



Developed for:
Harrison Varma Projects Ltd

Fire Statement for Planning

Hampstead Lane Care Home



44 - 46 Hampstead Lane
London, N6 4LL

Issue P03
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Fire Statement for Planning

Hampstead Lane Care Home

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Client: Harrison Varma Projects Ltd

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Rev.	Date	Description	Author	Checked	Approval
P03	18.07.22	Update for revised arrangement	AB	FH	FH
P02	27.10.21	Updated compartmentation drawings	AB	-	-
P01	26.08.21	First issue for design team review	AB	FH	FH

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The checker has provided an internal review of the technical content of the report.

The approver confirms the report has received quality assurance in accordance with the principles of ISO 9001 and authorises external release of the document on behalf of Ashton Fire.

EXECUTIVE SUMMARY

Ashton Fire have been commissioned by Harrison Varma Projects Ltd to provide fire safety consultancy services for the design of a new care home at 44-46 Hampstead Lane site in Highgate, north London.

This document details the fire safety strategy design as developed for the scheme at RIBA Stage 2, intended to serve as the Fire Statement as required by the London Plan 2021 in support of the planning application for the development. This report may also be used to inform design development during RIBA Stages 3 to 6.

This fire safety strategy has been developed to meet or exceed level of safety expected by the life safety requirements with respect to fire under the Building Regulations 2010 (including amendments). This has been achieved through compliance with the prescriptive recommendations for life safety through the application of Approved Document B Volume 2 in the first instance. The strategy has also been developed to incorporate additional fire safety measures as necessary to meet the expectations of the London Plan 2021.

Apart from where noted in this report, the design will be in accordance with the recommendations of ADB. To facilitate ease of review, the key fire safety challenges and / or variations from the generic guidance documents are identified in Summary Table 1, with the fire safety systems outlined in Summary Table 2.

The project is for the design and construction of a new care home, providing living accommodation for elderly residents in care. The building primarily consists of en-suite bedrooms with associated living and dining areas. The building also includes areas to support the health of residents, staff accommodation, and ancillary spaces such as plant rooms and indoor car parking.

The building will utilise a progressive horizontal evacuation strategy, supported by a comprehensive fire detection and alarm system. In the event of a fire, the alarm will be raised in the compartment of detector head activation only following an inspection period, and staff will assist residents of this compartment to evacuate to a place of relative safety in an adjacent compartment, protected stair, or at a lower level of the building. Two evacuation lifts will be provided, one at each of the main stair cores, to facilitate the transport of larger numbers of less mobile occupants who may need assistance to escape.

Sprinklers will be provided throughout the residential and ancillary areas of the building, though the car park and adjacent plant spaces will be unsuppressed. Fire-resisting internal walls and doors will be provided in support of the compartmentation and means of escape strategy, and to enclose areas of special fire risk.

Fire-resisting construction will be required to resist fire spread to neighbouring buildings along the eastern façade, where this is located close to the site boundary. The building is expected generally utilise non- or limited combustibility materials within the external façade, though limited combustible materials could be incorporated where specified appropriately.

Firefighting operations will be carried out by access at the south façade of the building, where a vehicle hardstanding area and existing fire hydrant is available adjacent to Hampstead Lane. To facilitate firefighting operations to all areas of the building, dry risers will be provided within each of the two protected stairs that serve every floor of the building such that all areas are within 45 m of the nearest dry riser landing valve.

Summary Table 1 – Key fire safety strategy considerations

Item	Description	Report Ref.
Alarm system	A silent investigation period will be used initially, followed by automatic alarm in the compartment(s) of fire detection only.	Section 3.2
Evacuation lifts	Two evacuation lifts will be provided, to assist with evacuation of mobility impaired occupants.	Section 3.5
Suppression	Suppression will be provided to support means of escape and smoke venting in the residential and ancillary areas of the building. However, the car park will not be covered by the suppression system.	Section 5.1
Compartmentation	The Basement will not feature three compartments in support of a progressive horizontal evacuation strategy, where early egress from these areas is assumed.	Section 5.3
Firefighting access	Dry risers will be provided within two of the protected stairs to achieve hose laying distances of no greater than 45 m to all areas of the building, in lieu of vehicle access to the building façade.	Section 7.3
Basement smoke venting	Basement smoke venting is to be provided separately to each of the ancillary and car park areas. Suppression will be provided to support the basement ancillary smoke extraction system, but not the car park system.	Section 7.5

Summary Table 2 – Fire safety systems

Item	Description	Report Ref.
Detection and alarm	Category L1 system to BS 5839-1, having a double-knock system with a silent investigation period prior to alarm activation.	Section 3.2
Lifts	Each of the lifts at the protected stair cores will also be an evacuation lift in accordance with Annex G.2 of BS 9999 and BS EN 81-76 (if released).	Section 3.5
Emergency lighting	Provide throughout occupied areas and escape routes.	Section 3.6
Fire safety signage	Provided to indicate fire exits and escape routes.	Section 3.7
Automatic suppression	A Category 3 system to BS 9251, apart from within the car park and areas accessed via the car park.	Section 5.1
Fire hydrants	An existing hydrant will continue to serve site.	Section 7.2
Rising mains	Dry risers to BS 9990 provided within two of the protected stairs.	Section 7.4
Smoke control	Mechanical smoke venting to meet ADB guidance, in the basement ancillary areas to BS EN 12101-3 and basement car park to BS 7346-7.	Section 7.5
Stand-by power	Secondary power supplies meeting BS 8519, via either a generator, secondary intake, or battery back-up (where permitted).	Section 7.6

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1. INTRODUCTION

1.1 General

- 1.1.1 Ashton Fire have been commissioned by Harrison Varma Projects Ltd to provide fire safety consultancy services for a new care home building on the site of 44 – 46 Hampstead Lane in north London. This report documents the fire statement for the scheme in support of the planning application.
- 1.1.2 This document is not intended to portray detailed design information for fire safety systems or construction specifications. As a strategic document supporting and informing the wider design, it should be read in conjunction with the wider project design documentation.
- 1.1.3 This report may be used to support the end user of the building in the development of any fire safety management procedures and plans considered necessary to fulfil their responsibilities under the Regulatory Reform (Fire Safety) Order 2005 (FSO) and any other applicable fire safety legislation.
- 1.1.4 The design solutions proposed within this report are subject to further development at RIBA Stages 3 and 4, and eventual approval by the relevant authorities having jurisdiction (AHJs). For this project these will be the appointed building control body, in consultation with the London Fire Brigade.

1.2 Legislation and basis of design

- 1.2.1 Fire safety in buildings is typically governed by two pieces of legislation in the UK. The Building Regulations 2010, Part B, Fire Safety applies to building design, whilst for fire safety management in buildings, compliance with the Regulatory Reform (Fire Safety) Order 2005 (FSO) is required.
- 1.2.2 This strategy has been developed to meet a suitable level of fire safety as expected under Part B in Schedule 1 of the Building Regulations 2010 (as amended), namely:
- 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 and rescue service
- 1.2.3 The fire safety strategy will be developed to satisfy the requirements for fire safety as set out by the Building Regulations. The strategy has not been specifically developed to address property protection or insurer's requirements. However, the features that are included for life safety, as required by the Building Regulations 2010, will contribute in some extent to business and property protection.
- 1.2.4 The necessary level of life safety will be achieved utilising Approved Document B Volume 2 (ADB) [1] (including June 2022 amendments [2]) and documents referenced therein in the first instance. Fire engineering principles are employed to support alternative solutions where strict adherence to the codes would conflict with the wider aspirations for the scheme. Unless otherwise stated, it is expected that provisions will be provided according to recommendations of ADB as appropriate.
- 1.2.5 Departures from the guidance documents are identified and alternative proposals (and associated analysis) are documented for facilitating review with the project's approvers. In accordance with the fire safety engineering principles in the PD 7974 [3] codes of practice, it is deemed appropriate that all fire precautions are determined based on there being one seat of fire (i.e., accidental fires).

- 1.2.6 The client representative has noted that fire safety provision above-and-beyond the expectations of the Building Regulations are not expected at this stage, and that use of ADB design guidance is considered suitable (as opposed to use of HTM 05-02 guidance for healthcare facilities).
- 1.2.7 The strategy has been developed in cognisance of the Construction (Design and Management) Regulations 2015 (CDM 2015) [4], which sets out what designers are required to consider to protect anyone involved in the construction or ongoing use of a project. A summary of management and maintenance issues are provided in Section 8.
- 1.2.8 This strategy does not provide a comprehensive assessment of site fire safety during the building works or the phasing of these works, though a designer's review of construction site fire safety issues is recommended to be conducted during technical design. The Fire Protection Association [5] and the Health and Safety Executive (HSE) [6] issue guidance on identifying and managing fire precautions during the works, which should be consulted by the contractor or their specialist advisor when developing their construction fire safety plan.

1.3 The London Plan

- 1.3.1 As part of the planning submission, the London Plan (2021) also request that a 'Fire Statement' be provided for the building. It is intended that this fire strategy report will also serve as the Fire Strategy for the scheme.
- 1.3.2 Within the London Plan is the intent that buildings should achieve a high standard of fire safety, thereby reducing risk to life, minimising the risk of fire spread, and providing suitable and convenient means of escape which all building users can have confidence in. In addition to the expectations of the Building Regulations, the design of this development is developed to meet the fire safety expectations within Policies D5 and D12 of the London Plan as follows:

Policy D5 Inclusive design:

(B) 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.

Policy D12 Fire Safety:

(A) In the interest of fire safety and to ensure the safety of all building users, all developments 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 fire 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 which all building users can have confidence in
- 6) Provide suitable access and equipment for firefighting which 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 position of equipment, firefighting lifts, stair and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these
- 5) How provisions will be made with the curtilage of the site to enable fire appliances to gain access to the building
- 6) Ensuring that any potential future modification to the building will take into account and not compromise the base build fire safety/ protection measures.

1.3.3 This fire safety report has been developed in accordance with the above items. This document is intended to serve as strategic guidance, therefore detailed design information such as the methods of construction or the selection of specific products will not be included within this document. However, the minimum performance requirements to be achieved by certain products or materials in the building are stated within this report, which will be used to inform the selection of products during RIBA Stages 3 – 6.

1.3.4 In accordance with Policy D12(B), this report has been produced by a fire safety professional with suitable qualifications and experience for a development of this scale and nature, in this instance being an engineer with ten years' relevant experience who is a full member of the Institute of Fire Engineers (MIFireE) as well as being registered with the Engineering Council as a Chartered Engineer (CEng).

1.4 Reference information

1.4.1 This strategy is based on information provided by the design team to Ashton Fire as listed in Table 1. Additional contradictory information or subsequent design variations to the information supplied may render the findings and recommendations of this report invalid.

