London Plan Fire Statement

Meadows Hall, Richmond

19 August 2022

Richmond Housing Partnership

13150BB

Revision History

Version	Date	Author	Comments
01	17/06/2022	Sam Connolly	Initial issue
02	19/07/2022	Sam Connolly	Updates to reflect amended scheme
03	19/08/2022	Sam Connolly	Updates to reflect planning issue drawings

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13150BB

Prepared by	**Sam Connolly** 0203 603 5535 samconnolly@bbseven.com	BB7 South The Old Surgery The Historic Dockyard Chatham Kent ME4 4TZ
Reviewed by	**Jack Partington** 0203 603 5535 jackpartington@bbseven.com	BB7 South The Old Surgery The Historic Dockyard Chatham Kent ME4 4TZ
Approved by	**Shane Ryan** 0203 603 5535 shaneryan@bbseven.com	BB7 South The Old Surgery The Historic Dockyard Chatham Kent ME4 4TZ
Prepared for	**Rob Cummins** 0203 166 2501 rob.cummins@rhp.org.uk	RHP 8 Waldegrave Road Teddington TW11 8GT

This document relates only to statutory requirements for Building Regulations compliance which focuses on life safety only. Additional fire safety measures may be necessary for insurance and other purposes and if you require these to be considered you must inform us. Where no reference is made within this report to a certain element, all detailed aspects of the design and construction will, unless explicitly stated otherwise in this report, be in accordance with the recommendations of the selected design guidance identified in the legislation section of this report and the appropriate British Standards.

The validity of this document is dependent upon the recommendations being implemented in full and as described. This document relates to a development that is subject to review from Approval Authorities. It should be ensured that the contents of the document are agreed with all the relevant approval bodies prior to implementation.

This document is based on our Client's or our Client's Representative's description of their requirements and is subject to assumptions that BB7 can reasonably be expected to make in accordance with our professional principles and experience. BB7 accept no liability for the accuracy of the information provided by our Client or any third parties and any information provided by to us and referred to herein has not been verified by BB7, unless otherwise expressly stated in the document.

BB7 shall not be held responsible or liable for the designs produced by any other consultants, sub-consultants or sub-contractors, including any original designs produced by others which we may adapt, modify or develop in the carrying out of the Services. The document is based on the drawings referenced. Any subsequent changes to the design which are not agreed with BB7 will invalidate the document.

Contents

1. Introduction

BB7 have been commissioned by Richmond Housing Partnership (RHP) to produce a London Plan Fire Statement for the proposed residential development known as Meadows Hall.

The buildings in the Meadows Hall development will be newly constructed, comprising of an apartment block spread over ground plus three upper-levels with an uppermost occupied storey approximately 9 metres above ground level. There is also a terrace of five Mews Houses to the rear of the site, each spread across ground plus one upper-level with an uppermost occupied storey approximately 3 metres above ground. The only ancillary accommodation is adjoined to the southern-end of the Mews House terrace and consists of a cycle store and refuse store, each of which are solely externally accessed.

As the project includes the construction of more than 10 dwellings, it is classed as a major development and therefore the London Plan requires a Fire Statement.

The objective of the Fire Statement is to summarise how the development will function in terms of fire safety and how it aims to satisfy Policies D12 and D5 of the London Plan Policy. The London Plan Policy requires any proposals to achieve the highest standards of fire safety to ensure the safety of all building users.

The principal guidance document used for the evaluation of fire safety precautions for the development will be BS 9991: 2015 *Fire safety in the design, management and use of residential buildings – Code of practice* **(BS 9991)**. Reference may also be made to Volumes 1 and 2 of Approved Document B – 2019 Edition (ADBv1/2), including the May 2020 amendments, and other relevant British and European standards where appropriate.

The Fire Statement is based on the following drawings provided by Wimshurst Pelleriti, issued to BB7 on the 21/07/2022:

Table 1.1 Reference Drawings

Drawing Title	Drawing Number	Revision	Date
Proposed Site Plan	WP-0733-A-0110	P0	21/07/2022
Proposed Plans – Mansion Block	WP-0733-A-0111	P0	21/07/2022
Proposed Plans – Mews Block	WP-0733-A-0112	P0	21/07/2022
Proposed Site Sections – Sheet 01	WP-0733-A-0200	P0	21/07/2022

BB7 is of the opinion that the fire safety measures outlined within this Fire Statement have been developed with the highest standards of fire safety in mind and in accordance with the requirements of Policies D12 and D5 of the London Plan Policy.

2. Competency Statement

2.1 BB7 company statement

BB7 Consulting Ltd. is an independent team of Chartered Fire Engineers and Certified Fire Risk Assessors. Within our specialism we offer innovative solutions for design optimisation that add tangible value to our clients' projects.

