PLANNING FIRE SAFETY STRATEGY

2 Hopefield Lodge, Montague Avenue, London, W7 3QW

Contents:

1 Introduction

1.1 This report presents the fire safety strategy for the 2 Hopefield Lodge W7 3QW

1.2 The strategy sets out the measures that are proposed to satisfy the functional requirements of the Building Regulations.

1.3 Legislation is concerned only with protecting the health and safety of people in and around a building and is not specifically intended to provide protection against damage or consequent financial losses. Whilst measures for life safety will often provide an element of property protection, it is recommended that consideration be given to a separate study regarding the limitation of direct and indirect losses that could occur because of fire damage and that early consultation be carried out with the prospective insurers (if applicable).

1.4 Where a particular approach or fire safety measure is proposed, this should be taken as the intended approach at the time of writing. The strategy will be subject to confirmation and further development during subsequent design stages and some approaches or measures may change because of this process.

2 Brief description of the building

2.1 A single-story rear extension is planned for the building, which operates on two-storeys.

2.2 The site, located at Hopefield Lodge, offers vehicular access and enough space for a fire appliance. There is rear access to St. Georges Road, providing an alternative egress route if needed. It is important to note that the building is residential, and the proposed changes have a minimal impact on the overall fire risk.

3 Statutory requirements

Building Regulations

3.1 The building will be subject to the provisions of the Building Regulations 2010, which are the primary basis for statutory control of building design in England and Wales.

3.2 For fire safety, the functional requirements of the Building Regulations are set out under the following headings:

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

4 Means of warning and escape

Fire alarm and detection systems (active)

Alarm

4.1 An electrical fire alarm system will be provided in accordance with BS 5839: Part 1 incorporating sufficient traditional sounders to be clearly audible throughout.

Detection

4.2 The system will generally utilise optical smoke detectors, but heat detectors will be installed where there is a potential for steam or fumes, etc. to give rise to unwanted alarms (e.g. in kitchens and plant rooms).

Cause and effects

4.3 Activation of a single device will cause the evacuation signal throughout the building in which fire has been detected.

4.4 In the event of a fire the resident will make a manual call to the emergency services 999 facility.

Occupant numbers

4.5 The house is a two-bedroom family dwelling.

Vertical escape

Escape stairs (passive)

4.6 The protected internal staircase of the property enables quick egress from the upstairs.

Protection of escape stairs (passive/active)

4.7 All escape stairs will be enclosed in construction having a fire resistance of at least 30 minutes.

General escape provisions

Fire-resisting protection to escape routes (passive)

4.8 All walls, floors, doors, and partitions that need to be fire-resisting to protect escape routes will provide a minimum of 30 minutes fire resistance.

Doors protecting escape routes (passive)

4.9 All fire doors protecting escape routes will be provided with smoke seals complying with the recommendations of they will be designated FD30S.

4.10 In this design, a door is omitted, but the extension will include an escape door at the rear to offset this change. The primary means of exit remains the front door, and its current position remains unaffected.

Height of escape routes

4.11 All escape routes will have a clear headroom of at least 2m with no projections below this height, except for doorways.

Final exits

4.12 Final exits will be of sufficient width to accommodate the number of persons expected to use them.

5 Internal fire spread (linings)

Linings (passive)

5.1 The wall and ceiling linings throughout the building will comply with either the national or European classifications given in Table 1 (see also table 10 of ADB).

Table 12. Classification of wall and ceiling linings

Location	National class	European class
Walls and ceilings in rooms up to 30m^2	3	D-s3, d2
Walls and ceilings in other rooms	1	C-s3, d2
Circulation spaces	0	B-s3, d2

6 Internal fire spread (structure)

Loadbearing elements of structure (passive)

6.1 In accordance with Table A2 of Approved Document B loadbearing elements of structure will have 60 minutes fire resistance.

Concealed spaces (passive)

6.2 Any concealed spaces or cavities in the construction will be sealed with cavity barriers in accordance with the recommendations of section 10 (and Table 13) of ADB. Cavity barriers will be constructed of materials capable of providing a fire resistance of 30 minutes integrity and 15 minutes insulation.

6.3 Cavity barriers will be provided:

a) at the edges of cavities and around openings penetrating them.

b) on protected escape routes, above and below any fire resisting construction that is not carried the full storey height.

c) above any fire doors provided in protected escape routes.