1.4.2 External references utilised in the generation of this report are summarised in Section 9.

Table 1 – Project documentation referenced

Description	Reference	Author	Revision
Proposed Site Plan	1627-PL-199	Wolff Architects	D
Proposed Basement	1627-PL-200		D
Proposed Lower Ground Floor	1627-PL-201		D
Proposed Ground Floor	1627-PL-202		D
Proposed First Floor	1627-PL-203		D
Proposed Second Floor	1627-PL-204		D
Proposed Roof Plan	1627-PL-206		D
Proposed Elevations	1627-PL-210		D
Proposed Elevations	1627-PL-211		D
Proposed Street Elevations	1627-PL-212		D
Proposed Elevations	1627-PL-213		B
Proposed Section A-A	1627-PL-220		C
Proposed Section B-B	1627-PL-221		C

2. PROJECT OVERVIEW

2.1 Building description

- 2.1.1 The project is for the design of a new residential care home on the site of the 44 - 46 Hampstead Lane in north London. The site currently features two dwellinghouses, that are to be demolished and replaced by the new, larger care home development as indicated in Figure 1.
- 2.1.2 The proposed building will be set across five floors (B, LGF, GF, 1st, and 2nd) and will have an uppermost occupied floor located at 7.0 m above the firefighting access level (GF) or 10.6 m above the Lower Ground floor, being the ground level on the lowest side of the building.
- 2.1.3 The building will provide residential accommodation for elderly residents in care. The residents will have private bedrooms with en-suite bathrooms accessed via a common corridor area. There will be shared living accommodation including dining rooms, lounges, and cinema rooms, as well as nurse stations. The building will also feature staff, kitchen, laundry, and car park facilities at Basement level.
- 2.1.4 The building is arranged as per Figure 2 to Figure 6. Three protected stairs will be provided within the building, reducing to two stairs (Stairs 2 and 3) at the basement and 2nd floor.
- 2.1.5 At Lower Ground Floor, the building features an external garden area, into which Stair 1 will discharge. Onward escape from this area will be available via a gate to the adjacent Courtenay Avenue at the north-west corner of the site. Stairs 2 and 3 discharge at Ground Floor towards Hampstead Lane.

2.2 Design occupancy

- 2.2.1 In accordance with Table 0.1 in ADB, the building is a 'Residential (Institutional) building in Purpose Group 2(a). This provides sleeping accommodation for occupants who may require assistance to exit the building in the event of a fire.
- 2.2.2 The maximum number of occupants expected within the various areas of the building have been calculated using a combination of floor space factors given by Table D1 in ADB and the number of bedrooms, as summarised in Table 2 below. Staff are also assumed to be present at an approximate rate of 1 per five bedrooms.

Table 2 - Design occupancy

Floor	Room / Space	Area (m ²)	Floor Space Factor	Occupancy
Second	18 bedrooms	N/A		22
First	18 bedrooms	N/A		22
Ground	15 bedrooms	N/A		18
	Office	16	6 m ² / person	3
	Café	80	2 m ² / person	40
Lower Ground	15 bedrooms	N/A		18
	Cinema / activity room	65	2 m ² / person	33
	Lounge / Dining	160	2 m ² / person	80
Basement	Staff ancillary areas	120	7 m ² / person	18
	Car park	12 spaces	2 persons / car	24

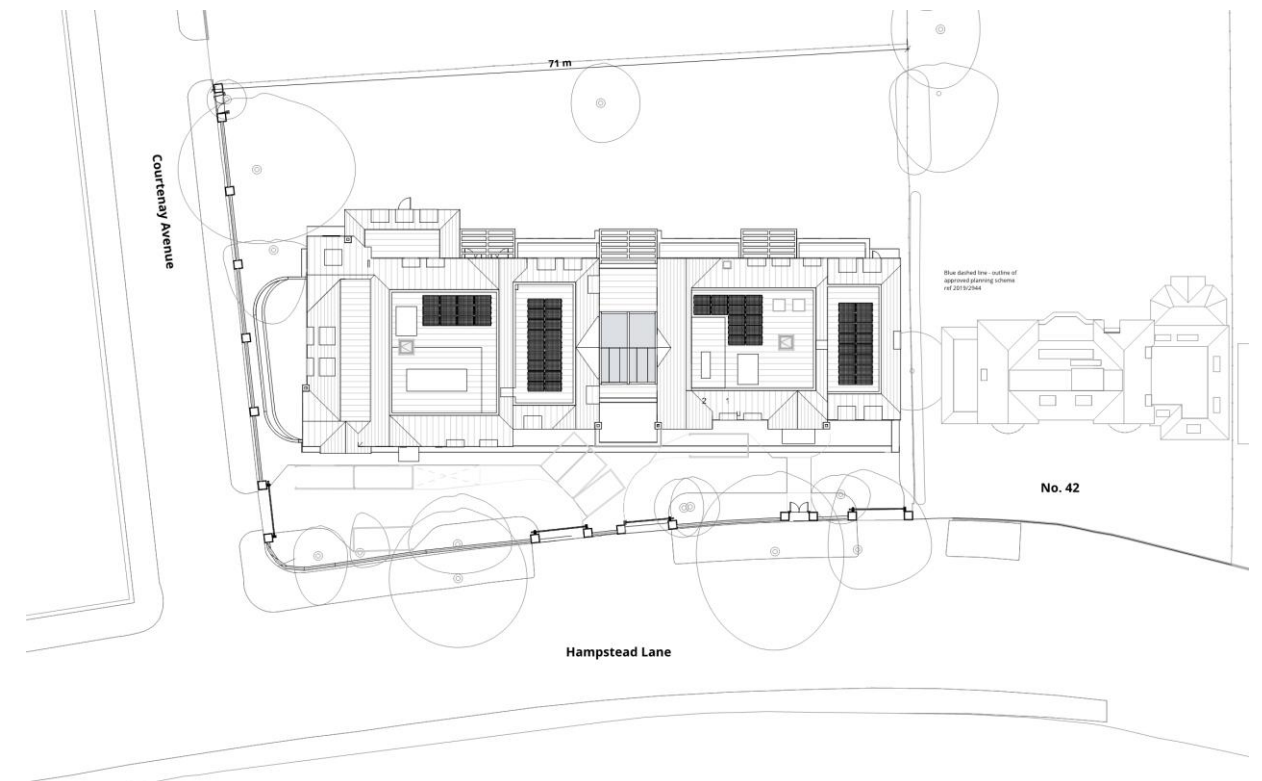


Figure 1 - Site arrangement

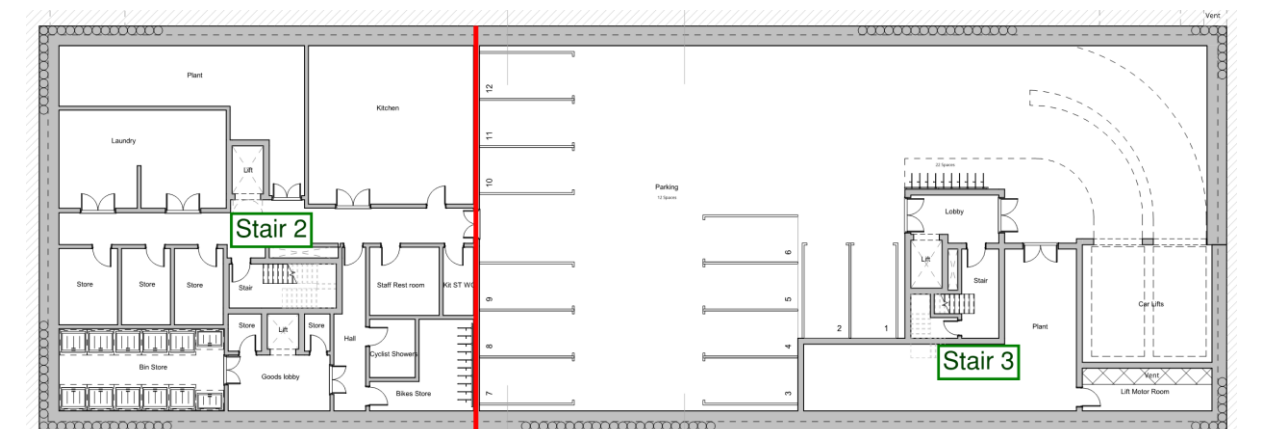


Figure 2 - Basement level (with stairs and compartment lines indicated)

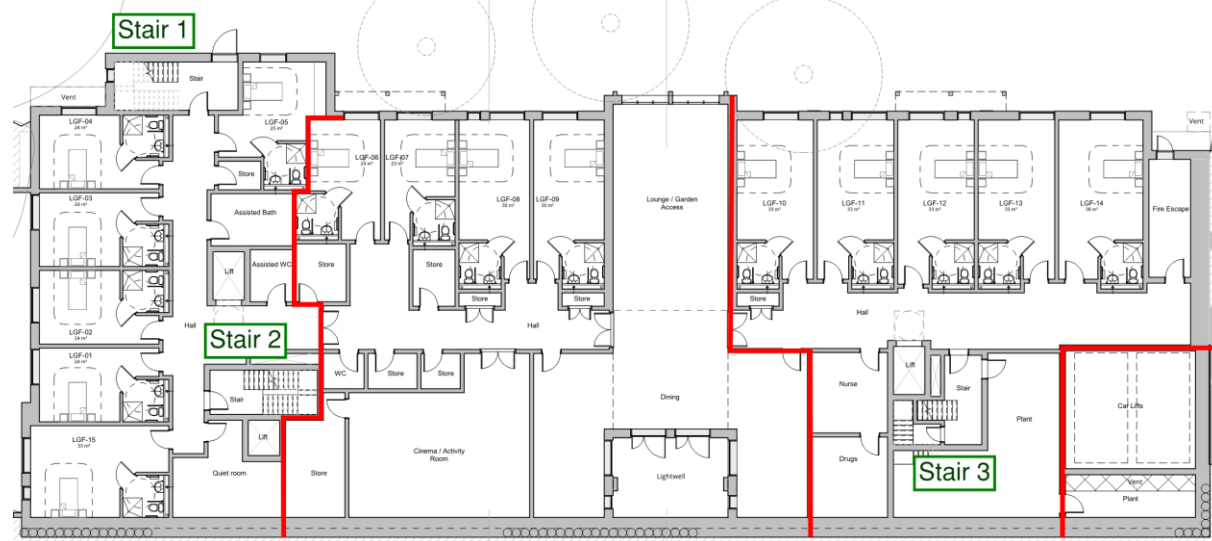


Figure 3 - Lower Ground Floor (with stairs and compartment lines indicated)

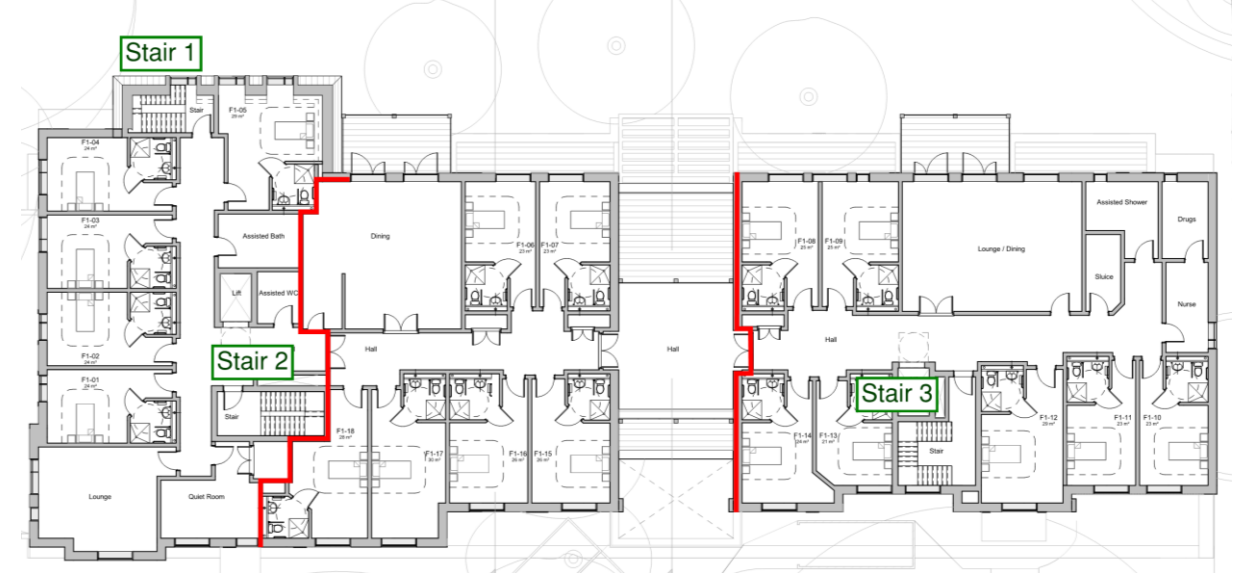


Figure 5 - First Floor (with stairs and compartment lines indicated)