BB7 has a proven track record for securing Building Regulations approval on numerous developments across London (both residential and commercial) and has a positive working relationship with the local statutory authorities.

2.2 Project team

The following table outlines the individuals that have had input on the production of this Fire Statement:

Role	Name	Professional Qualifications	Academic Qualifications
Author	Sam Connolly	• Associate of the Institution of Fire Engineers (AIFireE)	• BEng (Hons) Design, Innovation and Entrepreneurship
Reviewer	Jack Partington	• Associate of the Institution of Fire Engineers (AIFireE)	• BSc (Hons) Mathematics • MSc (Hons) Fire Safety Engineering
Approver	Shane Ryan	• Associate of the Institution of Fire Engineers (AIFireE)	• FdEng Electrical Engineering • MSc Fire and Explosion Engineering

2.3 Relevant experience

Sam Connolly

Sam is a Graduate Fire Engineer who has spent time establishing his knowledge of the fire science fundamentals, fire safety design engineering and the Building Regulations since he joined BB7 in late-2020. Sam is currently in the closing stages of a fire safety engineering master's degree to further underpin this knowledge. Regarding project work, Sam produces comprehensive deliverables for clients in various aspects of the built environment, including residential, commercial, institutional care, education and transport infrastructure projects.

Sam is already well experienced in the production of London Plan Fire Statements for residential schemes of a similar size and complexity, as well as numerous challenging schemes of larger scale; making him well-suited to produce the London Plan Fire Statement for Meadows Hall.

Jack Partington

Jack is a Fire Engineer who has been an integral member of the fire design team since he joined BB7 as a graduate in 2018. He plays a key role in complex projects spanning RIBA Stages 1 to 5 and is well experienced in providing reliable engineered solutions to resolve challenging design problems.

He has produced and reviewed a multitude of London Plan Fire Statements from a diverse spectrum of industries and has significant expertise in the delivery of London Plan Fire statements for purpose-built residential developments of a similar scale and complexity, as well as projects of far greater scale.

Shane Ryan

Shane is an Associate Director with BB7 with 8 years' experience specialising in fire safety engineering and CFD modelling. Shane started at BB7 in 2012 from an electrical engineering background and transferred his skills into fire engineering.

Shane now manages a large team in our Chatham office comprising fire engineering and fire risk management, while leading major projects within his team. He has worked on a wide range of complex projects throughout the UK including residential, mixed-use developments, offices, hotels, shopping centres and educational premises. This involved producing fire strategies through different RIBA Stages, providing support during construction and undertaking complex engineering studies utilising computational fluid dynamics, zone modelling and fire engineering calculations.

3. Building Construction Methods – Policy D12B(1)

Policy D12B(1): The statement should detail how the development proposal will function in terms of:

1) The building's construction: methods, products and materials used, including manufacturer's details.

3.1 Proposed building construction

The design team have provided a description of the key building components for the development, which are reproduced within the following table:

Table 3.1 Building construction

Element	Description
Structure	*Apartment Block:* Reinforced concrete frame, with in-situ columns, shear walls, flat slabs and pre-cast stairs. *Mews Houses:* Load-bearing masonry (i.e., brick and block), with pre-cast concrete slab floors.
External wall	Brick outer-leaf, block inner-leaf, with non-combustible insulation throughout.
Roofs	Reinforced concrete slab and build-up to achieve $B_{ROOF}(t4)$ throughout.
Internal floors	Reinforced concrete slab with screed throughout.
Internal walls	Steel Framing System/metal stud partitions and fire-resisting plasterboard throughout.
Balconies	Steel stacked balconies with concrete paving slabs throughout.

As the project is in the early design stages, the exact construction methods and materials are yet to be fully specified as the design itself may develop as the project progresses. The design team will need to ensure that the products used meet the functional requirements to Part B4 of the Building Regulations irrespective of any design development.

The current contents of Table 3.1 represent an example of the likely construction methods and materials which are considered to be suitable for the development at this stage; once further detail on the proposed construction methods and materials is available, this section of the report will be updated accordingly.

3.2 Space separation

The distance between the buildings and relevant boundaries on site have been provisionally assessed in accordance with BR 187 to determine whether the buildings are suitably positioned to restrict fire spread to neighbouring infrastructure.

The North elevation of the apartment building is within 1m of the site boundary and therefore this elevation should be fire rated to the fire time of the building (i.e., 60 minutes), which should be achieved from each side of the wall separately. Any window openings in this elevation should also be fire rated to 60 minutes and fixed shut, unless they are restricted to a maximum size of $1m^2$ and each window is spaced at least 4m from each other.

As discussed in section 4.2 of this report, it is proposed that the South external wall at the ground level of the apartment building will be fire rated to 60 minutes for means of escape

purposes past this elevation – it is proposed that windows on this portion of the wall will not be fire rated and will instead be maintained at a height of at least 1100mm above the floor level to allow occupants to manoeuvre under the windows as part of their escape.

