

Planning Fire Safety Statement for Harefield Grove, Middlesex UB9 6JY

Introduction

Context

The proposed development comprises the restoration of an existing mansion house and its sub-division into 6 No. flats. An existing office block and stable block are to be demolished and replaced with a new courtyard stable block comprising a mixture of one, two and three-bedroom flats across 3 No. floors creating a total of 29 No. residential units. In all, 35 No. residential units will be provided with 78 No. open car spaces. landscaping and associated site works. 4 no. stand-alone dwellings are to be retained on the site. The development is summarised in Figure 1.

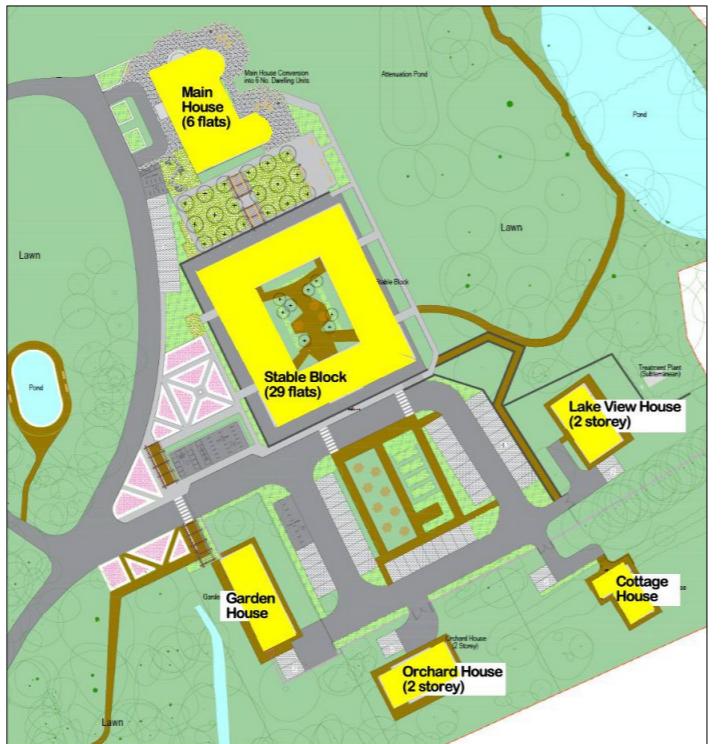


Figure 1. Overview of Site

The relevant building heights are summarised in fire safety terms, i.e. measured from lowermost external ground level to the topmost floor level, as outlined in Table 1.

Block	Storeys	Height	Parameter
Main Building	3 no.	6.0 metres	< 11 metres
Stable Block	3 no.	6.0 metres	< 11 metres

Table 1. Building Heights

The development comprises in excess of 10 no. residential units and therefore is a **Major Development**, under Annex 6 of the London Plan 2021. Accordingly, this Planning Fire Safety Strategy Statement (PFSS) is structured to address policies in that order prescribed in Policy D12B, i.e. D12B(1) to D12B(6).

Design Objectives

The primary fire safety objectives are those contained outlined in the Greater London Authority's London Plan 2021 including:-

- **Policy D12A – Fire Safety**
- **Policy D12B – Fire Safety (Major Developments)**
- **Policy D5(B5) – Evacuation Lifts**

The proposed development has been evaluated in terms of its capacity to deliver these stated policy objectives, specifically:-

- 1) Fire safety performance in respect of the building's inherent construction and the fitness for purpose of the materials used therein to limit fire spread.
- 2) Adequate, dignified and universal means of escape in case of fire for all potential building users.
- 3) Measures to ameliorate fire safety risks.
- 4) Appropriate facilities (active and passive) for London Fire Brigade to assist them in their protection of life.
- 5) Access to the building for London Fire Brigade vehicles.
- 6) Robustness of fire precautions in respect of future modifications.

Competence

This Fire Statement has been prepared by Dr. Raymond Connolly of Fire & Risk Solutions Ltd. who is a suitably qualified and experienced Chartered Engineer and Member of the Institution of Fire Engineers and affirms that he meets the competency standards contained in Clause 3.12.9 of Policy D12.

Design Development

Building Regulations 2010 (as amended in 2018)

During detailed design, these London Plan policy objectives will be further supplemented by the minimum requirements of the. Part B of the Second Schedule to the Building Regulations sets out the following additional statutory requirements:-

- To ensure the life safety in case of fire of all building, i.e. to permit all building occupants to safely
- To inhibit the spread of fire via the internal wall/ceiling linings.
- To design and construct the building such that it will retain its stability for a reasonable period during a fire.
- To appropriately sub-divide the building to restrict the internal spread of fire.
- To inhibit the unseen spread of smoke and fire within concealed spaces.
- To prevent the spread of fire from the building beyond the site boundaries to adjacent buildings.
- To enable access to the building to assist fire-fighting.