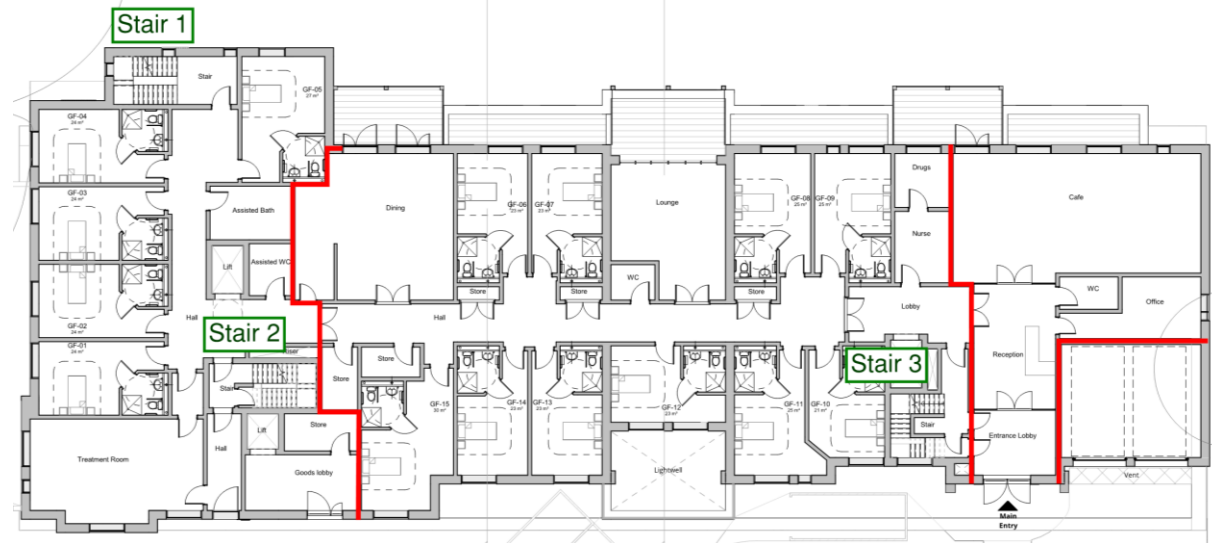


Figure 4 - Ground Floor (with stairs and compartment lines indicated)



Figure 6 - Second Floor (with stairs and compartment lines indicated)

3. MEANS OF WARNING AND ESCAPE

Building Regulations requirement B1:

"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."

3.1 Evacuation philosophy

- 3.1.1 The building shall operate a progressive horizontal evacuation philosophy. Upon alert being provided in the event of a fire, residents will be assisted by staff to move progressively away from the fire and through fire-resisting construction to adjacent areas of increased safety.
- 3.1.2 Occupants will generally be expected to remain within the building in the event of small fires, where moving to adjacent compartments is sufficient to maintain their safety. However, occupants would be assisted to vacate the building to an ultimate place of safety outside of the building if required. Fire-resisting construction within the building would support a prolonged evacuation process as part of the progressive horizontal evacuation philosophy.

3.2 Means of detection and alarm

- 3.2.1 A Category L1 detection and alarm system shall be provided throughout the building in accordance with BS 5839-1 [7]. This will typically include smoke detection in all rooms except toilets, stairway lobbies or toilet lobbies, small cupboards not more than 1 m², and shallow voids less than 800 mm in depth unless featuring a heightened risk of fire. Manual call points will be provided at storey and final exits, and such that all areas of the building are within 45 m of the nearest manual call point.
- 3.2.2 The activation of the fire alarm will utilise a 'double-knock' cause and effect protocol, with a 5-minute silent investigation period to be incorporated during which building management may seek to confirm where a real fire or false alarm has occurred. The system design is to be developed in detail by the fire detection and alarm supplier, but is expected to feature the following:
 - In the event of the first activation of a smoke detector head:
 - An alert signal at the fire alarm panel will sound. Acknowledgement of the alert will commence a 5-minute silent investigation period. Failure to acknowledge the alert at the panel within 1 minute will result in activation of the fire alarm.
 - During the 5-minute investigation period the alarm may be either manually activated should a real fire be discovered or reset should a false alarm be confirmed. The alarm will activate automatically following expiration of the 5-minute investigation period.
 - Immediate activation of the fire alarm in the event of any one manual call point, heat detector, or sprinkler head being activated, or in the event that a second smoke detector head activates during the acknowledgement or investigation periods as set out above.
 - Activation of the fire alarm would be in the compartment of detection only, initiating escape from this area into an adjacent compartment. In the event that detection occurs in multiple compartments, the alert should be sounded in each compartment in which a detection has occurred.
 - The alarm system would not automatically escalate to provide an alert throughout the building, though a manual switch should be provided at the fire alarm panel for the sounding of a general alarm. This could then be activated by management or the fire and rescue service in the event that full evacuation of the building was to occur.

- 3.2.3 Manual call points are to be provided with transparent hinged covered, to reduce the instances of casual or malicious operation. Operation of this two-action manual call point then involves lifting the cover and operating the manual call point in the normal manner.
- 3.2.4 Visual beacons or alternative means of warning should be provided in rooms or spaces where the background sound level could be louder than the fire alarm, e.g., plant rooms. Visual beacons should also be considered in areas where occupants with hearing difficulties may be in isolation, and vibrating pillows may assist management in rousing hard-of-hearing occupants from sleep.
- 3.2.5 The fire alarm control panel will be located at the main entrance lobby to the building, located to be visible to the attending fire and rescue service from outside the entrance. A repeated panel should be provided at the alternative entrance to the building.
- 3.2.6 It would be recommended that staff are provided with a handheld means of communication that may be used to convey information in the event of a fire. This could be via mobile phone, radio, or pager, or other suitable remote communication device being used to support the management of the facility.

3.3 Means of escape

- 3.3.1 To meet the recommendations of ADB, the maximum permitted travel distance for the various areas to either a point of choice (for single directional travel), storey / final exit, or adjacent compartment are to be in accordance with the limits summarised in Table 3.
- 3.3.2 With progressive horizontal evacuation being utilised within the building, compartment and storey exits are required to be provided in accordance with Section 2.36 to 2.38 of ADB. The floors featuring bedroom areas are arranged such that all floors feature at least three compartments, and that each compartment has escape in at least two directions (to either a stair or an adjacent compartment).
- 3.3.3 Each compartment features less than 10 bedrooms, limiting the number of occupants expected to be required to make an escape in the event of a fire. Further assistance is provided through provision of a sprinkler system to limit fire growth (see Section 5.1), allowing management staff to contain the fire in the room of origin and then evacuate residents from this area.
- 3.3.4 The central corridor which provides access to all rooms will be a protected corridor. In accordance with Section 2.46 in ADB, fire doors to bedrooms need not be provided with an automatic self-closer where a sprinkler system is provided.

Table 3 - Travel distance limitations

Area	Recommended maximum travel distance	
	Single direction (m)	Multi-direction (m)
Within bedrooms	9	18
Bedroom corridors	9	35
Car park	25	45
Places of special fire hazard	9	18
External roof plant	60	200
Elsewhere	18	45
Note: These figures are for actual travel distances including consideration for furnishings.		

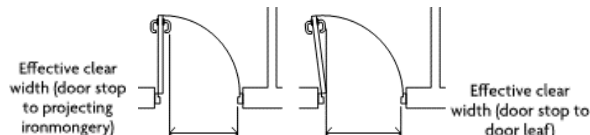
- 3.3.5 Dead-end corridors leading to bedrooms are to be no greater than 9 m in length. Ancillary rooms may have single direction of travel distances of up to 18 m within the room and corridor in total.
- 3.3.6 The basement will typically be used by staff and for car parking only. Two compartments are provided where progressive horizontal evacuation is not deemed necessary in this area. Each compartment has access to either a protected stair or the adjacent compartment within the recommended travel limits.
- 3.3.7 Areas occupied by greater than 60 occupants are to be supported by exits of adequate capacity as summarised in Table 4. The required sizes of exits to suit the expected number of occupants is set out in Table 5. These widths will be achieved in all circumstances.
- 3.3.8 The maximum design occupancy of the building is circa 100 people. As detailed in Table 6, the provided escape stairs would offer ample capacity for escape, where these are intended to support the progressive horizontal evacuation arrangements. All stairs are accessed via protected corridors or lobbies, so discounting of a stair is not required.

Table 4 – Exit width capacities

Exit width (mm)	Maximum number of people served
750 to 849	60
850 to 949	110
1,050 to 1,099	220
1,100 and greater	Door width (in mm) / 5

Notes:

Exit widths are for clear widths measured in accordance with Diagram D1 in ADB as per below:



Where an area has an occupancy of greater than 60 people, at least two exits are to be provided. The largest exit provided is to be discounted when calculating the required width for the remaining exits.

Doors hung to swing against the flow of escaping occupants are to serve a maximum of 60 people, irrespective of the available clear exit width.

Doors opening onto stairways are to be sited so as not to encroach into escape widths in stairs.

Only exits provided with suitable door fastening hardware may be included in escape capacity calculations.

Table 5 – Exit width capacity provisions from ancillary areas

Floor	Area	Occupants	Provided width (mm)	Capacity
LGF	Lounge / Dining	80	2x ≥850 (outward swinging)	110 people

Table 6 – Escape stair provisions

Stair	Floors above served	Provided width (mm)	Capacity (persons)
Stair 1	2	1,000	190
Stair 2	2	1,000	190
Stair 3	2	1,000	190

Note:

Handrails which do not intrude more than 100 mm into the clear escape route width may be included without reducing the considered available stair width.

3.4 Final exits from stairs and onward escape

- 3.4.1 In general, it is expected that within the progressive horizontal evacuation process occupants would use stairs to transfer floors initially, rather than to exit the building. As such, most occupants would be expected to leave the building via the main entrance if required, except for if a fire occurs in the vicinity of the main entrance and occupants are escaping in a direction away from this.
- 3.4.2 Final exits from protected stairs are typically recommended have a clear width at least as wide as the stair they serve, to prevent congestion from occurring at the base of the stair. However, for a progressive horizontal evacuation philosophy, the means of escape period would be prolonged, and the stairs and final exits used only where it is no longer safe for occupants to remain in the building.
- 3.4.3 Based on the relatively low maximum occupancy (expected to be in the region of 100 people) and prolonged evacuation time, it is considered sufficient that final exits from stairs have a clear width of at least 850 mm only, being the clear width recommended for use by wheelchair users.
- 3.4.4 Stairs 2 and 3 will discharge to the south of the building at Ground Floor, whereas Stair 1 discharges to the garden on the north side of the building at Lower Ground Floor.
- 3.4.5 Travel beyond the building final exits must be away from the building, towards a place of safety, and not be jeopardised by unprotected openings of the building. This is achieved generally through escape being available away from the building to a distance of at least 1.8 m at each of the final exits, before onward escape to an ultimate place of safety being available via external paths.
- 3.4.6 Assembly areas should be located such that they are located remotely from access routes for the fire and rescue service, and evacuation from the building can be achieved without exposure to a hazard from a building fire. It is suggested that the area at the side of the building adjacent to Courteney Avenue could be considered for the assembly area.
- 3.4.7 The selection of appropriate assembly areas outside the building is an operator-led exercise. Landscape design must ensure safe escape to and from the relevant locations, i.e., routes should be usable by all occupants, where crossing grass may not be appropriate for all mobility aids. This must include the landscaping design of the external area at Lower Ground Floor, which forms onward escape routes from final exits to a place of ultimate safety.