All other elevations have been determined as suitable for external fire spread based on the provisional calculations and therefore do not require any additional protection for space separation purposes. Detailed external fire spread calculations will be undertaken at the next stage of the project, however the above is considered suitable for planning purposes.

4. Means of Escape – Policy D12B(2)

Policy D12B(2): The statement should detail how the development proposal will function in terms of:

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.

4.1 Evacuation strategy

Apartment block

The apartment block will be designed for a 'stay-put' evacuation strategy. This means that in the event of a fire within one of the apartments, only the occupants within the apartment of fire origin will evacuate. All other residents within the apartment block are able to remain within their apartments, however, they are still able to evacuate at any time if they so wish.

The design team have indicated that the apartment block will be occupied by people living with learning difficulties who will be *"supported to live independently in their own flat with the support being provided in the ground floor office/flat"*. The staff who will reside in the support accommodation unit at the ground floor (see Figure 3) will be on site if any assistance is required, however, building management should assess the needs of all occupants of the apartment block to ensure they can be provided with a suitable alarm in the event of a fire and can make a safe evacuation.

The Grade A (Category LD1) automatic fire detection and alarm system (see Table 5.2) will incorporate Control and Indicating Equipment (CIE) which will enable staff to monitor the condition of the system and investigate any pre-alarms and fault alarms prior to full alarm activation. The CIE should have the capability to activate and silence all alarm sounders and any alternative warning devices which form part of the automatic fire detection and alarm system per apartment, per storey and for the entire building simultaneously. This should be provided for the use of suitably trained support staff and for the Fire Service as needed; the principles of the 'stay-put' evacuation strategy should be maintained wherever possible.

Fire safety management needs to take into account the full range of people who might use the building now and in the future, paying particular attention to the needs of disabled people with permanent or temporary impairment. The evacuation strategy will be monitored as the design progresses and the needs of the potential residents become clearer.

Mews Houses

Each Mews House will adopt an independent simultaneous evacuation strategy, whereby all occupants of the house of fire origin will make their escape upon alert from the automatic fire detection and alarm system within the house; it is proposed that only the house of fire origin will evacuate upon detection of fire.

The proposed location of the assembly point for both the apartment block and Mews Houses is illustrated in the figure below; this will need to be developed further as part of a detailed fire strategy management plan for the building.

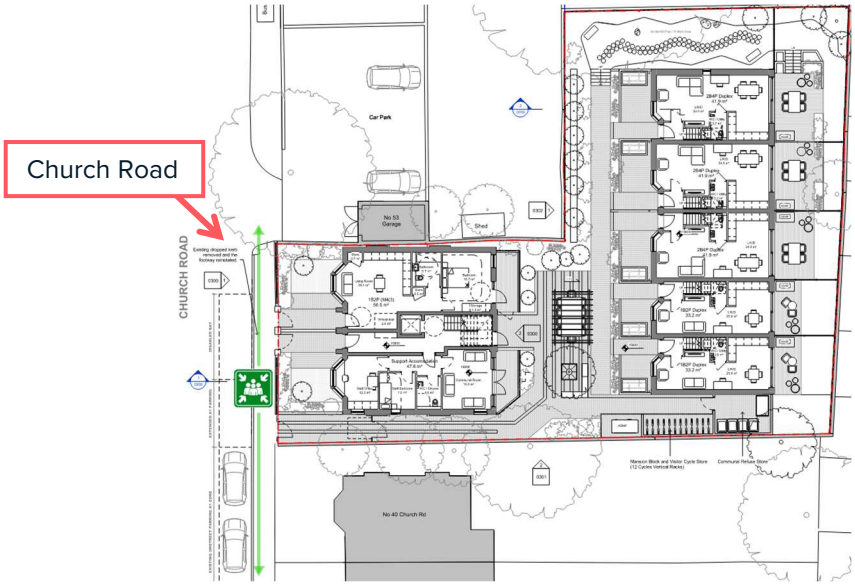

Figure 1. Location of assembly point

The evacuation assembly point is proposed to be on the pavement of Church Road; it is considered that occupants evacuating from the site would seek to move away from the fire origin and seek a place of safety at no specific point along the pavement of Church Road, as indicated by the green arrows on the figure above.

4.2 Means of escape principles

The internal layouts of both the apartment block and Mews Houses will be designed in accordance with the requirements outlined within BS 9991.

Apartment block

This report has been prepared on the basis that people living with learning difficulties will be housed in the apartment block only, which was previously indicated by the design team. Due to the provision of a unit labelled “Support Accommodation” at the ground floor of the apartment block (see Figure 3), BB7 have inferred that the occupants of the apartment block will receive assistance or support to some extent from a person who is suitably trained.

