartments have 1-2 bedrooms and some have 3 or 4 bedrooms. Often apartments won't be fully occupied. Therefore a conservative occupancy of 4 has been used and this would average out at over 2 persons per bedroom.

Table 3.1 Occupancy Numbers

Building	Location	Space	Persons per home	Number of Expected Occupants
Plot 5 Block 1	ground floor	3no Residential Homes	4	12
	1 st floor	6no Residential Homes	4	24
	2 nd floor	6no Residential Homes	4	24
	3 rd floor	6no Residential Homes	4	24
	4 th floor	6no Residential Homes	4	24
	5 th floor	5no Residential Homes	4	20
				Total: 128
Plot 5 Block 2	ground	3no Residential Homes	4	12
	1 st floor	6no Residential Homes	4	24
	2 nd floor	6no Residential Homes	4	24
	3 rd floor	6no Residential Homes	4	24

Building	Location	Space	Persons per home	Number of Expected Occupants
	4 th floor	6no Residential Homes	4	24
	5 th floor	5no Residential Homes	4	20
Total: 128				
Plot 6 Block 1	ground	-		0
	1 st floor	3no Residential Homes	4	12
	2 nd floor	7no Residential Homes	4	28
	3 rd floor	7no Residential Homes	4	28
	4 th floor	4no Residential Homes	4	16
	5 th floor	4no Residential Homes	4	16
Total: 100				
Plot 6 Block 2	ground	-		0
	1 st floor	4no Residential Homes	4	16
	2 nd floor	7no Residential Homes	4	28
	3 rd floor	4no Residential Homes	4	16
	4 th floor	5no Residential Homes	4	20
Total:80				
Plot 6 Block 3	ground	-		0
	1 st floor	3no Residential Homes	4	12
	2 nd floor	7no Residential Homes	4	28
	3 rd floor	7no Residential Homes	4	28
	4 th floor	4no Residential Homes	4	16
	5 th floor	4no Residential Homes	4	16
Total: 100				
Plot 7	ground	-	-	0

Building	Location	Space	Persons per home	Number of Expected Occupants
	1 st floor	5no Residential Homes	4	20
	2 nd floor	5no Residential Homes	4	20
	3 rd floor	5no Residential Homes	4	20
	4 th floor	5no Residential Homes	4	20
	5 th floor	5no Residential Homes	4	20
				Total: 100
Plot 8	ground	-	-	0
	1 st floor	2no Residential Homes	4	8
	2 nd floor	10no Residential Homes	4	20
	3 rd floor	2no Residential Homes	4	8
	4 th floor	3no Residential Homes	4	12
				Total: 48

The above table demonstrates each upper-floor occupancy as follows:

- Plot 5 Block 1: 116
- Plot 5 Block 2: 116
- Plot 6 Block 1: 100
- Plot 6 Block 2: 80
- Plot 6 Block 3: 100
- Plot 7: 100
- Plot 8: 48

It is not unlikely that a number of occupants of the upper floors will require the use of the evacuation lift in the event of a fire.

In the event that a full building evacuation is required (i.e., a simultaneous evacuation) the stair width and final exits should be able to provide sufficient escape width to allow all occupants to traverse the stairs comfortably. The stair widths will not measure less than 1100 mm when measured between the narrowest points. This will provide adequate escape width to the evacuating occupants on the basis that 1100mm provides an escape width for 380 occupants. This has been taken from Table 3.2 of Approved Document B Vol. 2 to demonstrate a definitive no. of occupants cable of using the stair at anyone time

Additionally, final exits from the stairs at ground level should be suitably sized to allow swift egress from the building. The final exit widths from each stair of each block are as follows:

- Plot 5 Block 1: 900mm
- Plot 5 Block 2: 900mm

- Plot 6 Block 1: 900mm
- Plot 6 Block 2: 900mm
- Plot 6 Block 3: 900mm
- Plot 7: 900mm
- Plot 8: 1000mm

Final exit widths serving up to 220 occupants but more than 110 should have a minimum width of 1050mm. However, as each door opens in the direction of escape and measures more than 850mm wide the designed width of each exit can accommodate 110 occupants. Additionally, occupants within Plot 5 Blocks 1 and 2 are afforded the opportunity to escape through the lift lobby and onto a final exit.