These statutory objectives shall be met to the extent determined by the Building Control Body (identity to be confirmed) in consultation with London Fire Brigade as being sufficient to achieve compliance with the specific requirements of Part B to the Building Regulations 2010 (as amended 2018).

The buildings are served by a number of full height protected escape stairways. In fire safety terms, the proposed development is allocated Building Regulations Purpose Groups as outlined in Table 2.

Block	Use	Purpose Group *
Main Building	Flats	1(a) – Residential (Flats)
Stable Block		

*Table 0.1 of HM Government Approved Document B Vol. 1
Table 2. Building Regulations Purpose Group

Generally, flats within the upper-level residential parts of the buildings are served by one escape route and single direction exit. The relevant building heights do not exceed the 18 metres threshold making provision of a fire-fighting stair, fire-fighting lift or dry mains systems necessary. The common escape routes include ventilated communal lobbies and protected ventilated escape stairways.

Planning Fire Safety Statement for Harefield Grove, Middlesex UB9 6JY



Given that the buildings do not exceed 11 metres in height nor do they comprise open plan flat layouts, buildings do not require provision of automatic sprinkler protection.

The evacuation strategy for the buildings shall be individual to flats with escape to protected vented escape stairways discharging at ground or garden level and leading away from the buildings to suitable open air assembly points.

The buildings are to be fitted with evacuation lifts complying with the principles contained in to pr EN 81-76:2019.

Supporting schedule of relevant plan drawings

This PFSS has been prepared following our appraisal of the drawings in Table 3.

Number	Drawing Title
0050	Existing Site Plan
0051	Existing Ground Floor Plan
0052	Existing First Floor plan
0053	Existing Second Floor Plan
0054	Existing Roof
0055	
0056	Existing Elevations 1
0057	Existing Elevations 2
0058	Existing Section
0059	Existing Elevation
0060	Proposed Site Plan
0061	Combined Site Plan
0062	Proposed Ground Floor Plan
0063	Proposed First Floor Plan
0064	Proposed Second Floor Plan
0065	Proposed Roof Plan
0066	Proposed Elevations 1
0067	Proposed Elevations 2
0068	Proposed Site Section
0069	Site Layout Plan
0070	Proposed Garden Level Plan
0071	Proposed Ground Floor Plan
0072	Proposed First Floor Plan
0073	Proposed Second Floor Plan
0074	Proposed Roof Plan

Table 3. Comer Homes Group Architectural Drawings

Relevant Fire Safety Design Code

This PFSS outlines a means for delivering future compliance with Part B to the Building (Amendment) Regulations 2018, as will be further developed during the detailed design process within the formal statutory regime under the jurisdiction of the appointed Building Control Body and London Fire Brigade. This approach shall include adoption of the guidance contained in:-

- **BS 9991, Fire safety in the design, management and use of residential buildings - Code of practice (2015).**

Explanatory Sketches

Indicative floor layouts and associated fire precautions are shown herein in Figures 2 to 7 with symbols as per the key outlined in Table 4.

Symbol	Meaning
Green shading	Evacuation stair/lift
Red Line	60 minutes fire-resisting construction
Blue Line	30 minutes fire-resisting construction
Green arrow	Exit
DR	Disabled Refuge
Red arrow	Dry Main Outlet/Inlet
Blue arrow/square	Smoke Ventilator

Table 4. Fire Safety Drawing Key

London Policy Objectives D12B(1) and D12A(3) Building Regulations B2, B3, B4 & Regulation 7 Building Construction

Materials and Workmanship (Regulation 7)

The proposed buildings comprise masonry brickwork external walls. Specific construction products and manufacturer's verification of performance shall be proposed in due course by the Design Team to comply with the statutory obligations and to deliver on the principles contained in this Planning Statement, i.e. specification of appropriate materials and standards of workmanship.

Materials Information Register (Regulation B2)

Notwithstanding that the buildings are not yet procured, it is proposed to restrict future construction materials by means of performance classification to BS EN 13501-1 as follows:-

- Roofs to minimum **Class B_{ROOF(t4)}**. Green roofs shall comply with Department for Communities and Local Government Guide "Fire performance of green roofs and walls" (2013).
- Internal walls and ceilings to escape routes to **Class B_{s3,d2}**
- Other internal walls/ceilings generally to minimum **Class C_{s3,d2}**, with the exception of small rooms (having areas <4m²), which may be relaxed to **Class D_{s3,d2}**.
- Floor coverings in common areas (low radius of effects of ignition proven to BS 4790 and BS 5287).
- All electrical wiring shall meet current IET National Wiring Regulations (BS 7671).

The proposed buildings are not "relevant buildings" as defined in Building Regulation 7(4) and accordingly their external wall assemblies do not attract any special provisions in terms of their combustibility.