Further detail on the occupancy characteristics of the intended apartment block occupants must still be confirmed by the design team, however this report will progress on the basis that the apartment block is provided as a form of “specialized housing”.

Additional design requirements apply for “specialized housing”; defined within BS 9991 as:

“Accommodation that provides independent living for occupants who are wholly or mainly limited to a specific section of population and who are likely to require additional measures to secure their safety in the event of fire, including but not limited to accommodation provided for the elderly, children and people with a physical or mental impairment”.

The means of escape from each apartment will be directly into the protected staircase; aside from the M4(3) unit at ground floor which is accessed externally only. This is an acceptable design approach for a single stair building which meets the following requirements:

- Top occupied storey no more than 11m above ground.
- No more than three storeys above ground.
- No access to ancillary accommodation from the stair.

- Minimum 1.0m^2 Automatic Opening Vent (AOV) at the head of the stair.
- No more than two apartments per storey.
- Protected internal hallways to each apartment accessed from the stair.
  - Apartment hallway provided with 30-minute fire-resisting construction, FD30 doors, FD30S/SC front entrance door and a travel distance limited to 9m between the apartment front entrance door and the furthest door of the hallway.
  - BS 9991 also recommends that the travel distance between the furthest point of an apartment and the apartment front entrance door should be limited to 9m in specialized housing, which has been achieved throughout.

The apartment block is considered to meet the design recommendations above and therefore it is considered permissible to design the building as a small single stair building. The support accommodation at ground-floor level is considered to be akin to an apartment and is not considered as ancillary to the main use of the building; therefore, it is considered acceptable for this to be accessed directly from the stair. This design approach should be discussed with the Approving Authorities.

The staircase discharges at ground-floor level with direct access to outside via a final exit door to the east or west of the building.

The following figures present the escape route from a typical upper floor level and the ground floor level of the building:

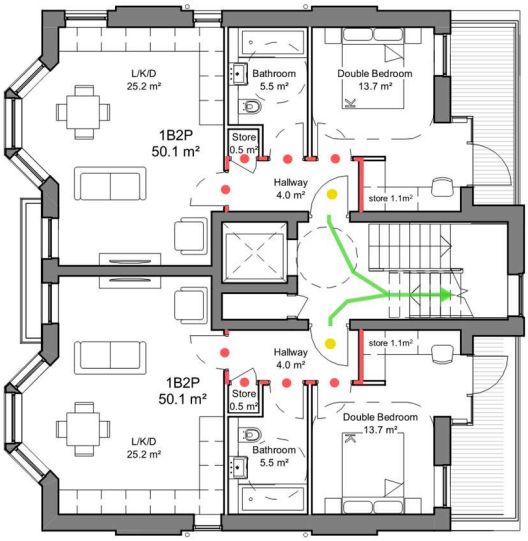

Figure 2. Typical upper-floor escape route

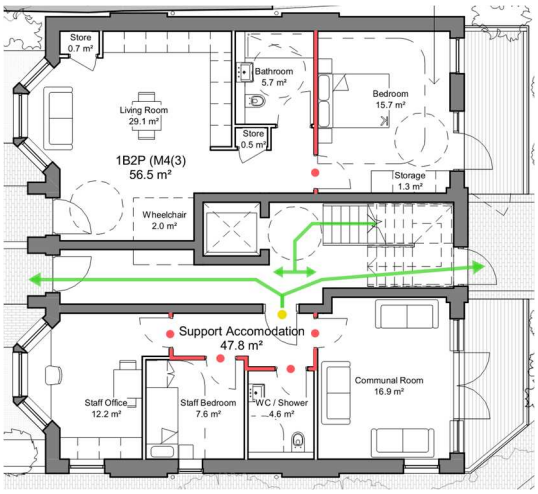

Figure 3. Ground floor escape route

In the figures above, the escape route is shown with the green arrow; the protected internal hallway within the apartments is shown with the red line representing 30-minute fire-resisting construction, the red circles indicating FD30 fire doors and the yellow circles indicating FD30S/SC fire doors.

In Figure 3, the M4(3) apartment will be provided with 30-minute fire-resisting construction as indicated by the red line and an FD30 door as indicated by the red circle; an alternative exit will be provided from the bedroom via a door into the courtyard area. This design is in accordance with the recommendations contained within BS 9991 and is therefore considered to be acceptable.

Mews Houses

The means of escape from each Mews House will be via a protected staircase which discharges at ground floor level with direct access to the courtyard via a final exit door to the west; the escape route from the courtyard is discussed further below.

This is an acceptable design approach when the protected staircase enclosure is provided with 30-minute fire-resisting construction and all internal doors to the staircase are provided as FD30 fire doors.

