

Project Name	Finchley Road
Document Title	London Plan Technical Note
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1. INTRODUCTION

Hydrock Fire have been engaged by 317 Finchley Road Ltd to provide fire engineering services for the proposed refurbishment of Finchley Road, London. This report will outline the requirements of the London Plan [March 2021] Policy D12 (A and B) and highlight how the proposed fire safety features of the development comply with them.

1.1 Building Overview

Finchley Road is a ten-storey residential development in London which features three blocks of residential around a single central stair. The development also features lower ground and basement levels with ancillary use in the basement and a commercial unit on ground/lower ground levels. The apartments are mainly single storey apartments with several duplexes (on basement and eighth floors).

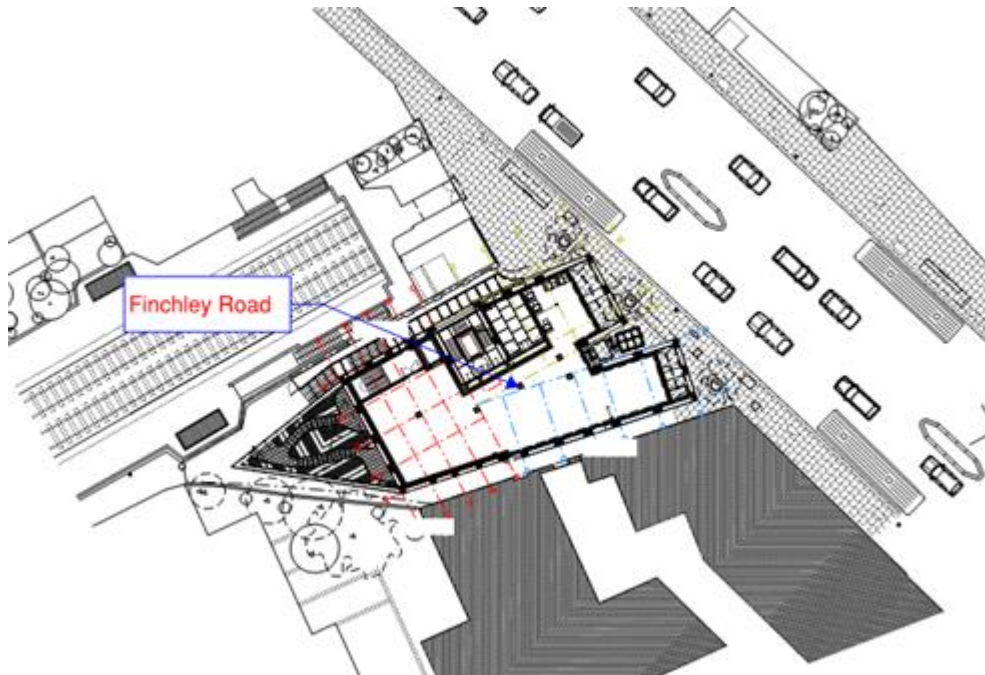


Figure 1 Site plan

1.2 Limitations of Report

This technical note represents only the best judgement of the consultants involved in its preparation, and is based, in part, on information provided by others. Under no circumstances is liability accepted for the accuracy of such information.

This technical design note is limited to the scope requested by the client, and is not a Gateway One fire statement, or full London Plan fire statement report. Planning was initially granted prior to Hydrock involvement, and the development is now at RIBA Stage 4/5 (not RIBA Stage 2 – planning).

1.3 Basis of Report

This report has been developed based on the information and drawings provided by Groupwork as outlined in Table 1.

Table 1 Information on which the report is based

Description	Drawing No.	Revision	Date
Proposed Basement Floor Plan	240 - 1000	I10	28.10.2022
Proposed Lower Ground Floor Plan	240 - 1001	I10	28.10.2022
Proposed Ground Floor Plan	240 - 1002	I10	28.10.2022
Proposed First Floor Plan	240 - 1003	I10	28.10.2022
Proposed Second Floor Plan	240 - 1004	I10	28.10.2022
Proposed Third Floor Plan	240 - 1005	I10	28.10.2022
Proposed Fourth Floor Plan	240 - 1010	I10	28.10.2022
Proposed Fifth Floor Plan	240 - 1007	I10	28.10.2022
Proposed Sixth Floor Plan	240 - 1010	I10	28.10.2022
Proposed Seventh Floor Plan	240 - 1009	I10	28.10.2022
Proposed Eighth Floor Plan	240 - 1010	I10	28.10.2022
Proposed Ninth Floor Plan	240 - 1011	I10	28.10.2022
Proposed Section A	240 - 1250	S4	04.04.2019
Proposed Section B	240 - 1251	S3	04.04.2019
Proposed Section C	240 - 1252	S1	04.04.2019
Block A Elevations	240 - 5020	A	14.12.2021
Block B Elevations	240 - 5021	A	14.12.2021
Block C Elevations	240 - 5022	A	14.12.2021
Site Plan	240-011	S1	04.22.2021

1.4 Purpose of Report

Hydrock Fire were originally appointed to carry out RIBA Stage 4 and 5 fire strategy works for the Finchley Road development (prepared in accordance with BS 9991:2015). Hydrock have now been appointed to produce a technical note providing a summary of the fire safety provisions from the Stage 4/5 fire strategy with whilst referencing the London Plan [March 2021] Policy D12 (A and B) due to a Section 73 application.