Protection against undue fire spread via structure (Regulation B3)

The materials of construction within the proposed buildings generally comprise masonry inner and outer leaf, gypsum plaster, mineral fibre insulation materials and glazed components. The external facades consist of traditional brickwork.

The buildings shall be designed to retain their stability in the event of a fire for a reasonable period. This shall be ensured during detailed design through:-

- Provision of elements of structure (beams, columns and floor slabs) having minimum fire resistance ratings of **60 minutes**.
- Provision of imperforate **60 minutes** fire-resisting compartment floors between individual levels.
- Provision of imperforate **60 minutes** fire-resisting separating walls between individual flats.
- Enclosure of the escape stairways and evacuation lift with **60 minutes** fire-resisting construction and **FD30S** doors.
- Enclosure of all service risers with **60 minutes** fire-resisting construction, accessed via FD30S doors.

It is noted that external walls may be unrated in respect of fire resistance due to their distance from the relevant boundaries.

Planning Fire Safety Statement for Harefield Grove, Middlesex UB9 6JY



Figure 2. Main Block Ground Floor Plan



Figure 3. Main Block First Floor Plan

Planning Fire Safety Statement for Harefield Grove, Middlesex UB9 6JY



Figure 4. Main Block Second Floor Plan

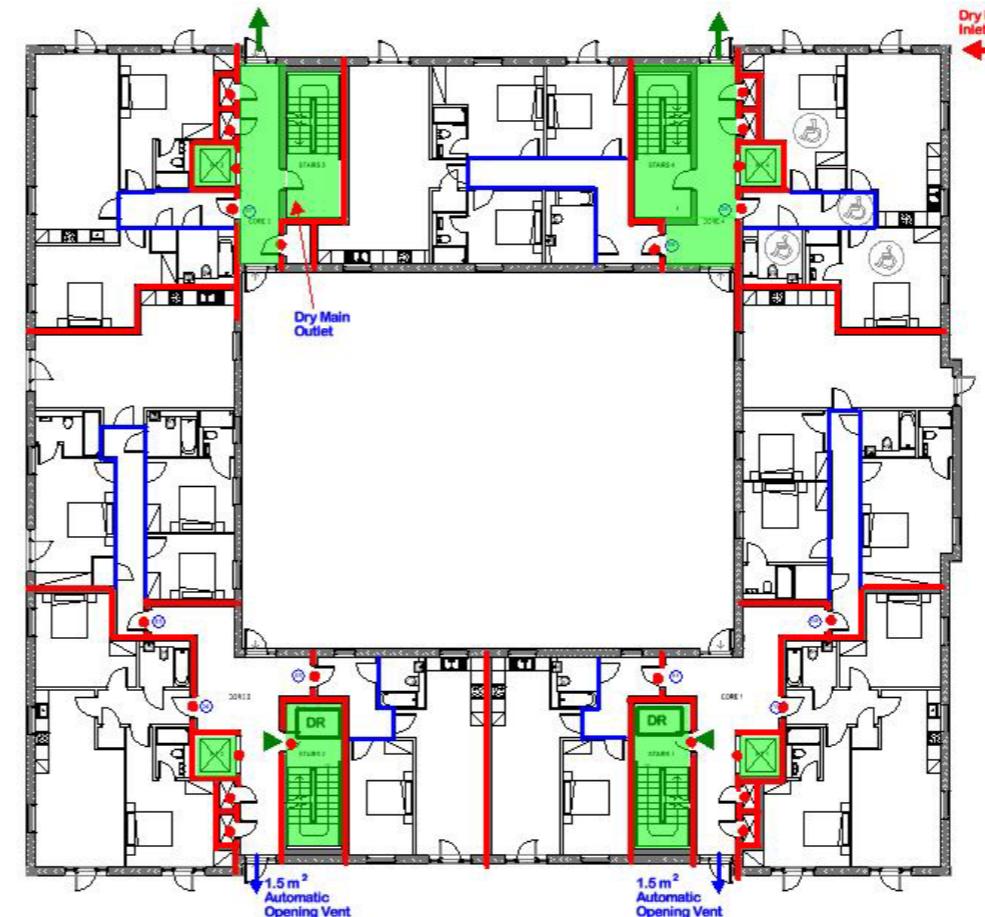


Figure 5. Stable Block Garden Floor Plan

Planning Fire Safety Statement for Harefield Grove, Middlesex UB9 6JY

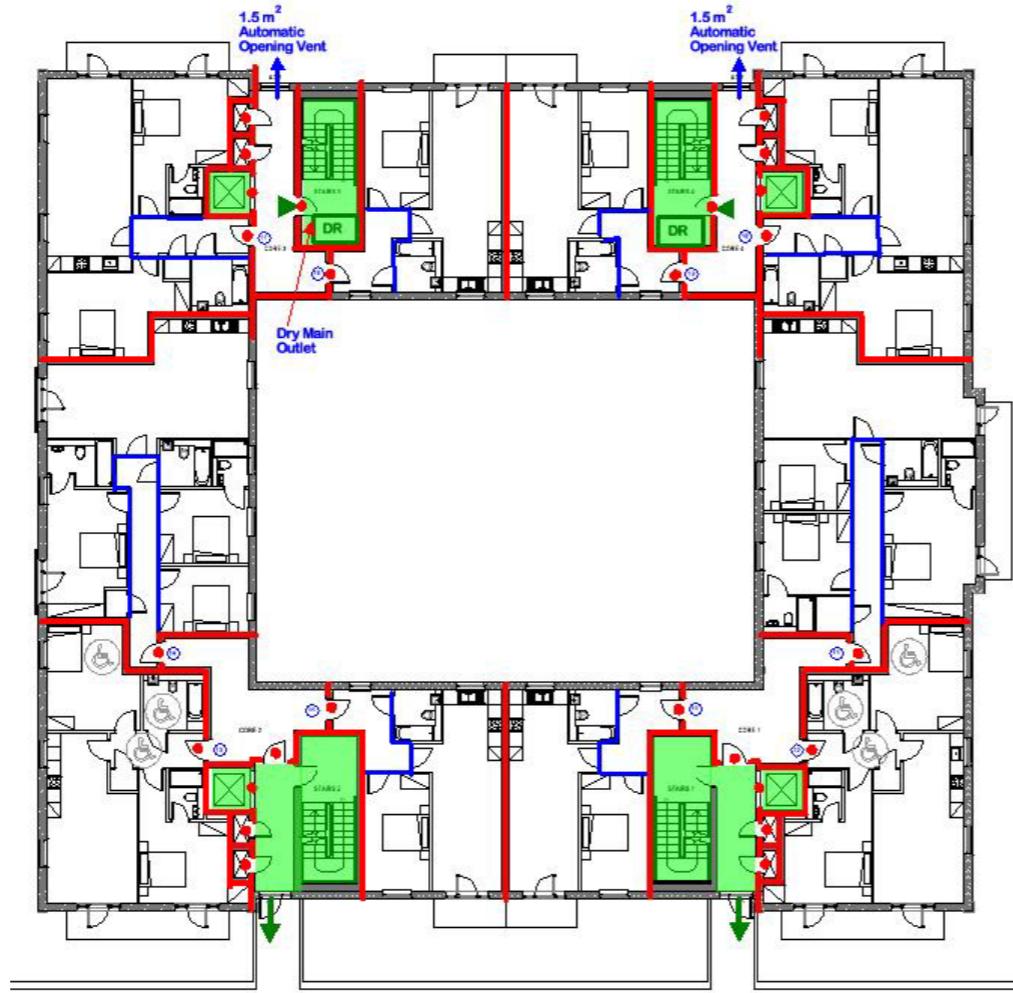


Figure 6. Stable Block Ground Floor Plan

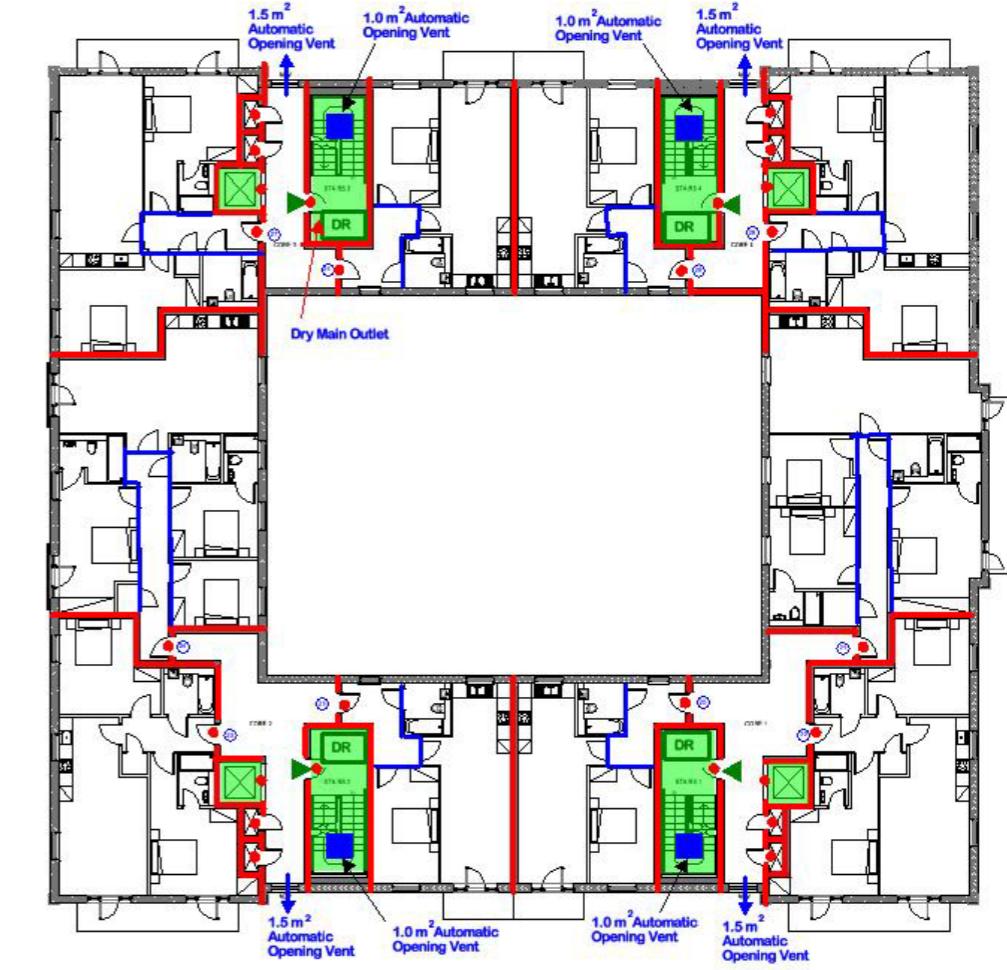


Figure 7. Stable Block Second Floor Plan

Planning Fire Safety Statement for Harefield Grove, Middlesex UB9 6JY

Protection against undue external fire spread (Regulation B4)

The site external boundaries are identified in Figure 8. The internal boundary between both blocks is shown in Figure 9. An initial assessment has been undertaken of all buildings' elevations in the context of their spatial