The following figures present the escape route from a typical upper-floor level and ground-floor level of the Mews Houses:

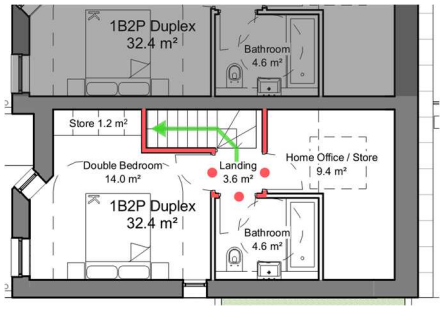

Figure 4. Upper-floor escape route

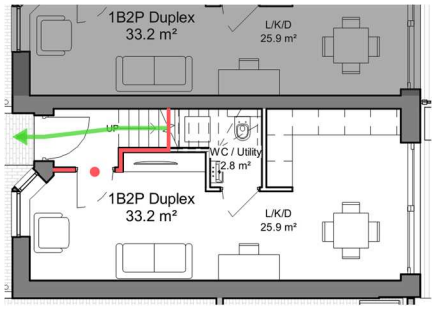

Figure 5. Ground floor escape route*

In the previous figures, the escape route is shown with the green arrow; the protected staircase enclosure is shown with the red line representing 30-minute fire-resisting construction and the red circles indicating FD30 fire doors.

Based on the current drawings, the internal layouts of the apartment block and Mews Houses are acceptable under BS 9991 – it will be ensured that an acceptable design for the internal layouts is maintained throughout the progress of the project.

Escape from the courtyard

The final exits from each of the Mews Houses and from the rear of the apartment block discharge into a secure inner courtyard, shown shaded in green in the figure below:

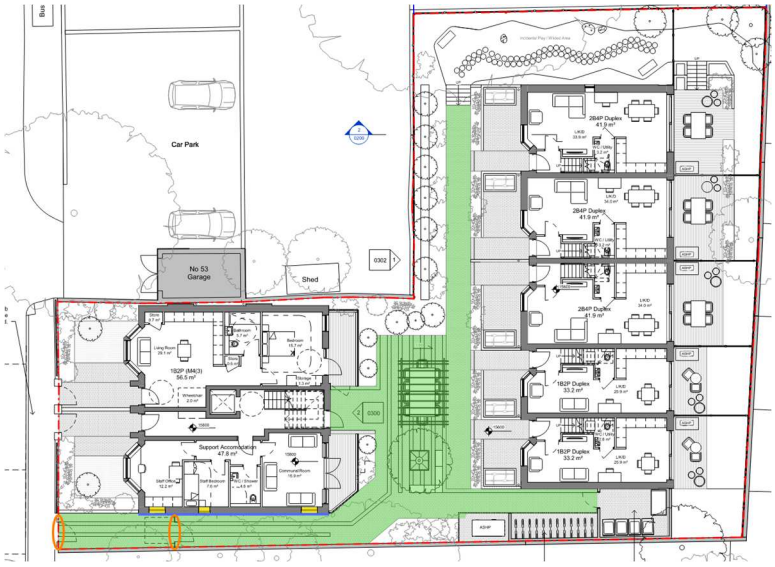

Figure 6. Courtyard escape

Upon leaving the courtyard, further escape is possible away from the development via the pavement on Church Road. It must be ensured that the doors/gates circled in orange in the previous figure are easily openable from the side of escape (courtyard-side) during an emergency; any locks should be provided with manual overrides and any electrically-powered security measures should failsafe to an unlocked positions upon power failure and upon activation of any detection system.

The previous figure also illustrates the additional fire-resisting construction which is necessary to protect the escape route from the courtyard discussed in Section 3.2; the blue line represents 60-minute fire-resisting construction and the yellow shaded areas represent windows which will only be provided from 1100mm above the ground level. These windows do not need to have specific fire-resisting properties; the 1100mm zone of 60-minute fire-resisting construction below the windows should provide occupants with sufficient space to manoeuvre past the windows as needed.

4.3 Disabled evacuation principles

Policy D5B(5): The development proposal should achieve the highest standards of accessible and inclusive design. They should:

5) 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.

Apartment block

The apartment block will be used for specialized housing and therefore requires additional provisions for the evacuation of occupants who may be living with some form of disability.

In the locations where warning devices are installed (i.e., fire alarms), they should cater for any applicable sensory conditions and should therefore be specified for compatibility with any specialist devices. Consideration should be given to the provision of visual alarm devices such as flashing beacons to ensure that all occupants can receive an adequate warning of fire. Table 5.2 provides further detail on the automatic fire detection and alarm system for the apartment block, which includes the provision of CIE to allow suitably trained staff and the Fire Service to monitor and control the fire alarms as needed.

Those responsible for evacuation planning need to consider a flexible plan depending on the need for support during evacuation, different occupant characteristics and possible effects on the evacuation sequence. Personal Emergency Evacuation Plans (PEEPs) should be complied, practised and reviewed before occupation. These may necessitate changes to manage different situations such as the planned sequence of an evacuation.