Clear signage and detailed information to residents should be provided to ensure that the lifts are used only by those who are unable to use the stairs unassisted in the event of a fire. All other occupants should use the protected escape stair.

A standard wheelchair-accessible lift would be required to be 1100mm wide x 1400mm deep, which would provide space for two standard wheelchairs. With two evacuation lifts provided within the development, it could be considered that four wheelchair users can evacuate simultaneously.

The above capacity assessment is considered to be a worst-case scenario, and only one home should be evacuated in the event of a fire. It is likely that far fewer occupancy numbers will be present within the buildings. Therefore, the provisions provided within the development are considered acceptable within the building.

4. London Plan Policy D12(B)

London Plan Policy D12(B) requires a Fire Statement to be produced for “Major Developments”.

Major developments are defined within the London Plan, as specified below:

Major Developments are defined as:

- *For Dwellings: where 10 or more are to be constructed (or if number not given, the area is more than 0.5 hectares)*
- *For all other uses: where the floor space will be 1000m² or more (or the site area is 1 hectare or more). The site area is that directly involved in some aspect of the development. Floor space is defined as the sum of floor area within the building measured externally to the external wall faces at each level. Basement car parks, rooftop plant rooms, caretakers’ flats etc. should be included in the floor space figure.*

Within Policy D12, major developments should incorporate materials that are Class A2-s1, d0 rated or better under the European classification system, as set out in the standard BS EN 13501-1 and as reflected in the UK Building Regulations will be used except for those exempt elements as set out under Regulation 7(3) of Approved Document B.

According to Policy D12(B) the fire statement “should detail how the development proposal will function in terms of:”

1. *The building’s construction: methods, products and materials used, including manufacturers’ details*
2. *The means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach*
3. *Features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans*
4. *Access for Fire Service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these*
5. *How provision will be made within the curtilage of the site to enable fire appliances to gain access to the building*
6. *Ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.”*

These matters are addressed in the following subsections.

4.1 Policy D12(B1)

All developments must achieve the highest standard of fire safety and ensure that they meet the following policy.

4.2 The Policy

“The building’s construction: methods, products and materials used, including manufacturers’ details”

4.3 Building’s construction

The building will be formed with a concrete frame with a concrete floor slab to every level, including the roof, supported on concrete columns. The external walls will be formed with infill SFS framing between the concrete frame with a brickwork outer face. The metal framework will be filled with non-combustible insulation and faced with a non-combustible cement particle board on the outside and a plasterboard on the inside. A further layer of insulation will be fitted to the outside of the cement particle board with a cavity between this and the brickwork.

The internal partitions will be formed from metal studwork lined with plasterboard and filled with non-combustible insulation where needed. The walls around the cycle store and plant room will be formed of blockwork. The insulation within the building will be A2-s1 or better except for cycle stores or ancillary spaces where insulation is required to the underside of the slab, which will be contained with a slab and compartmentation. The roofs of the building will be formed with concrete slabs with non-combustible (A2-s1, d0) insulation to terrace areas and PIR insulation to other areas. Green roofs will be separated from the inside of the building by the concrete slab. It will be ensured that fire spread to adjacent building or of fire spread across compartment lines are adequately mitigated by suitable measures.

A detailed review of the external wall details will need to be undertaken by the design team when the external wall materials are confirmed. All primary materials within the external walls should achieve minimum classification of Class A2-s1, d0.

Furthermore, an external fire spread to adjacent building assessment is to be undertaken at the detailed design stage and provided within the report, that includes the percentage of protection required to each (fire) compartment on each external wall elevation in relation to the site boundaries of the site.