3.5 Means of escape for disabled persons

- 3.5.1 It is envisaged that occupants will be able to escape to a place away from danger, either unassisted or with assistance from trained care home staff. There will be a certain proportion of building occupants, such as those who are non-ambulant disabled (e.g., wheelchair users), who will not be able to negotiate stairs unaided.
- 3.5.2 It should be noted that under the Regulatory Reform (Fire Safety) Order 2005, it is the duty of the responsible person along with their appointed fire safety assistants to assist everyone to a place of relative safety in an adjacent compartment or ultimate safety outside in the event of an emergency.
- 3.5.3 As a residential care home, there may be a significant number of occupants present who would have difficulty traversing stairs during a fire. To assist management in the event of an evacuation, each of the two lifts at the escape stair cores will be an evacuation lift.
- 3.5.4 The evacuation lifts are to be provided in accordance Annex G.2 in BS 9999 [8], and with BS EN 81-20 [9], BS EN 81-70 [10], and BS EN 81-76 [11] as relevant. The cars should be at least Type 2 under BS EN 81-70 to support the evacuation of persons with disabilities.
- 3.5.5 At the above-ground and basement levels, disabled persons will be able to wait within the protected corridors, protected stairs, or adjacent compartments in relative safety prior to descending stairs or using evacuation lifts. This will enable them to wait in a place of safety while the other occupants descend, before making their way out at their own pace with necessary assistance.
- 3.5.6 Waiting areas are to be located not to impede the movement of occupants onto stairways or escape routes, be clearly identified, and provided with emergency voice communication (EVC) between to the management / security positions in accordance with BS 5839-9 [12]. It is recommended that EVC points are provided adjacent to each of the evacuation lifts at all floors.
- 3.5.7 Any disabled member of staff or residents should have a Personal Emergency Evacuation Plan (PEEP) and the procedures should be practised. A Generic Emergency Evacuation Plan (GEEP) will need to be written for general residents and any members of the public who would need assistance to escape. Further information can be found in BS 8300-2 [13] and the DCLG Publication "Fire Safety Risk Assessment Supplementary Guide – Means of Escape for Disabled People" [14].

3.6 Emergency lighting

- 3.6.1 Emergency lighting will be installed to provide temporary illumination in the event of failure of the primary power supplies to the normal lighting system. As part of the emergency lighting system, escape lighting will be provided to ensure the escape routes are illuminated at all material times. Adequate artificial lighting will be provided in all common escape routes and will be of a sufficient standard to enable persons to see to escape.
- 3.6.2 Emergency lighting will be installed in accordance with the recommendations of BS 5266 [15], BS EN 1838 [16] and BS EN 60598-2-22 [17].
- 3.6.3 Emergency lighting will illuminate all occupied areas, common evacuation routes (internal and external as necessary) and essential areas including plant areas. It will also illuminate a safe exit route including fire exits, fire alarm call points, changes in level or direction and fire-fighting equipment. Lighting to escape stairs should be on a separate circuit from that supplying any other part of the escape route.
- 3.6.4 Primary and emergency lighting will be required for any external escape routes that will not be lit by surrounding street lighting.

3.7 Fire safety signage

- 3.7.1 Fire safety signs will be installed where necessary to provide clear identification of fire precautions, fire equipment and means of escape in a fire. All parts of the development will be fitted with appropriate fire safety signage to comply with The Health and Safety (Signs and Signals) Regulations 1996, i.e. signage to be specified in according to BS ISO 3864-1 [18], BS 5499-4 [19] and BS 5499-10 [20].
- 3.7.2 The purpose of fire signs is to direct persons towards fire exits, or to provide specific information or warning about equipment, doors, rooms or procedures. They should be recognisable, readable, and informative, as they convey essential information to regular and infrequent users of the premises, and the fire and rescue service.
- 3.7.3 Fire notices should be permanently displayed in conspicuous positions throughout the building, including storey exits, and should be specific to it.
- 3.7.4 All fire doors, other than bedroom doors and lift landing doors, will be marked with the appropriate fire safety sign conforming to BS 5499-1 [21] (white on blue) according to whether the door is:
- to be kept closed when not in use ('FIRE DOOR - KEEP SHUT').
 - to be kept locked when not in use ('FIRE DOOR - KEEP LOCKED').
 - held open by an automatic release mechanism ('AUTOMATIC FIRE DOOR - KEEP CLEAR').
- 3.7.5 Any emergency securing device fitted to doors on escape routes are to be provided with instruction notices, adjacent to the device, indicating the method of operation.

4. INTERNAL FIRE SPREAD – LININGS

Building Regulations requirement B2:

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

4.1 Internal wall and ceiling linings

- 4.1.1 During the development of a fire in a building, the choice of material for the lining of walls and ceilings can significantly affect the spread of fire and its rate of growth. Restrictions are placed on the wall and ceiling lining materials within certain areas of buildings to limit the spread of fire and production of smoke in these areas.
- 4.1.2 It is particularly important that in circulation spaces, where the rapid spread of fire is most likely to prevent occupants from escaping, the surface linings are restricted, by making provision for them to have low rates of heat release and surface spread of flame.
- 4.1.3 All wall and ceiling linings should meet the recommendations of Section 6 in ADB when tested under the European Classifications (in accordance with BS EN 13501-1 [22]) as summarised in Table 7 below.
- 4.1.4 The surface linings of walls and ceilings should generally conform to the classification recommended in Table 7 for the appropriate location. ADB includes provision for parts of walls in rooms to be of a lower class than the remainder of the room, but not lower than European Class D-s3, d2, provided that the floor area of those parts in any one room does not exceed half of the floor area of the room, subject to a maximum area of 60 m².

Table 7 – Surface spread of flame requirements

Location	Euro Class
Small rooms ≤30m ²	D-s3, d2
Circulation spaces	B-s3, d2
Other rooms	C-s3, d2

4.2 Rooflights and thermoplastic materials

- 4.2.1 Any non-plastic rooflights are to meet the recommendations of Table 7 above.
- 4.2.2 Where thermoplastic materials are used for rooflights, fanlights or diffusers within the building, these will be in accordance with Section 6.13 to 6.18 of ADB. This places restrictions on allowable areas of diffusers and minimum separation distances between areas depending on the type of thermoplastic material used.

5. INTERNAL FIRE SPREAD – STRUCTURE

Building Regulations requirement B3:

- “(1) The building shall be designed and constructed so that, in the 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. For the purposes of this sub paragraph a house in a terrace and a semi-detached house are each to be treated as a separate building.
- (3) Where reasonably necessary to inhibit the spread of fire within the building, measures shall be taken, to an extent appropriate to the size and intended use of the building, comprising either or both of the following:
 - (a) sub-division of the building with fire resisting construction;
 - (b) installation of suitable automatic fire suppression systems.
- (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.”

5.1 Automatic fire suppression

- 5.1.1 An automatic suppression system (i.e., sprinklers) is not required by ADB Residential Institutional based on building height. However, the design for means of escape (see Section 3.3) and basement smoke venting (see Section 7.5) is to be supported by suppression to meet the guidance in ADB.
- 5.1.2 The incorporation of an automatic suppression system would also assist management in the event of a fire, limiting likely fire growth and reducing the risk posed to residents and staff during transfer between compartments under the progressive horizontal evacuation philosophy.
- 5.1.3 The automatic suppression system provided is recommended to be in accordance with a Category 3 system to BS 9251 [23], as recommended in Table 1 of this standard for residential care homes with more than 10 residents.
- 5.1.4 All areas of the building are to be covered by the automatic sprinkler system, except for those spaces allowed to be omitted by BS 9251. The car park compartment at Basement level will also be unsprinklered, subject to agreement with Building Control, where BS 9251 sprinklers are not suitable for use in car parks <100 m² and where this area does not require suppression in support of means of escape or car park smoke venting.

5.2 Structural fire resistance

- 5.2.1 The required period of fire resistance for structural elements has been based upon the recommendations in Table B4 in ADB for a Residential Institutional building with an uppermost floor at not more than 11 m above ground level. As such, structural elements required to be fire-resisting should achieve a minimum rating of 60 minutes.
- 5.2.2 Structural elements recommended to be provided with fire protection include those which support an occupied floor or fire-resisting construction, those which support heavy items that could pose a risk to firefighters operating below on failure, or elements essential to the stability of the building (such as cross-bracing). These elements should be identified by the structural engineer and also provided with suitable fire protection, utilising the safety factors for the fire design loading case (which are often less onerous than the wind design loading case safety factors for stabilising members).

5.3 Compartmentation and fire-resisting construction

- 5.3.1 Buildings utilising progressive horizontal evacuation are to feature a minimum of three compartments per storey and all floors will be compartment floors in accordance with Section 2.36 in ADB. This will be provided, except for in the ancillary basement areas (as discussed in Section 3.3). Each compartment may include a maximum of 10 beds, to meet Section 2.39 of ADB.
- 5.3.2 Certain walls will be fire-resisting to protect bedrooms, support means of escape, or enclose hazard areas. The required fire-resisting construction is summarised in Table 8 and indicated on the fire strategy mark-ups in Appendix A (with minor comments to be addressed during detailed design).
- 5.3.3 The car park and associated rooms will be unsprinklered, and as such, will be separated from sprinklered areas by compartmentation achieved a minimum fire resistance rating of 60 minutes.
- 5.3.4 Ancillary accommodation to be enclosed by fire-resisting construction includes plant rooms, cleaner / chemical / clothes stores, day rooms, smoking rooms, disposal rooms, kitchens, and linen stores.

Table 8 – Periods of fire resistance for fire-separating elements (in minutes)

Part of Building	Minimum Fire Resistance rating when tested to the relevant part of BS 476 (mins)			Methods of Exposure
	Loadbearing	Integrity	Insulation	
Structural elements	60	n/a	n/a	Exposed Faces
Compartment floor	60	60	60	From underside
Compartment wall	60	60	60	Each side separately
External walls, where distance from the relevant boundary is:				
- Within 1,000 mm	60	60	60	Each side separately
- At least 1,000 mm	60	60	15	From the inside
Escape stairs	60	60	60	Each side separately
Walls within 1.8 m of external escape routes	30	30	30	From the inside
Protected lobbies or corridors	30	30	30	Each side separately
Separation to bedrooms	30	30	30	Each side separately
Lift and service riser shafts	60	60	60	Each side separately
Places of special fire hazard and ancillary accommodation	30	30	30	Each side separately
Life safety equipment rooms	120	120	120	Each side separately
Cavity barriers	n/a	30	15	Each side separately
*as detailed in Section 6.3 to resist the external spread of fire to or from neighbouring buildings				

5.4 Fire doors

- 5.4.1 Fire doors are to be provided as set out in Table 9 and as illustrated in Appendix A, to meet the expectations of Table C1 in ADB. Doors on escape routes should not be fitted with locks, latch or bolt fastenings or should only be fitted with simple fastenings that can be readily operated (without the use of a key) from the side approached by occupants making an escape.
- 5.4.2 Doors should generally be hung to open in the direction of escape and should always do so where it is expected that the number of persons expected to use the door at the time of a fire is more than 60. In corridors having escape in each direction, doors are recommended to swing in both directions.
- 5.4.3 Vision panels should be provided where doors on escape routes sub-divide corridors, or where doors are hung to open in both directions. Further vision panels may be required to suit the generally access and operational requirements of the building.
- 5.4.4 Any fire doors fitted with hold-open devices should release on:
- actuation of the fire alarm system.
 - manual operation or operation of a manual switch fitted in a suitable position, if necessary.
 - failure of the electricity supplies.
- 5.4.5 Where doors on escape routes need to be secured against unauthorised use by electrically powered access control measures when the building or part of the building is occupied, it should also be overridden from the side approached by occupants making an escape. Electrically secured doors should return to the unlocked position:
- On operation of the detection and alarm system.
 - On loss of power or system error.
 - On activation of a manual door release unit (Type A) that is designed to BS EN 54-11 [24] and is positioned at side of the door that is approached by people making their escape. Where the door provides escape in either direction, a unit should be installed on both sides of the door.