separation requirements. It has been confirmed that the external walls do not require fire-resisting construction or any restriction in their use of unprotected glazing other than where elevations form an internal corner (in which case fire-resisting construction is required to form a separating zone of not less than 1,800 mm).

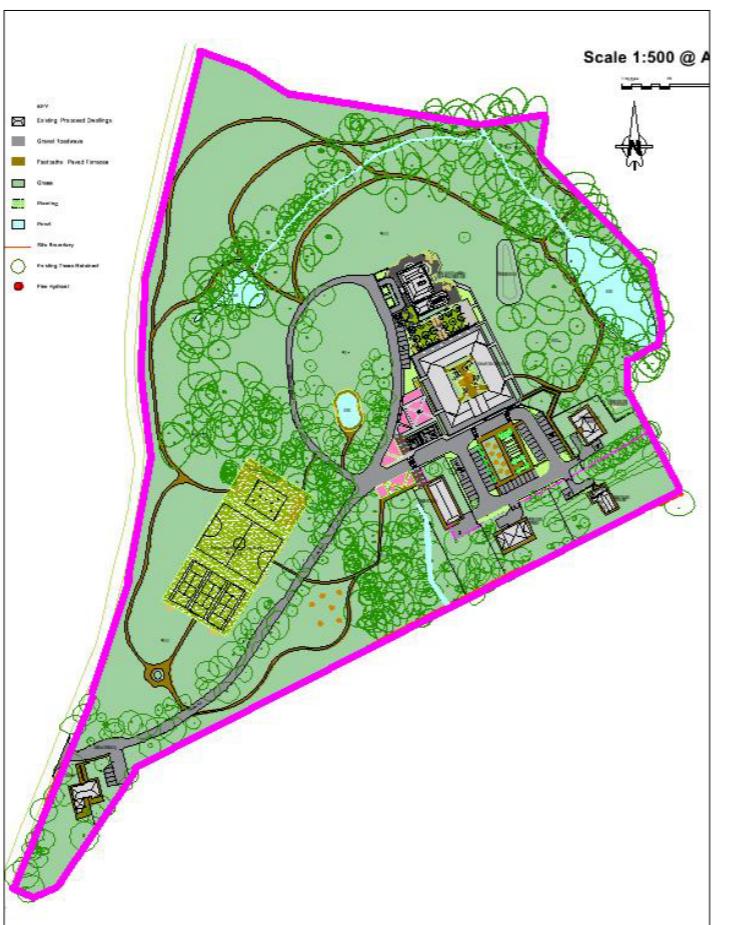


Figure 8. Site Boundaries (Magenta)

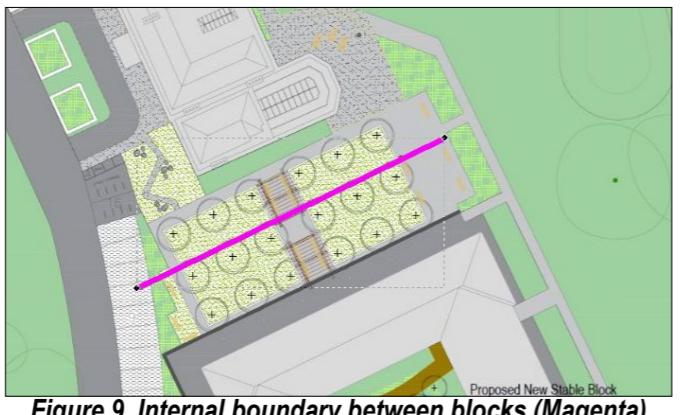


Figure 9. Internal boundary between blocks (Magenta)

London Policy Objectives D12B(2), D12A(4) & D5(B5)

Building Regulation B1

Means of Escape for all building users

Design Philosophy

The proposed buildings have been appraised in terms of the means of escape infra-structure for all residential occupants (including persons of impaired mobility). The fire safety design shall deliver compliance with Part B of the Building Regulations by full adoption of all relevant guidance contained in BS 9991, *Fire safety in the design, management and use of residential buildings - Code of practice*, 2015.