Solar Photovoltaic Panels (PV panels) could be identified as a potential fire risk, however a sustainability preference is emerging within the changing world. The use of PV panels has been discussed within the design team and it is understood these will be provided on the roof of each block of the development. The BRE has been conducting studies over three years (2015 to 2018) to determine the fire risk of PV panels used within buildings. Within the literature review, 2017, the BRE recommend providing fault detection devices to PV panels (arc fault detection, ground fault detection and insulation resistance breakdown detection) which can provide effective protection against the faults that result in fires. Additionally, access to PV roofs can present an issue for firefighters, therefore if PV panels are proposed to be implemented, due consideration should be given to the safety of firefighter personnel moving around the roof tops where PV panels are located. Therefore, consideration should be given to a firefighter’s shut-off control.

4.4 Policy D12(B2)

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

The basis for the design of the fire strategy would be recommended to implement the guidance contained in BS 9991:2015: *Fire safety in the design management and use of residential buildings – Code of practice*

The residential apartments and maisonettes will employ a ‘stay put’ policy, whereby only the apartment or maisonette of the fire origin will initially evacuate. Occupants will remain within their own dwelling, or in other areas of the building unless they choose to leave voluntarily, or they are instructed to leave by the attending Fire Service. This evacuation procedure relies on the high degree of compartmentation provided to the residential areas, in tandem with the sprinkler system implemented.

The ground floor non-residential areas of all plots will adopt a simultaneous evacuation strategy whereby all occupants are expected to evacuate on detection within the ground floor non-residential areas including commercial areas.

Each stair across the development measures a clear width of approximately 1,200mm (as measured on the GAs provided) and has been designed to meet the requirements of Part M of the Building Regulations 2010 (as amended). Where exits from stairs do not directly communicate with the outside the corridor or lobby that serves the stairs will be a fire sterile escape route that will maintain the same level of fire protection (i.e., 60mins).

As noted within Section 3, it is recommended that each stair core is provided with two evacuation lifts where this is practicable. Mobility-impaired persons will use these to make their escape to lower levels, in line with Policy D5(B5) of the London Plan. All other escape routes will be suitably designed to be level.

Additionally, Refuges are located within the evacuation lift lobby at every level (excluding ground floor), located so that it does not impede escape. The refuges should be at least 900mm x 1400mm and should not reduce the required exit width if it is located on an escape route. A two-way communication system will also be provided to each disabled refuge.

4.5 Policy D12 (B3)

“Features which reduce the risk to life: fire-alarm systems, passive and active fire safety measures and associated management and maintenance plans”

Active Fire Safety Systems

The flats should be fitted with a Grade D Category LD1 fire detection and alarm system as a minimum. A balcony alarm system is required where the kitchen is not enclosed. The fire detection and alarm system for flats should be designed and installed in accordance with BS 5839-6:2019.

A Category L5 fire detection system should be provided in the ventilated sections of the common corridors of each block to activate the smoke ventilation systems. The system is provided to actuate the smoke ventilation only and will not act as a means of warning occupants of a fire. The system will consist of smoke detectors only, with no Manual Call Points (MCPs) or sounders. The smoke detectors should be spaced along the corridor in accordance with the recommendations of BS 5839-1: 2017 in that all areas of the corridors must be no more than 7.5m from a smoke detector.

The specific use of the commercial premises at ground of Plot 7 is subject to confirmation, however, it is most likely that this will be a shop, and in accordance with Table 7 of BS 9999:2017 (due to an assumed B3 risk profile), should be provided with a Category L2 fire detection and alarm system.

The fire detection and alarm system for non-residential areas should be designed and installed in accordance with BS 5839-1:2017.

The Plots will be sprinkler protected in accordance with BS 9251:2021 'Fire sprinkler systems for domestic and residential occupancies – Code of practice'.

The smoke ventilation systems being proposed in each Plot of the development have been summarised in Section 3.2.

Passive Fire Safety Measures

The top storey height to the TFFL in each plot is as follows:

- Plot 5 - 16.6m
- Plot 6 - 15.9m
- Plot 7 - 16.6m
- Plot 8 - 12.8m

Based on a height of more than 5m but less than 18m, elements of structure that are required to be fire resisting in all Plots should achieve 60 minutes FR as per the criteria in Table 4 of BS9991.