5.5 Fire-stopping and penetrations through fire-resisting construction

- 5.5.1 Fire-stopping should be provided at the junction of fire-separating walls and external walls to prevent a fire from travelling around the junction and into the neighbouring space. Penetrations through lines of fire-resisting separation should be fire-stopped using a system which will achieve the same fire resistance rating as the penetrated wall or floor.
- 5.5.2 To maintain the fire resistance of separating construction, any pipe or cable penetrations through lines of fire-resisting separation should be fire-stopped in accordance with one of the following methods set out by Section 10 of ADB, unless located within a protected shaft. Figure 7 is provided to assist in the interpretation of these recommendations.
- for pipes of any diameter, a proprietary seal which has been shown by test to meet the fire-resistance rating of the wall, floor, or cavity barrier for the penetration circumstance; or
 - for pipes with a restricted diameter, keeping the opening as small as possible and providing fire-stopping around the pipe. The nominal interior diameter of the pipe should not be more than the relevant dimensions given in Table 10.1.
- 5.5.3 Where a duct crosses fire-resisting construction protecting escape stairs, corridors, lobbies, or compartment walls, dampers on fusible links are not sufficient. Either combined fire-and-smoke dampers activated upon smoke detection (ES-type dampers) are provided, or the duct should be fire-resisting / enclosed within fire-resisting construction.

Table 9 - Fire doors

Position of door	To BS 476-22 [25]	To BS EN1634-2 [26]
Enclosing a protected stair, lobby, or corridor	FD 30 S	E 30 Sa
Within a compartment wall	FD 60 S	E 60 Sa
Bedroom doors (self-closers not required where automatic suppression provided)	FD 30	E 30
Enclosing a service riser (self-closers not required where normally locked shut).	FD 30	E 30
Enclosing a place of special fire hazard	FD 30	E 30
Enclosing a lift	FD 60	E 60

Notes: The ratings shown above are for integrity only.
Smoke seals are indicated by the suffix 'S' (to BS 476-31 [27]) or Sa (to BS EN 1634-3 [28]) and are required in all doors which form the enclosure to protected escape routes.
All timber fire doors should be installed in accordance with the expectations of BS 8214 [29]. The lift doors are to be classified to BS EN 81-58 [30].

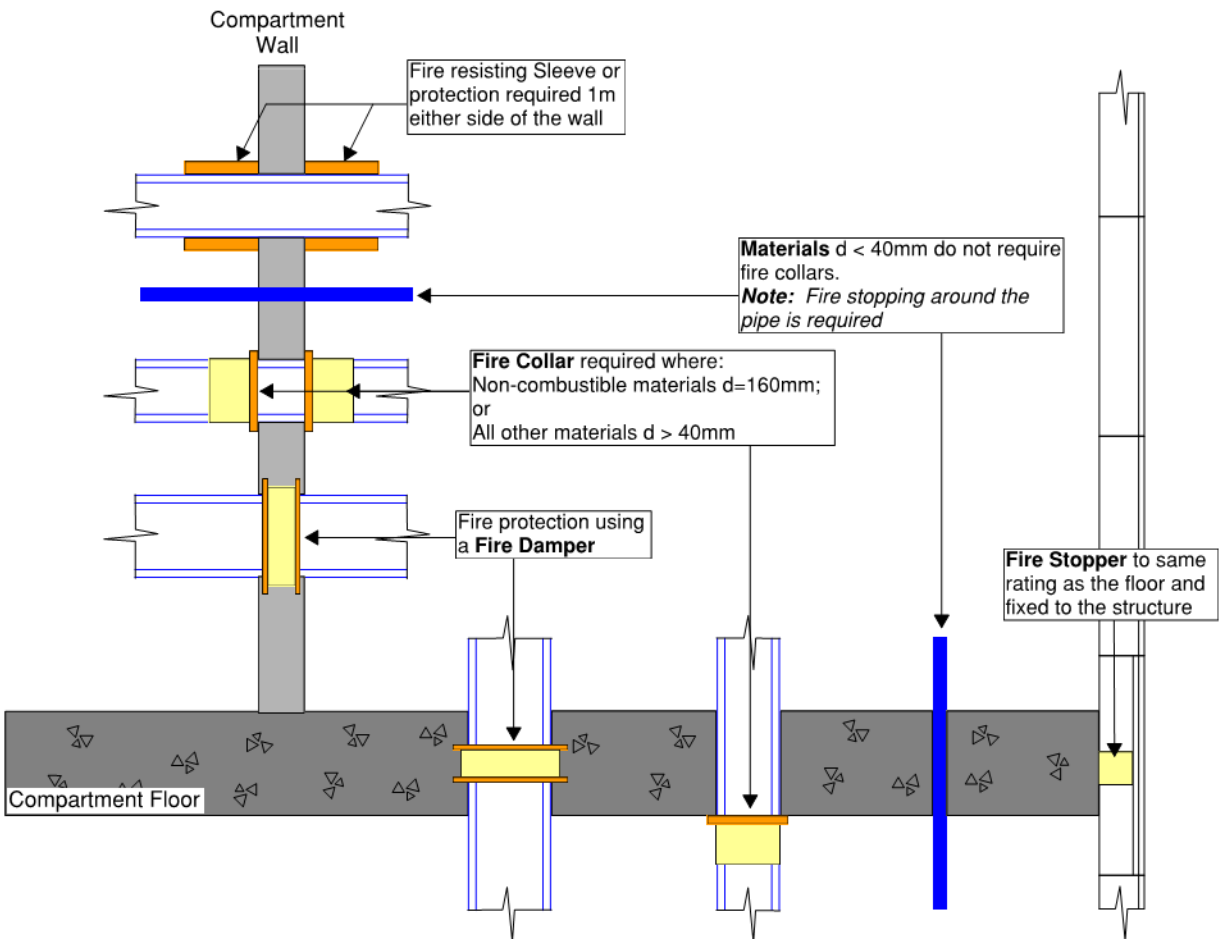


Figure 7 - Fire-stopping expectations

5.6 Cavity barriers and concealed spaces

- 5.6.1 Cavity barriers are provided to prevent the rapid spread of unseen fire or smoke in voids, and to prevent the spread of fire around compartmentation via voids. Extensive concealed cavities generally require cavity barriers to sub-divide them, as illustrated in Figure 8.
- 5.6.2 All cavity barriers should have a fire resistance rating of at least 30 minutes for integrity (E) and 15 minutes for insulation (I). In general, cavity barriers should be at 20 m centres in cavities with exclusively Class C-s3, d2 linings or better. For other linings, the spacing between cavity barriers should be limited to a maximum of 10 m.
- 5.6.3 Cavity barriers provided within stud wall partitions or around openings in the external wall may be formed of:
- steel at least 0.5 mm thick or timber at least 38 mm thick; or
 - polythene-sleeved mineral wool, or mineral wool slab under compression when installed cavity; or
 - calcium silicate, cement-based or gypsum-based boards at least 12 mm thick.

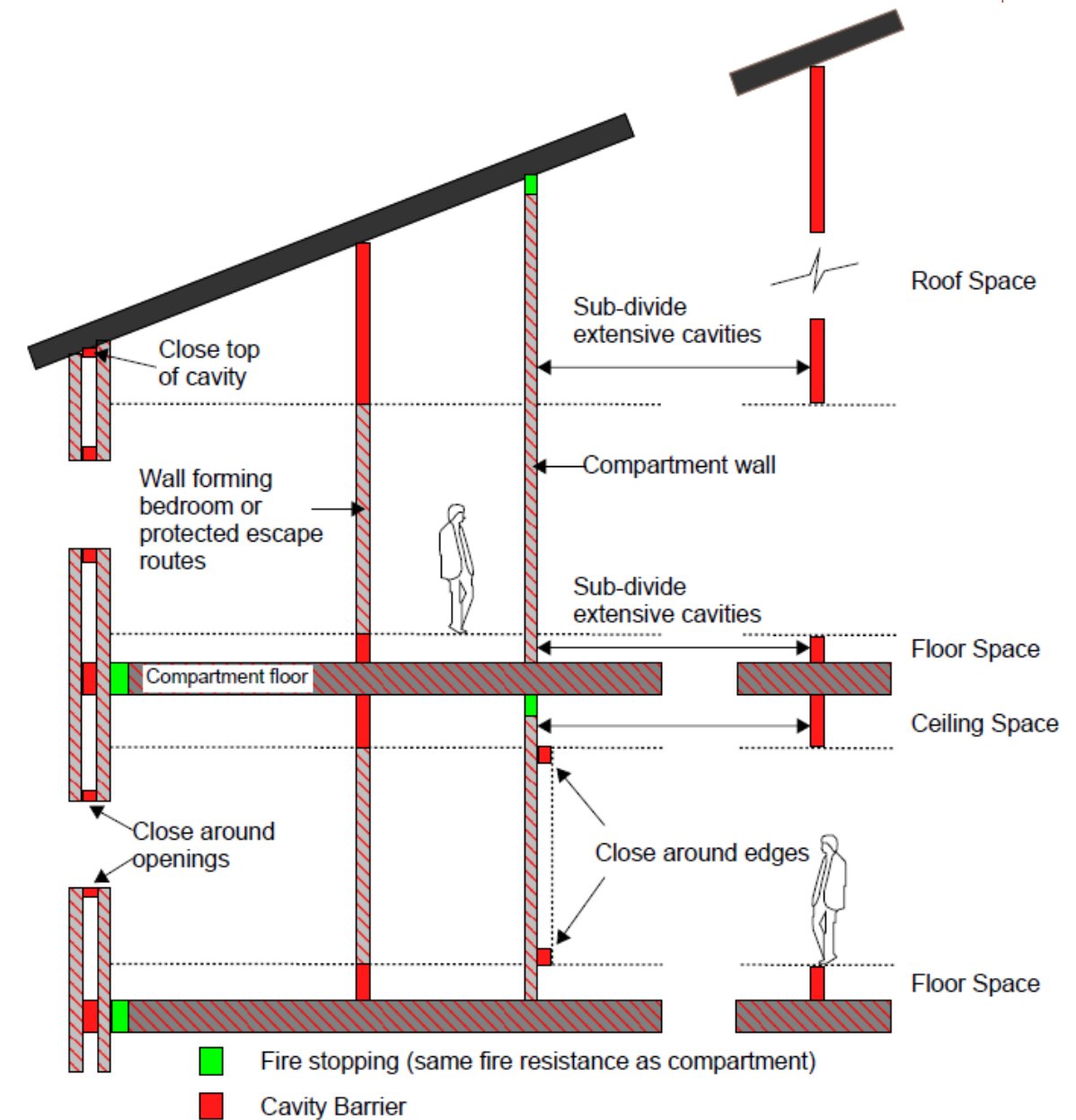


Figure 8 – Cavity barrier and fire-stopping locations

6. EXTERNAL FIRE SPREAD

Building Regulations requirement B4:

- "(1) The external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of the building.
- (2) 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."