The common escape routes shall be fitted with automatic natural smoke ventilation systems with suitable natural make-up air provisions, including provision of 1.0 m² automatic opening vents above the protected stairways. All escape routes shall be protected from smoke and heat ingress by their enclosure in fire-resisting and smoke-containing construction.

Escape routes shall be universally accessible with level access. At every level, the protected escape lobbies associated with the evacuation lifts shall include disabled refuges (900 mm x 1400 mm) fitted with Emergency Voice Communication System links to the Fire Alarm Panel location at ground level. The evacuation lifts shall be protected by enclosure in 60 minutes fire-resisting construction.

The safety of occupants in and around the residential parts of the building in case of fire is to be assured by full adoption of all relevant BS 9991 guidance appropriate to flats >4.5 metres above ground level including:-

- Provision of protected entrance hallways enclosed with 30 minutes fire-resisting construction and limited to a maximum extent of 9 metres travel distance.
- Control of maximum travel distances as outlined in Table 5.

Location	Single
Within Flat Hallway	9 metres
Common Corridor	7.5 metres ⁽¹⁾
Private Balconies	7.5 metres

(1) Naturally ventilated
Table 5. Control of travel distances

Escape Infra-structure

The buildings are provided with protected escape stairways (minimum 1,000 mm wide) enclosed in minimum **60 minutes** fire-resisting construction. All storey exit doors shall have a clear width of 850 mm to allow for escape of up to 100 persons. Window escape is not to be relied upon from any location.

Policy D5(B5) Measures

The fire safety design shall meet London Plan Policy D5(B5) by enhanced fire precautions including:-

- Inclusion of evacuation lifts complying with the principles contained in pr EN 81-76:2019 in addition to disabled refuges at each storey level.
- Disabled refuges shall be separated from flats by not less than 2 no. FD30S fire-resisting doorsets.
- Disabled refuges shall sit clear of escape routes within protected stairways and protected by natural smoke ventilation systems.

London Policy Objective D12B(2) and D12A(5)

Building Regulation B1

Evacuation Strategy

Residential parts shall be designed using the London Fire Brigade preferred "stay put" evacuation model, i.e. only the residents of the flat of fire origin to evacuate prior to Fire Service arrival. The common escape routes are to be fitted with automatic smoke ventilation facilities to assist escape and Fire Service operations.

Should a "total evacuation" of the building be deemed necessary by the Fire Service, the width of the proposed stairways (minimum 1,000 mm) have been confirmed as being adequate to discharge the entire buildings occupancies simultaneously.

Evacuation shall not rely on Fire Service intervention.

A building specific Escape Plan should be developed by the responsible person under the *Regulatory Reform (Fire Safety) Order (2005)* that recognises:-

- The critical reliance of the protected escape stairways on fire doors being closed at all material times.
- The need for self-reliance in terms of escape with appropriate assistance provided from within the building where necessary for younger, older or cognitively/mobility impaired occupants. Personal Emergency Evacuation Plans (PEEPs) shall be documented for residents requiring assisted escape.
- The guidance in Annex G of BS 9999:2017 shall be followed in regard of management of the evacuation for mobility impaired persons.

Planning Fire Safety Statement for Harefield Grove, Middlesex UB9 6JY

The management of the evacuation lifts (by trained persons) during the evacuation process shall accord with the principles contained in Greater London Authority London Plan Draft Guidance Sheet Policy D5(B5). The basis for the safe operation of the Evacuation Lifts shall be determined in co-operation with flat owners and regular training shall be provided.

It is highlighted that these responsibilities are likely to evolve over time and the Evacuation Plans shall be subject of periodic review (not less than annually). It is recommended that the Evacuation Plans should also be extended to consideration of wider fire safety matters such as regular weekly testing and maintenance of the fire alarm system. Such information shall be fit-for-purpose to permit the responsible person in discharging obligations arising from the *Regulatory Reform (Fire Safety) Order (2005)*.

Final Evacuation Assembly Point is identified in Figure 10. These spaces shall be kept clear at all material times.