As per the recommendations of BS 9991 all of the following items should be constructed as compartment walls and compartment floors:

- Any floor (except where it is a floor that is between levels of an individual flat).
- Any wall separating a flat from another part of the building
- Any wall enclosing a refuse storage chamber
- Any wall common to two or more buildings

All openings for pipes, ducts, conduits or cables that pass through and/or any joints between fire separating elements should be appropriately fire stopped with consideration for any potential thermal movement of pipes and ducts.

Where non-rigid materials are adopted or unsupported spans exceeding 100mm are adopted, the fire stopping material is to be reinforced with materials of limited combustibility.

Maintenance

Inspection, maintenance and testing procedures will be established to ensure that all fire protection systems can operate effectively when required. Arrangements will be made for all fire safety equipment installations and systems to be inspected and tested on a regular basis by competent persons. Any material alterations, additions, repairs or modifications to services and equipment will be carried out only by competent persons.

The following British Standards will be used for routine maintenance, inspection and testing of particular systems:

- BS 5839 part 1 and part 6 for fire detection and fire alarm systems;
- BS 5266-1 for emergency escape lighting systems;
- BS 8214 for fire doors
- BS 9990 for fire hydrants and fire mains.

4.6 Policy D12(B4)

“Access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these”

To assist the Fire Service in identifying each floor in a block of flats, floor identification signs and flat indicator signs should be provided.

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. Approved Document B Vol. 1 section 15.13 - 15.16 will be used when designing this. A secure information box will also be included within the design to provide the FRS with access to building information.

As each building measures less than 18m in height a firefighting shaft is not required. Each escape stair will be provided with an AOV located at the highest practicable point of the top storey of the stair. The AOV will have a minimum free area of 1m² and will be designed and installed as per BS EN 12101-2.

The lift lobbies will be provided with natural ventilation via ventilation shafts. The ventilation shafts will be designed as per the recommendations of BS 9991, which have been laid out in the associated fire strategy report for the developments.

Additionally, the internal corridors of plots 5 & 7 will be mechanically ventilated. Mechanical smoke ventilation systems will be designed as per Clause 14.2.4 of BS 9991 and BS 7346-8. CFD modelling may be used to demonstrate the effectiveness of the system.

The proposed ventilation strategy to the stairs and protected lobby is visually represented in Section 3.2 of this report.

The plots include both single-storey apartments and two-storey maisonettes located at ground floor. Since sprinklers are proposed throughout and the maisonettes have no floor greater than 4.5m above ground, all points of the maisonettes should be within 90m of the fire appliance location in accordance with Clause 50.1.2 of BS9991.

Each emergency escape stair within all plots should be provided with a dry fire main designed and installed in accordance with BS 9990. The maximum hose laying distance for flats accessed via the common balconies should be 45m, all other flats should have a maximum hose laying distance of 60m. It is deemed that all plots will comply with the above.

Hydrants should be in positions that are near the entry points of each block and fire appliance parking positions.

Fire hydrants should be located within 90m of each dry riser inlet when measured on a route suitable for laying hose. An existing hydrant has not been identified and should be confirmed. The hydrants are to have signage in accordance with BS 3251.

The responsible person must inspect the secure information box at least annually and ensure that it continues to meet the requirements.

A management plan is to be formulated that ensures the inspection/maintenance of all fire safety features within the building. This is to include a suitable risk assessment of any variations to the management plan (where these occur).

4.7 Policy D12(B5)

“How provisions will be made within the curtilage of the site to enable fire appliances to gain access to the building”

The existing highway infrastructure will be used to provide access to the development. The requirements for the pump appliance access to the development are detailed in Table 4.1 (amended from Table 13.1 of Approved Document B Vol.1) and the design should take into account the requirements of LFB’s Fire Safety Guidance Note 29 (GN29) should any work be undertaken to the existing highways the highways should comply with the specification within Table 4.1.