6.1 External wall construction

- 6.1.1 In order to prevent the spread of flame across the surface of building at a speed which may pose a threat to life, materials forming the external cladding to buildings are meet the performance criteria given in BR 135 [31] or should meet the recommendations of the following Section 6.1.2 and have cavity barriers in accordance with Section 5.5.3.
- 6.1.2 The east façade of the building will be located within 1 m of the site boundary. As such, the external surfaces of the wall are to achieve a Class B-s3, d2 or better to BS EN 13501-1.
- 6.1.3 The remaining façades will each be for a building that is less than 11 m in height and greater than 1 m from the relevant boundaries, and no provisions are made in Table 12.1 of ADB for the exterior surfaces of the external walls.
- 6.1.4 For buildings less than 11 m in height, insulation or filler materials in the external wall are permitted to be combustible (except for Category 3 ACM systems, which should not be used), provided that the façade meets the remainder of the recommendations for the façade construction and materials.
- 6.1.5 The above recommendations are the minimum expectations of ADB for a building of this height. Nevertheless, it would be recommended that lower risk cladding and insulation materials (being Class A1 or Class A2-d1, s0 to BS EN 13501-1) be preferred in the first instance, considering the presence of sleeping occupants and a progressive horizontal evacuation strategy, which relies on the prevention of rapid fire spread between various areas of the building.

6.2 Roof coverings

- 6.2.1 Roof coverings are recommended to be resistant to fire spread where either close enough to a boundary to be at risk of ignition from a fire in other buildings or where needed to avoid fire spread between compartments via the roof covering. The relevant test and classification standards for the external fire performance of roof systems is BS EN 13501-5 [32] (European Class).
- 6.2.2 Roof coverings 1.5 m either side of compartment walls or within 6 m of a boundary should achieve an $B_{ROOF}(t_4)$ rating in accordance with Diagram 8.2 and Table 14.1 in ADB. With extensive compartmentation provided within the building, it is recommended that all roof covering meet this classification for consistency and robustness.
- 6.2.3 Roof coverings may constitute a number of materials (but does not include the roof structure as a whole). Therefore, the top covering material should be considered in tandem with the substrate(s) to assess the performance of the coverings. The covering system as a whole is required to meet the provisions of Section 6.2.1.
- 6.2.4 Where photovoltaic panels provided on the roofs, these should either meet the required classifications in Table 14.1 of ADB or should meet suitable equipment specific alternative guidance.

6.3 Space separation and unprotected areas of the façade

- 6.3.1 Should a fire occur in a building, heat will radiate through non-fire resisting openings in the external walls. This heat can be enough to set fire to nearby buildings. To reduce the chance of this occurring, the Building Regulations place limits on the area of the external elevation with no fire resistance, known as the unprotected area.
- 6.3.2 The building is to be designed and constructed with sufficient space separation and / or fire-resisting construction in the external façade to adequately limit the likelihood of fire spread to or from the adjacent relevant boundaries. The relevant boundaries are the reference distances at which the potential for fire spread is considered, being the site boundary or a notional boundary created at the centreline of an adjacent road, railway, or other area with a sufficiently low likelihood of development.
- 6.3.3 Compartment walls and floors are utilised to reduce to area of the façades likely to be radiating simultaneously. Following the recommendations of BR 187, the lower emitted radiation of 84 kW/m^2 (reduced to 42 kW/m^2 on account of sprinkler provision) may be used for the residential areas.
- 6.3.4 Considering the guidance of BR 187 [33] for exact calculation, an analysis of the available distance between the building and the boundaries has been conducted as indicated in Figure 9. The findings of this analysis for the various compartments are presented in Table 10. This table calculates the percentage of the façade permitted to be unprotected based on the available separation distances.
- 6.3.5 The east façade features external walls within 1 m of the site boundary, with fire-resisting construction in accordance Table 8 with is to be utilised in these areas. Where this façade features centrally located windows at Ground, 1st, and 2nd floors, there is a distance of 1.0 m from the boundary at this point. As such, this separation would facilitate single windows at each floor of up to $\sim 5 \text{ m}^2$ where supported by the remainder of the wall being fire-resisting and suppression within the building.

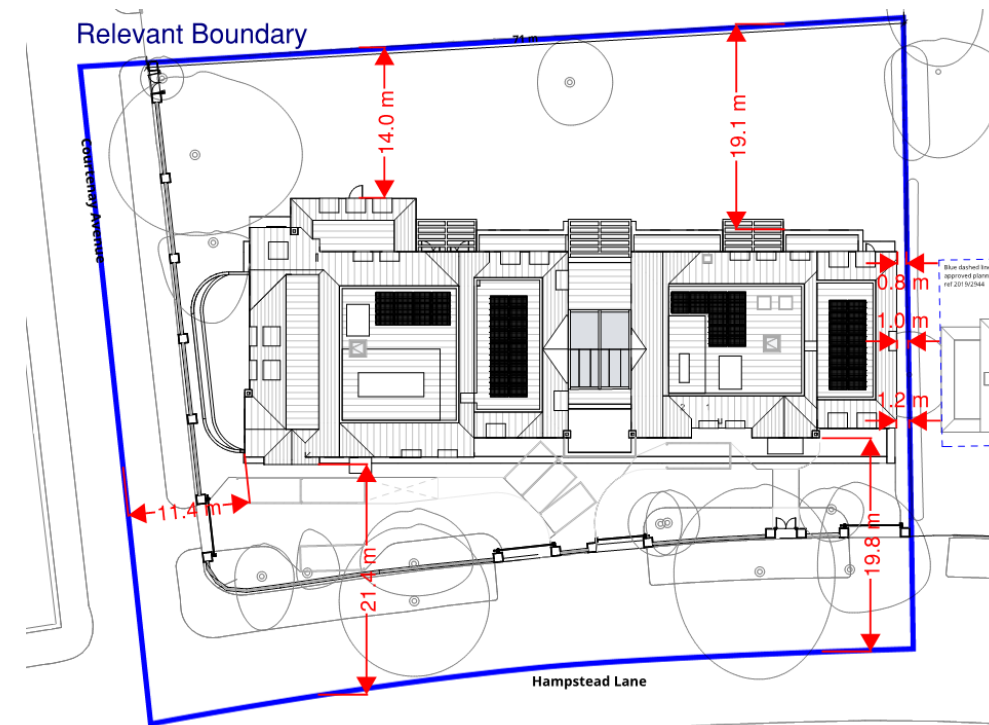


Figure 9 - Boundary separation distances

Table 10 – Summary of external fire spread assessment (for largest compartment)

Floor	Area	Enclosing rectangle (m)		Distance to boundary (m)	Permitted % of unprotected area
		W	H		
LGF	North façade	24	3.0	>10	100
	West façade	20		>10	100
GF	North façade	32		>10	100
	East façade	16		<1.0	0*
	South façade	26		>10	100
	West façade	22		>10	100
1F	North façade	24		>10	100
	East façade	16		<1.0	0*
	South façade	25		>10	100
	West façade	22		>10	100
2F	North façade	24		>10	100
	East façade	16		<1.0	0*
	South façade	25		>10	100
	West façade	17		>10	100
* See Section 6.3.5 regarding inclusion of single windows at GF, 1 st , and 2 nd floors.					

7. ACCESS AND FACILITIES FOR THE FIRE AND RESCUE SERVICE

Building Regulations requirement B5:

- "(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 provision shall be made within the site of the building to enable fire appliances to gain access to the building."

7.1 Means of notifying the fire and rescue service

- 7.1.1 In the event of fire, the fire and rescue service (FRS) will be notified by a resident or member of building staff. The fire and rescue service will be met by a member of staff when they arrive on site.

7.2 Water supplies

- 7.2.1 Hydrants will be required in the vicinity of the building to support firefighting operations, with ADB recommending that hydrants should be available within 90 m of any dry riser inlets.
- 7.2.2 The location of the nearest existing hydrant is as indicated in Figure 10, being within 90 m of each dry riser inlet location. The operational condition of the hydrant should be reviewed during construction to ensure that this is in good working order and may support firefighting activities at the site.

7.3 Vehicle access to and around the site

- 7.3.1 The access routes for the fire appliances will meet values recommended in London Fire Brigade Guidance Note GN29 [34] by virtue of this being via the existing public highways (Hampstead Lane) to the front of the building as indicated in Figure 10.
- 7.3.2 The rear and sides of the site will not be accessible to fire service vehicles, and as such, dry rising mains will be provided in accordance with BS 9990 [35] in lieu of fire appliance access to the building façade. A fire appliance hardstanding is available within 18 m of each dry riser inlet.

7.4 Access into and through the building

- 7.4.1 As the building does not feature an occupied floor at greater than 18 m above ground level, firefighting shafts are not required. Access to the protected stairs will be available for firefighters either directly from outside, or through the secondary entrance to the building as indicated in Figure 10.
- 7.4.2 Dry risers are to be provided within each of the two protected stairs serving all levels, with all areas being within a 45 m hose laying distance of these stairs to meet the expectations of Section 16.3 in ADB without requiring the additional provision of firefighting shafts (which would allow a 60 m hose laying distance where supported by sprinklers).
- 7.4.3 Each of the protected stairs will be provided with dry riser landing valves at each level of the stairs, including ground floor. It is recommended that landing valves are provided within a protective box in accordance with BS 5041-4 [36], to avoid damage or tampering.
- 7.4.4 Where measured along a route suitable for laying hose, a maximum hose laying distance of circa 30 m will be present from the dry riser outlet, as indicated on the marked-up drawings in Appendix A.

7.5 Venting of smoke and heat from the basement

- 7.5.1 The Lower Ground floor has access to open air on two sides, where being within a sloping side, as well as to an internal light well. As such, this storey is considered to have sufficient venting via the façade to not require additional means of basement ventilation to support firefighting.
- 7.5.2 The basement level is split into two areas – the basement ancillary accommodation and the basement car park. Two separate basement venting systems will be required to support firefighting at this storey.
- 7.5.3 The ancillary areas will be provided with mechanical basement smoke extraction in accordance with Section 18.12 of ADB and BS EN 12101-3 [37], and as follows:
- Automatic suppression is provided in the basement ancillary areas (see Section 5.1).
 - The mechanical extraction will provide a minimum of 10 air changes per hour.
 - The extract system will be capable of handling gasses of 300 °C for 1 hour.
 - The extraction system is to automatically activate upon suppression activation in the basement.
- 7.5.4 As the basement car park is to be enclosed and accessed via a car lift only. As such, the car park will require a means of venting heat and smoke. A mechanical ventilation system for smoke and heat is to be provided in accordance with Section 11.5 in ADB and following the additional guidance of BS 7346-7 [38]. Automatic suppression is not required to support car park mechanical smoke extractions system, as noted in Section 18.11 of ADB.
- 7.5.5 Car parks also require a means of ventilation for exhaust gasses. This may be provided by the same system as the heat and smoke ventilation, where suitable ductwork and fans are provided for the fire condition and separate settings are provided for background ventilation and during a fire. During a fire, the mechanical smoke extraction system should be capable of achieving a minimum of 10 air changes per hour.