Protection of openings and fire stopping (passive)

6.4 All penetrations through fire resisting separating elements (e.g. protected escape routes and compartment walls/floors) will be provided with fire doors, fire stopping, fire seals and dampers in accordance with the recommendations of section 11 of ADB and BS 5588: Part 9.

Fire doors (passive)

6.5 FD30 Fire doors are required off the protected stairway and at the rear of the building onto the alleyway.

Fire stopping (passive)

6.6 Where cables, conduits, ducts, or pipes pass through a fire resisting barrier the penetrations will be sealed with a proprietary sealing system which has been shown by test to maintain the fire resistance of the barrier.

6.7 Alternatively, the opening through the barrier will be kept as small as practical and any gaps filled with suitable fire-stopping materials (e.g., mineral fibre, cement mortar or gypsum plaster). Where non-rigid materials are utilised or the unsupported span is 100mm or more the fire-stopping material will be reinforced or supported by suitable non-combustible materials.

7 External fire spread

External walls (passive)

Fire resistance

7.1 Except for the allowable unprotected areas, the external walls that are located more than 1m from the site (or notional) boundary will be of fire-resisting construction providing 60 minutes integrity and 15 minutes insulation when tested from the internal face of the building.

8 Access and facilities for the fire service

Vehicle access

8.1 Access to the building is acceptable as it is directly off a public highway.

Fire safety management procedures

8.2 This fire safety strategy has been developed on the assumption that the building will be properly maintained.

A.1 Fire protection systems

Fire doors

A.1.1 Fire doors will be specified in accordance with the recommendations of Appendix B of ADB. For initial guidance some of the key recommendations are summarised below.

A.1.2 All fire doors will satisfy the appropriate fire resistance criteria in accordance with BS 476: Part 22 or BS EN 13501-2.

A.1.3 For example, doors satisfying these criteria for 30 minutes fire resistance would be designated FD30 or E30 respectively.

A.1.4 Doors protecting escape routes also need to restrict smoke leakage. A suffix (S) is added to denote compliance with national tests for smoke leakage and (Sa) for compliance with the European system.

A.1.5 For example, doors satisfying the smoke leakage criteria and providing 60 minutes fire resistance would be designated either FD60S or E60Sa.

A.1.6 The test evidence used to substantiate the rating of a door should be checked to ensure that it is applicable to the whole installed assembly.

Fire-resisting construction

A.1.7 The fire resistance of various forms of construction is classified in terms of national (British Standard) tests or European tests.

A.1.8 Classification under the national system is based on BS 476: Parts 20 to 24 (or BS 476: Part 8 for items tested prior to 1988.

A.1.9 In the European system products are classified in accordance with BS EN 135012.

A.1.10 The fire resistance performance of a building element in a fire resistance test is specified in terms of the following criteria:

a) Resistance to collapse (loadbearing capacity). This applies only to loadbearing elements such as beams, columns, floors and loadbearing walls.

b) Resistance to fire penetration (integrity). This applies to separating elements such as compartment walls and doors and indicates the length of time taken before the element is penetrated by significant gaps or flames.

c) Resistance to heat transfer (insulation). This indicates the length of time taken before a specified temperature is reached on the unexposed (cold) face of the element.

Fire detection and alarm systems

A.1.11 Fire detection and alarm systems will comply with BS 5839: Part 1.

A.1.12 The extent of detector coverage is determined by the category of system. Life safety systems are subdivided into different system types depending upon the extent of detector coverage:

- *L1 Detectors installed throughout all areas of the building.*
- *L2 Includes areas covered by an L3 system plus full coverage of specified higher risk rooms.*

A.1.13 Detector spacing will vary according to room and ceiling geometry but typically under a flat ceiling smoke detectors will be located so that any point within a room is within 7.5m of a smoke detector or 5.3m of a heat detector.

Wiring systems

A.1.14 Wiring systems will meet the following criteria:

a) Wiring should:

1) consist of mineral-insulated, copper-sheathed cables conforming to BS 6207-1; or
2) consist of cables conforming to the requirements for classification as CWZ in accordance with BS 6387:1994; or
3) be protected against exposure to the fire by separation from any significant fire risk by a wall, partition, or floor with a fire resistance not less than that required for the building.

b) The wiring systems will be separate from any circuit provided for any other purpose.

c) Jointing and termination methods will conform to BS 6207-2 and should be chosen to minimise any reduction in reliability and fire-resistance below that of un-jointed cable.

d) The wiring systems will be protected from mechanical damage.