Table 4.1 Fire Appliance Access Routes 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)
Pump	3.7	3.1	16.8	19.2	3.7

Note: Although Guidance Note 29 (GN29) states that the minimum carrying capacity is 14 tonnes.

Fire tender access routes will be served by existing and new roads adjacent to the proposed buildings, i.e., Selby Road, Dalbys Crescent, and Queen St. As highlighted in the following figure. This is deemed to be compliant with the guidance in BS9991.

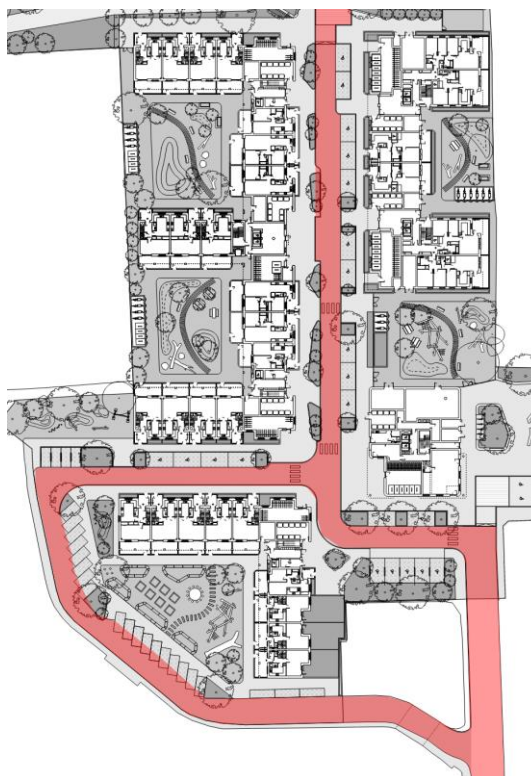


Figure 4.1 Fire tender access route

These proposals do not adversely impact neighbouring sites utilising the existing road infrastructure combined with new internal access routes specifically designed for the development.

It is envisioned that access for the Fire and Rescue Service will not be impeded by escaping occupants at the time the Fire Service is expected to arrive at the scene, due to the stay put nature. If the flats were evacuated this would be facilitated by the brigade who could put measures in place. In addition, it is not a high-occupancy building.

Furthermore, the fire assembly point for the Plots is to be away from the development, where it is sited to cause no hindrance to the Fire Service access, nor will it endanger the escaping occupants once Fire Service operations commence as it would be expected for the Fire and Rescue service to travel via Selby Road or Bull Lane/Queen St.

4.8 Policy D12(B6)

“Ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures”

A requirement of the Building Regulations 2010 (Regulation 38) is that the fire safety information is compiled and handed over to the building user upon completion. This would include the fire safety strategy reports and Operations & Maintenance manuals for the fire safety systems in the buildings.

A detailed fire strategy will be provided which will detail the assumptions on the design, including the baseline for management and a recommendation to produce a Fire Risk Management Strategy.

When any building works will be undertaken (as defined under the Building Regulations) it will be a requirement that following the works the fire safety measures will be no less satisfactory than before. This will therefore require a thorough review of the existing fire safety measures and consideration given to how any works would impact the fire strategy for the building.

Fire Safety (England) Regulations 2022 places specific duties on the responsible person. The Regulations and published guidance should be consulted for full details.

The Regulatory Reform (Fire Safety) Order 2005 will be applicable when the building is occupied, and a requirement of this legislation is the prevention of fires, management of fire risks and the requirement to document a fire risk assessment for the premises. There is a requirement placed upon the responsible person to review the fire risk assessment and keep it up to date, including when the premises undergo significant changes, extensions or conversions.

5. Statement of Compliance

Having reviewed the proposals, BB7 believe that the design for the development at Selby Urban Village, London will meet the requirements of The London Plan Policies D5(B5) and D12(B).

The fire strategy for the proposed building will need to be developed further as the building design progresses. It will be ensured that the building is designed correctly. Any significant future modifications to the building design will required further assessment as it may adversely affect the original fire strategy.

We create safe spaces
where people, businesses
and communities thrive.