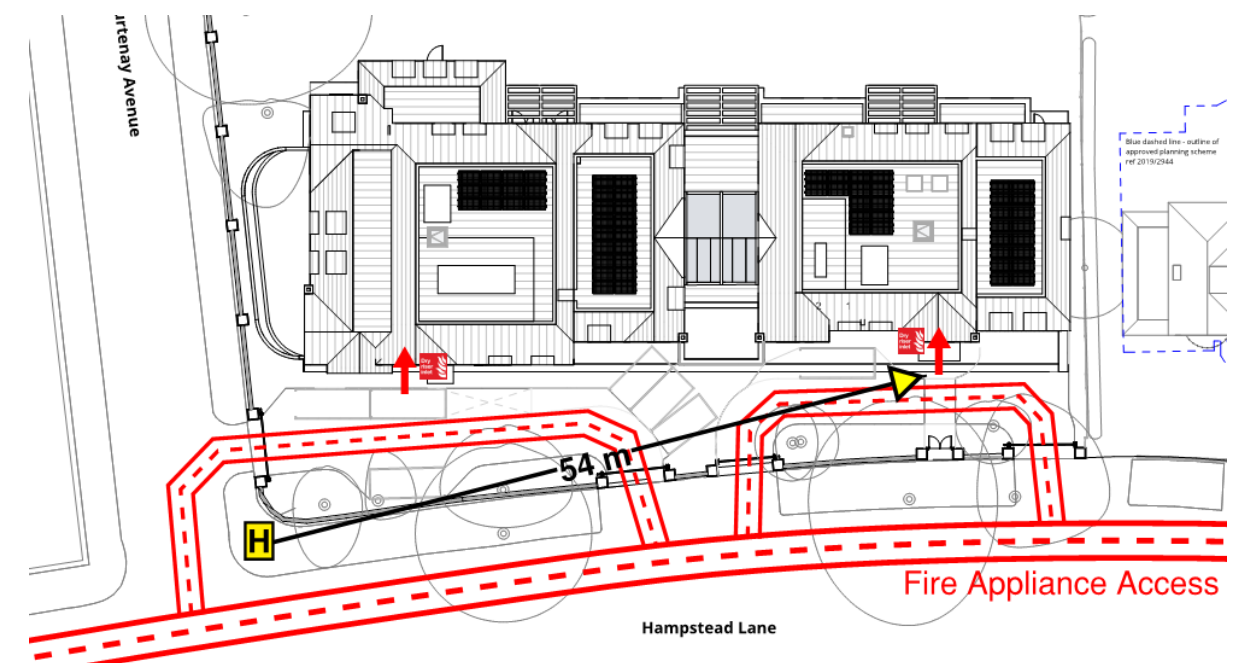


Figure 10 – Fire service access to and into the building

7.6 Stand-by power supplies

- 7.6.1 All powered life safety systems will have emergency back-up power in accordance with BS 8519 [39].
- 7.6.2 The emergency lighting, internally illuminated signage, and fire detection and alarm systems are expected to utilise batteries capable of a continuous stand-by supply in accordance with the relevant design standard and be fully rechargeable within a period of 24 hours.
- 7.6.3 The evacuation lifts, sprinkler system, and basement smoke extraction systems are to be provided with emergency back-up power. This is currently expected to be via a stand-by diesel generator in accordance with Figure 1 in BS 8519, located externally at Lower-Ground Floor.

7.7 First-aid firefighting

- 7.7.1 First-aid firefighting provisions should be assessed and provided as part of the fire risk assessment for the building, including consideration for the day-to-day management of these provisions. Suitable first-aid firefighting provisions can help with the extinguishment of small fires, preventing these from growing into significant fires.
- 7.7.2 In general, fire points should be provided within general areas of the building and within specific areas presenting a significant fire ignition risk, such as the plant or kitchen areas. The fire risk assessment that should be undertaken upon occupation of the building (see Section 8) may assist with the placement of suitable fire extinguishers.
- 7.7.3 The type and size of extinguisher(s) at each fire point will be chosen in accordance with the guidance given in BS 5306 [40], as summarised by Table 11 and the classification of fire fuel hazards summarised as follows:
 - Class A – fires involving solid materials, usually of an organic nature (general hazards).
 - Class B – fires involving liquid or liquefiable solids (such as liquid fuels, lubricants, paints, etc.).
 - Class C – fires involving gases.
 - Class D – fire involving metals.
 - Class F – fires involving cooking media (vegetable or animal oils or fats).
- 7.7.4 For general areas, each floor should have a fire extinguisher at a rate of approximately 1x fire point for every 200 m² of floor area. These would generally be recommended to be located adjacent to storey exits and such that all areas are within 30 m of the nearest fire point. Fire points are suggested to consist of either a 9L water and 2L CO₂ extinguisher, or a single 6L AFFF Foam extinguisher where covered electrical devices which would not exceed the 35 kV (dielectric test) limitation.
- 7.7.5 The plant, electrical, car park, and kitchen areas should be provided with extinguishers suitable for the hazards expected to be present. In general, it would be expected that CO₂ extinguishers would be provided for higher voltage electrical risks, and foam extinguishers provided in the car park where there is the potential for fuel spills. Wet chemical extinguishers suitable for oil-based fires may be required in the kitchen area if deep fat frying equipment is to be present.
- 7.7.6 Powder extinguishers should not be used within confined spaces, where breathing in of the powder is harmful to the health of lungs.

Table 11 – Fire extinguisher types and application guidance

Medium	Colour code	Application	Do NOT use for
Water	Red	Class A fires	Liquid, electrical, metal or cooking fires
Powder	Blue	Class A, B or C fires	Metal or cooking fires
Foam	Cream	Class A or B fires	Electrical*, metal or cooking fires
CO ₂	Black	Class B fires	Metal or cooking fires
Wet chemical	Yellow	Class A or F fires	Liquid, electrical or metal fires
* AFFF Foam extinguishers may be used for electrical fires up to 35 kV (dielectric test) and where operated from a distance of at least 1 m.			

8. FIRE SAFETY MANAGEMENT

8.1 Overview

- 8.1.1 Management procedures have a pivotal role to play in fire prevention, control and evacuation of occupants should a fire incident occur. This management is supported by the building fire safety design and handover of fire safety information as required under Regulation 38 of the Building Regulations. Following this, the Regulatory Reform (Fire Safety) Order 2005 (FSO) places legal obligations on the person or entity in control of the management and maintenance of a building.
- 8.1.2 This section is intended to introduce the FSO, its obligations and provide initial guidance in fulfilling these duties. It is the responsibility of the landlords / building management to ensure that all fire safety systems are tested and maintained to ensure their continuous effectiveness. Building management need to be aware of all fire safety features provided and their purpose.
- 8.1.3 It is important that management are aware of their responsibilities detailed in this document and agree that they are sufficiently capable of adequately performing them. Effective arrangements should be put in place to manage all aspects of fire safety in the premises and the details of those arrangements need to be recorded, e.g., within a fire safety management plan.
- 8.1.4 In accordance with BS 9999, there are two management system levels. One of management levels should be implemented, as summarised in Table 12.

Table 12 - Management levels

Level	Management	Robustness	Minimum assurance	Conformity
1	Enhanced	Best Practice	High level of assurance	Conformity with a management level such as BS 9997 [41]
2	Adequate	Good Practice	Adequate level of assurance	Conformity with requirements of legislation

8.2 Regulatory Reform (Fire Safety) Order 2005

- 8.2.1 The Fire Safety Order came into effect in October 2006 and replaced over 70 pieces of fire safety law. The Order applies to all non-domestic premises in England and Wales, including the common parts of blocks of flats or houses in multiple occupation. The Order removed the legal status of fire certificates, which are no longer enforceable by the Fire Authorities. The 'responsible person' has a duty to make the premises safe and must undertake regular fire risk assessments. It is the responsible person who will be held accountable under the new legislation for any breaches in fire safety. It is expected that the building is managed and maintained to a standard in accordance with the expectations of the FSO.
- 8.2.2 In workplaces, the responsible person is the employer. In other cases, the owner or person in control of the premises is the responsible person, e.g., building management company, building operator.
- 8.2.3 Under the Order, the 'responsible person' must carry out a fire safety risk assessment and implement and maintain a fire management plan. The assessment should be kept under regular review and reassessed if the use of the building has been varied or a material alteration has been made. The significant findings must then be recorded, along with the measures taken to address the risks identified. A competent person should carry out the fire risk assessment.

8.3 Management responsibilities in support of the fire strategy

- 8.3.1 Management of fire safety must be integrated with all other management systems. If this management is lacking, then there is a danger that all the other areas such as security measures and alarm systems will be ineffective. To ensure there is no doubt as to where the responsibility for fire safety rests, and to enable consistency of approach, it is important that each establishment appoints a designated Fire Safety Manager. It may be possible to appoint a professional to take on this role but that will depend on the size of the premises, costs, etc.
- 8.3.2 The appointed person should have the necessary authority and powers of sanction to ensure that standards of fire safety are maintained. The main duties of the Fire Safety Manager include:
- management to minimise the incidence of fire (e.g., good housekeeping and security).
 - producing an Emergency Fire Plan.
 - being aware of all the fire safety features provided and their purpose.
 - being aware of any unusual fire risks at the premises (e.g., issues relating to hot work).
 - being aware of their responsibilities towards disabled people.
 - attendance at the premises when members of the public are present, or the building is occupied. It is acceptable for a competent person other than the fire safety manager to be in attendance, provided that this person has been delegated in writing and that cover is not interrupted.
 - liaising with, and where necessary seek the advice of, the fire authority, the licensing authority, and other relevant enforcing authorities.
 - having powers to deal with individuals who sabotage or tamper with safety systems, who ignore any smoking policy or who block exits.
 - liaising with other fire safety managers in a multi-occupancy arrangement.
 - ensuring that tenants, concessionaires, and caretakers are appropriately briefed.
 - ensuring that appropriate communication systems are in place to deal with any fire incident.
 - checking the adequacy of firefighting equipment and ensuring its regular maintenance.
 - ensuring fire escape routes and fire exits are unobstructed and doors operate correctly.
 - ensuring that fire detection and protection systems are maintained, tested, with records kept.
 - ensuring any close-down procedures are followed.
- 8.3.3 Good housekeeping ensures that the effectiveness of the fire safety provisions is not impaired, including the adequate provision for the disposal of waste and / or rubbish.
- 8.3.4 Maintenance procedures are to be enacted so that equipment will operate effectively. Maintenance staff are to be trained in the importance of the fire safety systems and planned maintenance.
- 8.3.5 Though evacuation is expected to remain within the building initially, suitable assembly points outside the building should be identified which are remote from the access routes used by the FRS. These would be used in the event that the FRS and staff determine that the building must be evacuated fully.
- 8.3.6 Internal escape routes should generally have wall and ceiling linings achieving a Class B-s3, d2 Reaction to Fire classification, apart from permitted exceptions noted in this report. These finishes must be maintained for the life of the building. Display features or items such as posters, artwork pieces, etc. may be included with appropriate consideration, justification, and on-going control.