All tenants of the apartment building should also receive a pack explaining the evacuation from the building, which should be in an appropriate language for the end-user.

In line with the London Plan Policy D5 'Inclusive design', where a passenger lift is provided, at least one lift per core is required to be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building.

The apartment block has been designed with one lift serving all storeys; this will therefore be provided as an evacuation lift. This is the only lift in the development.

Where provided, a residential evacuation lift should operate utilizing one of the following methods and accordance with BS EN 81-76:

- Driver assisted evacuation.
- Automatic evacuation.
- Remote assisted evacuation.

Generally, evacuation lifts should be manually operated by a suitably trained, competent person, however, it is recognized that a competent person may be absent on a residential premise. In this instance one of the following operation methods should be proposed:

- Automatic evacuation operation.
- Building Management System (BMS) interface (automatic evacuation operation).
- Remote assisted evacuation.
- Remote building management (remote assisted evacuation operation).

The evacuation lift will be designed and installed in accordance with the relevant provisions of BS EN 81-20 and BS EN 81-70.

The route from the evacuation lift to outside will be step-free and suitable for the self-evacuation of a wheelchair user; the escape route from the M4(3) unit will also be step-free. If any level changes are provided to the ground floor, ramps no steeper than 1:12 should be provided in accordance with BS 8300.

The Fire and Rescue Service may take management of the evacuation on their arrival, but this should not be assumed as the evacuation of the building is the responsibility of the building management. The person responsible for the evacuation will need to pass information to the Fire and Rescue Services.

Those responsible for evacuation planning need to consider a flexible plan depending on the need for evacuation, different scenarios, and the actual condition as the evacuation progresses. These may necessitate changes to manage different situations such as the planned sequence of evacuation.

BS 9991 refers to BS 9999: 2017 for the design of evacuation lifts, which states (within Annex G) that evacuation lifts should be provided with dedicated protected lobbies for the lift to open into on each floor. It also states that refuges should be provided for the evacuation lift on each upper-level, which is a requirement for specialized housing within BS 9991. There is insufficient floor space within the staircase to incorporate a suitably sized protected lobby or a refuge to meet these requirements, therefore the evacuation lift will open directly into the staircase on each floor and refuges will not be provided.

This is considered acceptable on the basis that the staircase enclosure itself will be maintained as an area which is relatively fire-sterile (free of combustible items or any other hazards) which should reduce the ignition risk and fire load within the staircase. The apartment block is also relatively small, with three upper-levels and a total of seven apartments opening into staircase, each of which has a protected internal hallway. A 1.5m^2 AOV will also be provided at the head of the staircase which is an enhancement over the minimum requirement of 1.0m^2. Consequently, BB7 consider it acceptable for the evacuation lift to open into the staircase and for the staircase to be provided without refuges. This approach should be discussed with the Approving Authorities.

Conscious that the intended occupants of the apartment block may have learning difficulties, BB7 recommend providing an Emergency Voice Communication (EVC) outstation within the staircase on each upper-level, designed and installed in accordance with BS 5839-9: 2021, which allows for communication between an occupant and building management or the

emergency services and vice versa. This should form part of the Personal Emergency Evacuation Plans (PEEP), which should be provided for all apartment occupants in this case.

All doors in the apartment block will have at least 850mm clear width to allow for the manoeuvring of wheelchairs.

The provisions outlined in this section have been proposed to enable dignified emergency evacuation for all building users and to demonstrate inclusive design principles – BB7 consider these provisions to be satisfactory for the recommendations of the London Plan Policy D5(B)5.

Mews Houses

The recommendations contained within the London Plan Policy D5(B)5 are not considered relevant for individual dwellinghouses on the following basis:

There are no lifts in the Mews Houses, therefore no specific provisions have been made for disabled evacuation. This is considered acceptable on the assumption that any occupants of these dwellings would only make ingress to the parts of them from which they could adequately self-evacuate.

5. Passive and Active Fire Safety Systems – Policy D12B(3)

Policy D12B(3): The statement should detail how the development proposal will function in terms of:

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

The passive fire safety systems proposed at this stage are summarised in Table 5.1 below. Each of these systems will be developed further at the next stages of the design; the detailed design of these systems is not considered to impact planning and is therefore not considered at this stage.