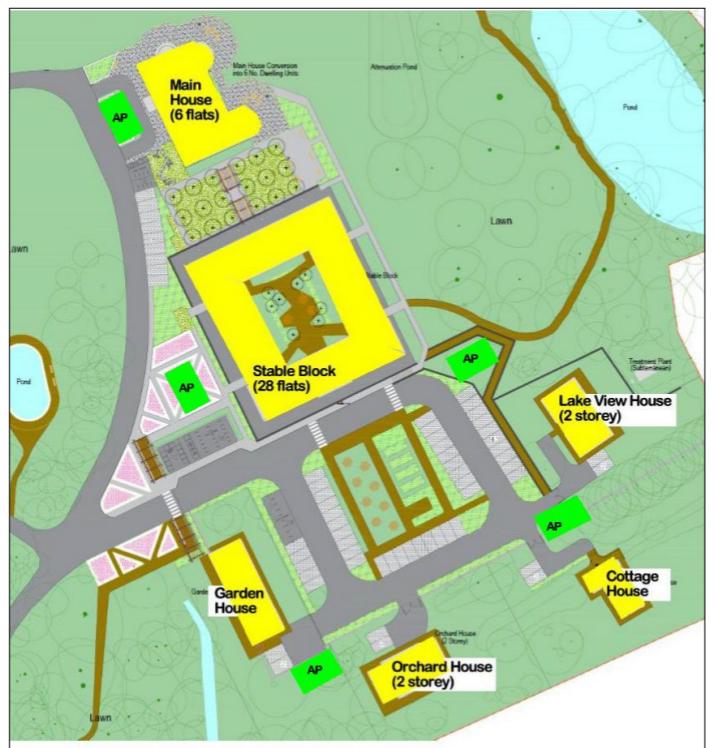


Figure 10. Assembly Points (labelled AP)

London Plan Policy Objective D12B(3) and D12A(2) Fire Safety Systems (Active, Passive & Management)

Active Fire Precautions

Active fire safety precautions to include:-

- Provision of natural automatic smoke ventilation systems to protect residential escape corridors, including provision of 1.0 m² automatic opening vents above all stairways.
- Provision of automatic fire detection and alarm to BS 5839:Part 6:2019 (**Type LD2**) in all flats with provision of automatic fire detection to BS 5839:Part 1:2017 (**Type L5**) in the common residential stairways and escape corridors.
- All residential blocks of flats are to be fitted with evacuation lifts complying with the principles contained in to pr EN 81-76:2019 in addition to disabled refuges at each storey level.
- All common escape routes and stairs to be fitted with emergency escape lighting to BS 5266:Part 1:2016, including maintained (permanently illuminated) exit signage.

Passive Fire Precautions

Passive fire safety precautions include adoption of best design practice and construction standards shall be observed to reduce ignition risks, e.g. electrical wiring.

Common escape stairways shall be enclosed at all levels in minimum 60 minutes fire-resisting construction, including minimum FD30S fire-resisting doorsets. Fire-resisting construction shall be provided to separate individual flats and storey levels. Fire-resisting barriers shall be provided to inhibit fire/smoke spread and to protect the common escape routes as identified in Figures 2 to 7.

Fire Safety Management (Regulation 38)

The common parts of the proposed buildings shall be subject of individual fire safety management and Fire Risk Assessments under the auspices of the *Regulatory Reform (Fire Safety) Order (2005)* and the *Fire Safety Bill (2021)*.

Flat owners overhead shall be apprised of the fire safety systems installed within their dwellings including advice on the routine weekly testing and annual maintenance of the fire detection and alarm system to BS 5839:Part 6 requirements. As per Regulation 38, all relevant design fire safety information (including operations, maintenance and routine testing of fire safety systems) shall be formally handed over to the responsible person on completion.

London Plan Policy Objective D12B(4) and D12A(6) Building Regulation B5 Fire Service Access in and around the building

Fire Service facilities within the building

In general given their limited height, no special fire-fighting facilities are required within the buildings. Generally, all residential parts of both buildings are within 45 metres of the Fire Brigade vehicle hard-standings (as measured along the line of a laid hose) except for Stair No. 3 in the Stables Block.

Accordingly, Stair No. 3 shall be fitted with a dry rising main system (meeting the requirements of BS 9990) with dry main valve outlet valves located on every floor level. All locations in flats served by Stair No. 3 shall be within 45 metres of a dry main outlet. The inlet breach valve to the dry main shall be located remotely from Stair No. 3 as necessary to ensure that the breach valve is within 18 metres and line-of-sight of a Fire Brigade vehicle hard-standing. Figure 4 refers.

All residential stairways shall each be provided with 1.0 m² automatic smoke ventilation at their heads. Fireman's controls shall be provided at ground and top floor levels.

The site will be fitted with a private fire hydrant (to BS 750 and BS 9990) fed from the towns mains system.