9. EXTERNAL REFERENCES

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APPENDIX A – FIRE STRATEGY MARK-UPS

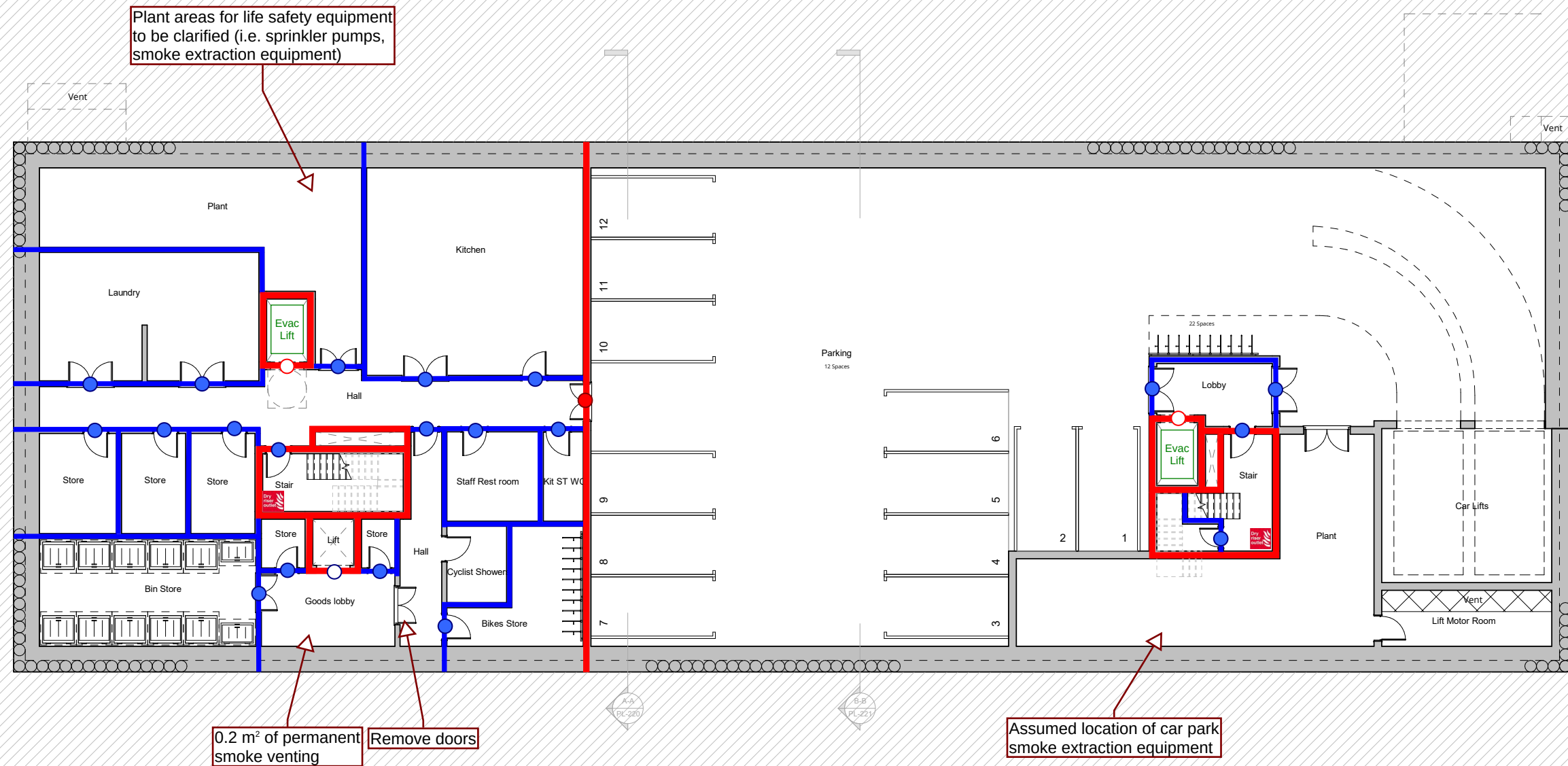
Notes:



1 0 1 2 3 4 5
SCALE 1:100 m

Key

- Existing Property outline
- 1.5m Cut line
- 1.8m Cut line
- Boundary line
- Root Protection Zone
- Existing Trees
- Trees to be removed



D	Internal and external amendments	08/07/22
C	Wings Reduced	22/04/22
B	Planning Amendments	26/10/21
A	Planning Updates	03/09/21
0	Planning Issue	06/08/21
Rev	Description	Date



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status:

PLANNING

project:
44-46 Hampstead Lane
London

drawing title:
Proposed Basement

date:
29/06/21
scale:
As indicated

dwg no:
1627-PL-200
rev no:
D



Project: Hampstead Lane Care Home
Reference: AF2389
Title: Fire Safety Mark-ups
Revision: V2.0
Updated by: Andy Ballantyne
Checked by: Felipe Herrera
Scale: As shown
Date: 14.07.22
Date: 18.07.22

Fire Safety Mark-up Legend

- 120 minutes fire resistance
- 60 minutes fire resistance
- 30 minutes fire resistance
- FD120S Fire door
- FD60S Fire door
- FD30S Fire door
- FD120 Fire door
- FD60 Fire door
- FD30 Fire door

Notes

This drawing should be read in conjunction with the building fire safety report and supporting detailed information.
The fire resistance illustrated on this drawing are for separating or enclosing areas of the building. The performance of the loadbearing structure, external walls and floors should be in accordance with the building fire safety report.
Unless otherwise shown, fire resistance provisions and method of exposure should be in accordance with the fire strategy and associated references.
Unless otherwise shown, fire doors should be in accordance with the fire strategy and associated references

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Notes:



1 0 1 2 3 4 5
SCALE 1:100 m

Key

- Existing Property outline
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- 1.8m Cut line
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- Existing Trees
- Trees to be removed

Suitable walking surface away from building required

Suitable walking surface away from building required

Provide lobby between plant room and escape routes. Access via corridor rather than directly from common stair

Recommend store is accessed from this side

Review stair. Separation between basement and above ground recommended at this level.

D	Internal and external amendments	08/07/22
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O	Planning Issue	06/08/21
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status:

PLANNING

project:
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London

drawing title:
Proposed Lower
Ground Floor

date:
29/06/21

scale:
As
indicated

dwg no:
1627-PL-201

rev no:
D

Proposed Lower Ground Floor
1:100



Project: Hampstead Lane Care Home
Reference: AF2389
Title: Fire Safety Mark-ups
Revision: V2.0
Updated by: Andy Ballantyne
Checked by: Felipe Herrera
Scale: As shown
Date: 14.07.22
Date: 18.07.22

Fire Safety Mark-up Legend

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1 0 1 2 3 4 5
SCALE 1:100 m

Key

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- 1.8m Cut line
- Boundary line
- Root Protection Zone
- Existing Trees
- Trees to be removed

D	Internal and external amendments	08/07/22
C	Wings Reduced	22/04/22
B	Planning Amendments	26/10/21
A	Planning Updates	03/09/21
0	Planning Issue	06/08/21
Rev	Description	Date



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status:

PLANNING

project:
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London

drawing title:
Proposed Ground
Floor

date:
29/06/21

scale:
As
indicated

dwg no:
1627-PL-202

rev no:
D

Proposed Ground Floor
1:100



Project: Hampstead Lane Care Home
Reference: AF2389
Title: Fire Safety Mark-ups
Revision: V2.0
Updated by: Andy Ballantyne
Checked by: Felipe Herrera
Scale: As shown
Date: 14.07.22
Date: 18.07.22

Fire Safety Mark-up Legend

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1 0 1 2 3 4 5
SCALE 1:100 m

Key

- Existing Property outline
- 1.5m Cut line
- 1.8m Cut line
- Boundary line
- Root Protection Zone
- Existing Trees
- Trees to be removed

D	Internal and external amendments	08/07/22
C	Wings Reduced	22/04/22
B	Planning Amendments	26/10/21
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status:

PLANNING

project:
44-46 Hampstead Lane
London

drawing title:
Proposed First Floor

date:
29/06/21
scale:
As indicated
dwg no:
1627-PL-203
rev no:
D

Proposed First Floor
1:100



Project: Hampstead Lane Care Home
Reference: AF2389
Title: Fire Safety Mark-ups
Revision: V2.0
Updated by: Andy Ballantyne
Checked by: Felipe Herrera
Scale: As shown
Date: 14.07.22
Date: 18.07.22

Fire Safety Mark-up Legend

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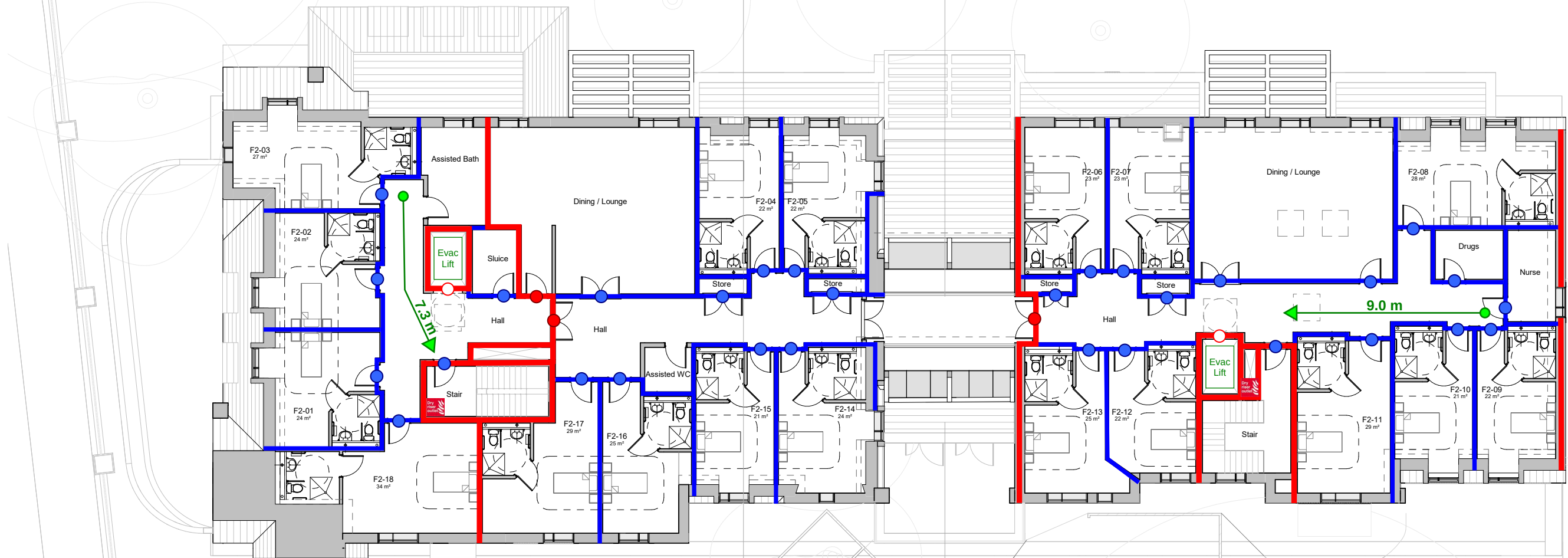


1 0 1 2 3 4 5
SCALE 1:100 m

Key

- Existing Property outline
- 1.5m Cut line
- 1.8m Cut line
- Boundary line
- Root Protection Zone
- Existing Trees
- Trees to be removed

Proposed Second Floor
1:100



D	Internal and external amendments	08/07/22
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PLANNING

project: 44-46 Hampstead Lane
London

drawing title: Proposed Second Floor

date: 29/06/21 scale: As indicated

dwg no: 1627-PL-204 rev no: D



Project: Hampstead Lane Care Home
Reference: AF2389
Title: Fire Safety Mark-ups
Revision: V2.0 Scale: As shown
Updated by: Andy Ballantyne Date: 14.07.22
Checked by: Felipe Herrera Date: 18.07.22

Fire Safety Mark-up Legend

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BAFE Fire Safety Register
Fire Risk Assessment Provider



Institution of Fire Engineers Member



Fire Industry Association Member



Constructionline
Gold Member

Constructionline Gold Member

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Ireland

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