Table 5.1 Passive systems

Location	Fire resistance period
Elements of structure	Apartment block: 60 minutes.
	Mews Houses: 30 minutes.
Compartment walls separating apartments from each other and from communal areas	60 minutes.
Compartment walls separating houses from each other and from the refuse store	60 minutes.
Floors	Apartment block: 60 minutes.
External walls requiring protection (refer to section 3.2)	Apartment block: 60 minutes.
	Mews Houses: 30 minutes.
Evacuation lift shaft in apartment block	60 minutes.
Rooms associated with life safety systems	120 minutes.
Protected shafts in apartment block	60 minutes.
Enclosure for the storage/charging of electrically-assisted wheelchairs*	30 minutes.
Fire stopping	In accordance with BS 476 series.
Fire doors	In accordance with BS 8214. The general rating of a fire door is half the rating of the wall in which it is contained but no less than 30 minutes, unless the door is to plant rooms, high risk areas and life safety equipment then the door should be the same fire time as the wall.

*The design team have indicated that the M4(3) unit at ground floor (see Figure 3) may have provision for the storage/charging of electrically-assisted wheelchairs or mobility scooters. This applies to any future areas of the development intended for the storage/charging of electrically-assisted wheelchairs or mobility scooters, which should be separated from the apartment escape routes by 30-minute fire-resisting construction. It would be considered acceptable for charging points to be located in a room within a protected internal hallway apartment, but not within the hallway itself.

The proposed active fire safety systems proposed at this stage are summarised in table 5.2 below. Each of these systems will be developed further at the next stages of the design; the detailed design of these systems is not considered to impact planning and is therefore not considered at this stage.

Table 5.2 Active fire safety systems

Active system	Description
Fire detection and alarm provision	Grade A, Category LD1 system, designed and installed in accordance with BS 5839-6: 2019 will be fitted within each apartment. CIE will be provided in a ground floor location suitable for the support staff and the Fire Service, designed and installed in accordance with BS EN 54-2: 1997+A1: 2006[1]. Each Mews House will be provided with a Grade D1, Category LD2 system, designed and installed in accordance with BS 5839-6: 2019. Category L5 system, designed and installed in accordance with BS 5839-1: 2017, will be fitted within the communal areas of the apartment block. No manual call points or alarm devices will be provided in the communal areas.
Smoke ventilation	1.5m^2 Automatic Opening Vent (AOV) will be provided at the head of the staircase enclosure in the apartment block[2].
Suppression	Category 2 sprinkler system, designed and installed in accordance with BS 9251: 2021, will be fitted throughout the apartment block[3]. Category 1 sprinkler system, designed and installed in accordance with BS 9251: 2021, will be fitted to the Mews Houses; further detail can be found in Section 6.2 of this report.
Emergency lighting	Provided to apartment block in accordance with BS 5266 and BS EN 1838.
Escape signage	Provided to apartment block in accordance with BS 5499-1 and BS ISO 3864-1.
Secondary power supplies	Each of the life safety systems within the building will be provided with a secondary power supply in accordance with BS 8519. The cabling between the primary and secondary will be diverse and will consist of fire rated cabling.

[1]Further consideration should be given to the provision of specialist alarms such as vibrating and visual alarm devices to ensure that all occupants are provided with an adequate means of alarm.
The CIE for the Grade A system will enable the support staff to monitor the condition of the system and investigate any pre-alarms and fault alarms prior to full alarm activation; it will also enable suitably trained support staff/Fire Service personnel to activate/silence any alarm devices as needed.

[2]The minimum requirement for the AOV at the head of the staircase is 1.0m^2; 1.5m^2 has been provided as a compensatory measure for disabled evacuation, discussed in Section 4.3 of this report.

[3]The apartment block is <11m and does not technically require sprinklers under the current guidance. The design team have confirmed that the intended occupants may have learning difficulties, therefore the building has been sprinklered throughout to provide a higher standard of safety to the occupants.

All systems in this section should be tested and maintained in accordance with the relevant British standard. This should be incorporated into the building management plan.

6. Access for Fire Service Personnel and Equipment – Policies D12(B)4 & D12(B)5

Policy D12B(4) & D12B(5): The statement should detail how the development proposal will function in terms of:

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.

And:

5) How provision will be made within the curtilage of the site to enable fire appliance to gain access to the building.

6.1 Site access

Fire Service vehicle access to the development will be via Church Road; the route from the pumping appliance parking location to the apartment block and Mews Houses is shown with red arrows in the figure below:

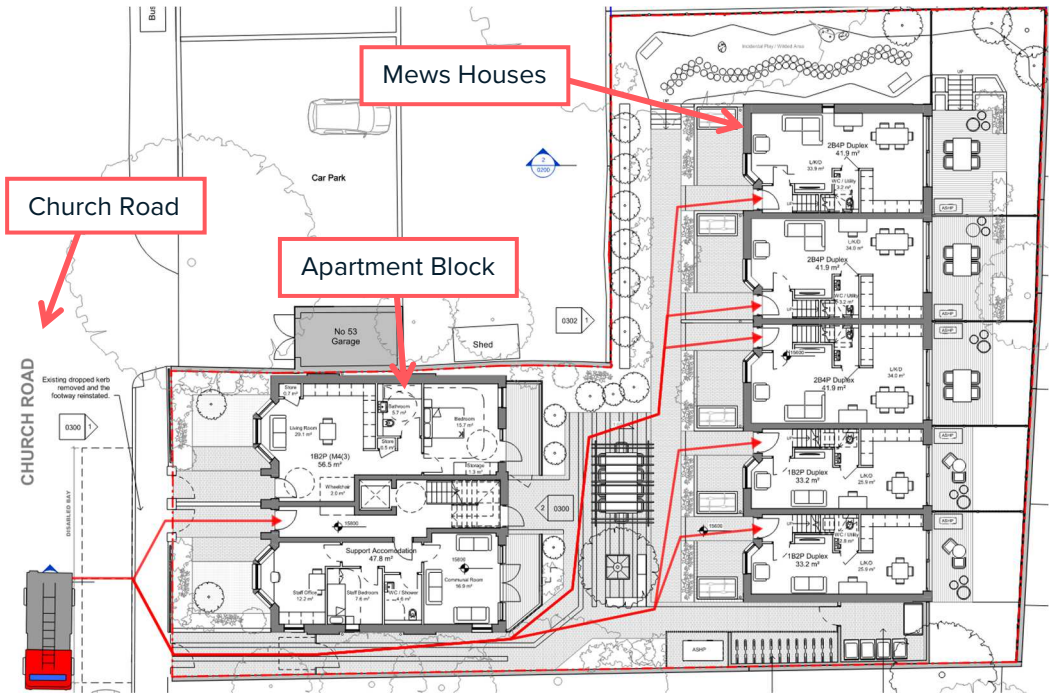

Figure 7. Fire Service access route to the buildings on site

All routes providing access to the site are existing public roads and assumed to be suitable for a fire appliance in terms of hard standings supporting the mass of a fire appliance; Fire Service access routes and hard standings should have dimensions in accordance with the following table:

Table 6.1 Fire service 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	14.0
High-reach	3.7	3.1	26.0	29.0	4.0	23.0

Note 1: In exceptional circumstances, other dimensions may be appropriate, subject to consultation with the Fire and Rescue Service.

Note 2: Because the weight of the high-reach appliance is distributed over a number of axles, it is considered that their infrequent use of a carriageway or route designed to 14 tonnes should not cause damage. It would therefore be reasonable to design the roadbase to 14 tones, although structures such as bridges should have the full 23 tonne capacity.

With regard to water supplies, the existing provision of fire hydrants around the site is currently unknown but can be confirmed by obtaining a services report from the local water authority. A fire hydrant will be provided within 90m of the entry point to the apartment block and each of the Mews Houses.

6.2 Firefighting facilities

Apartment block

The Fire Service will be able to access the furthest point of the furthest apartment within 45m on a route suitable for laying hose, therefore a dry riser will not be provided, which is permissible under the guidance of BS 9991.

The Fire Service will have direct access to the protected staircase at ground floor level; the protected staircase will also be provided with a 1.5m^2 AOV at the head.

The Fire Service will have access to the CIE for the detection system, which will facilitate the control of all alarms and any alternative warning devices which form part of the system. The CIE will be located at the ground floor of the building, in close proximity to the Fire Service entry point on Church Road.

Mews Houses

The Fire Service will be able to access the furthest point of the furthest sprinkler protected Mews House within 90m of the likely pumping appliance parking location on a route suitable for laying hose, which is considered an acceptable design approach under BS 9991 for houses with no floor more than 4.5m above ground level.

Due to the provision of parking spaces on Church Road as part of the development, the likely pumping appliance parking location would be further back from the site, therefore none of the Mews Houses would be within 45m hose laying distance and should all therefore be sprinklered throughout to allow the 90m hose laying distance to be applied.

7. Future Development – Policy D12B(6)

Policy D12B(6): The statement should detail how the development proposal will function in terms of:

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

A detailed fire strategy report for the development is recommended following planning approval; this will need to be developed further as the design progresses to ensure that the development is designed correctly and any future modifications to the design of the buildings do not compromise fire safety requirements.

A Regulation 38 report will be developed at the completion of the project. This should consist of fire safety information for the buildings, which will be passed to the responsible person. The aim of this requirement is to provide the responsible person with appropriate information to assist, operate and maintain the buildings in reasonable safety and assist in undertaking risk assessments.

Should the site be modified or developed further in any way in the future, it is imperative that a full review of the fire strategy is undertaken to ensure that the modifications do not adversely affect the original fire safety measures provided as part of the base build. Modifications include amendments to the design of the buildings, extensions to the buildings, the addition of new buildings on the site or the change of use of the buildings.

Any modifications should be assessed to ensure full compliance with the current Building Regulations and the Regulatory Reform (Fire Safety) Order 2005.

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