London Policy Objective D12B(5) Building Regulation B5 Fire Service Access to the site

Access for Fire Service personnel & equipment

The site is afforded Fire Service access from the existing public highway, i.e. Rickmansworth Road. The buildings' Fire Service access are shown in red and labelled "FB" in Figure 11.

It is confirmed that there is capacity for Fire Brigade vehicles to access within 18 metres and line-of-sight of all Building Entry Points, whilst remaining within a maximum of 90 metres from the new proposed private fire hydrant (fed from the existing towns mains and shown "H" in Figure 11).

The potential for standing of the Fire Service pumping appliances shall be unaffected by the construction process. When temporary obstructions occur, alternative hard-standings shall be provided.

Planning Fire Safety Statement for Harefield Grove, Middlesex UB9 6JY

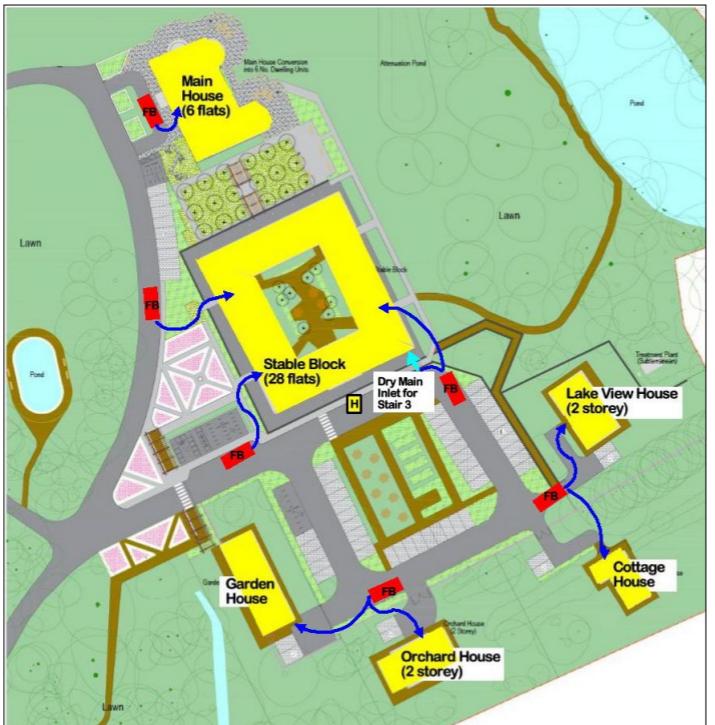


Figure 11. Fire Brigade "FB" hard-standings and fire hydrant "H"

London Plan Policy Objective D12B(6) Future Modifications (The Golden Thread)

The fire safety strategy underpinning the buildings' design shall be maintained into the design and construction stages (RIBA Stages 3-6), allowing for future modifications as might arise. It is highlighted that the Building Regulations 2010 (as amended in 2018) will apply to these buildings.

Specific construction products and manufacturer's verification of performance shall be proposed in due course by the Design Team with regard to delivery on the principles contained in this Planning Statement, i.e. specification of appropriate materials and standards of workmanship.

As per Regulation 38, all relevant design fire safety information (including operations, maintenance and routine testing of fire safety systems) shall be formally handed over to the responsible person on completion. Such information shall be fit-for-purpose to permit the responsible person in discharging obligations arising from the *Regulatory Reform (Fire Safety) Order (2005)*.

The *Materials Information Register* contained within this PFSS shall be passed to any third party engaged in the future construction phase to maintain the "golden thread" of fire safety design. It is noted that this PFSS is a document of public record and will be available to the Building Control Body overseeing the design and construction stages.

Any future modification to the following constituent elements of the buildings should be assumed to adversely affect this declaration, unless demonstrated to the contrary by a competent person:-

- (i) Omission of evacuation lifts or disabled refuges.
- (ii) Modifications to the extent of natural smoke ventilation systems protecting common escape routes.
- (iii) Reduction in any fire resistance ratings contained in this PFSS.
- (iv) Modification of the internal layout of flats in a manner outside of the guidance contained in BS9991.

London Plan Policies 12(B) and D5(B5) Declaration by Expert Assessor

This Planning Fire Safety Statement has been prepared in good faith using our specific fire safety expertise to meet our best understanding of the requirements of Policies D12A, D12B and D5(B5) of *The London Plan 2021* using the recommended checklist below.

The subject building is amenable to achieving full compliance with Part B (Fire Safety) to the Building Regulations, 2010 and Building (Amendment) Regulations 2018.

Any future modifications to the fire safety strategy should be assumed to adversely affect this declaration, unless demonstrated to the contrary by a competent person.

Dr Raymond J. Connolly
BE, PhD, CEng, MIEI, MIFireE, MSFPE
Chartered Engineer & Fire Safety Specialist
For Fire & Risk Solutions Ltd.

Greater London Authority
London Plan Guidance Sheet
Policy D12(B)

Figure 1: London Plan Policy D12(B) Fire Statement checklist