1.5 Planning Information

The following section outlines the information relevant to the S73 application.

317 Finchley Road is a residential building which is substantially constructed, but not complete. As confirmed by Simply Planning, the planning permission that has been implemented is permission

2016/2910/P granted in March 2017. The construction is registered and required to meet building regulations 2010.

As confirmed by Simply Planning, a S73 application has been submitted for amendments to the scheme during construction, the amendments are retrospective, but all of the amendments are minor material rather than material amendments that would require a new application to be submitted.

It is acknowledged that as a S73 application it is necessary to address material changes in planning policy. In this regard, the London Plan 2021 has been adopted since the grant of approval. Fire Safety is addressed under Policy D12. The text accompanying D12 is clear that building regulations are the key area for addressing fire safety, but that it should be considered at the earliest planning stage. It should be noted that this S73 application is a minor material change to a building that is registered under previous Building Regulations and which is substantially constructed. This note seeks to address Policy D12 in so far as it is relevant to the S73 application and the proposed improvements to the scheme.

Fire safety is recognised as a key design component and Hydrock Fire have been instructed to advise on the RIBA Stage 4 and 5 design. As part of this instruction we have sought the advice of the London Fire Brigade (LFB), with regards to the changes to the project, which implemented mechanical smoke ventilation, sprinklers and common lobbies. These changes to fire safety provisions are an improvement over the original design which was previously granted planning permission.

This report provides a summary of the work undertaken to support the S73 application and the improvements / amendments to the scheme previously granted planning that have been made to the scheme to seek to address London Plan Policy D12 in so far as physical changes are possible at this stage of the construction.

2. MEANS OF ESCAPE

This section will outline the means of escape provisions within the Finchley Road development. These provisions relate to Policy D12 Clauses A1, A4, A5, B2, 3.12.5, 3.12.7 and Policy D5 Clause B5.

2.1 Evacuation Strategy

The proposed evacuation strategy for residential quarters is based on a 'stay-put' strategy whereby occupants in the unit of fire origin are to evacuate, and all other occupants are to remain in place. However, occupants may leave their apartment and self-evacuate at any time they feel necessary. Any additional evacuation is at the discretion of the London Fire Brigade.

The proposed evacuation strategy for commercial and ancillary areas is based on a simultaneous evacuation strategy, whereby all occupants are to evacuate simultaneously on activation of the fire alarm.

2.2 Provisions for Disabled Occupants

Evacuation Lifts

The scheme is not currently provided with an Evacuation Lift as the development began construction prior to the introduction of the London Plan. However, the scheme is provided with a firefighting lift which could be used to facilitate evacuation of disabled occupants (subject to specialist design).

Refuges

Disabled refuges are to be provided within the stair cases providing access from the basement level and lower ground floor.

2.3 Horizontal Means of Escape

Horizontal means of escape for each level within the building can be summarised as follows:

- Basement: Escape from the basement ancillary area is provided via ventilated lobby which leads to a protected stair way.
- Lower Ground: Escape from the lower ground floor commercial unit is via a protected stairway which discharges direct to external at upper ground level.
- Upper Ground: Escape from the upper ground floor is provided direct to the exterior of the building.
- Upper Floor: All apartments are provided with access via a protected corridor from the firefighting stair with the travel distances from each entrance door being within 15m.

2.4 Non-residential Travel Distances

The travel distances within the non-residential areas (basement level) currently meet the travel distance requirements of BS 9991:2015.

The layout of the commercial unit is currently unknown. It should be ensured that the travel distance requirements are not exceeded during fit-out.

2.5 Residential Units

The single level apartments will be provided with sprinklers and LD1 detection. Therefore the permitted travel distance from the furthest point within the flat to the flat entrance door is 20m in accordance with BS 9991:2015. This travel distance limit has been met based on the floor plans provided.

Unit 22 on eighth floor is a duplex apartments and as such, will be provided with sprinklers and a protected stairway.

The basement apartments feature a means of escape on basement level via the apartment entrance door and on upper ground level via escape windows. Escape windows should have an unobstructed openable area that is a minimum of 0.33m², having minimum dimensions of 450mm x 450mm with the bottom of the openable area not more than 1,100mm from floor level.

2.6 Vertical Means of Escape

As the development is greater than 18m in height, a firefighting shaft is provided serving the upper residential floors and basement. The firefighting stair meets the 1.1m width required by BS 9991:2015.

The stair discharges through a protected corridor to external at ground level.

In accordance with BS 9991:2015 a single stair should not continue down to basement. The stair within the development continues down to basement. This is considered reasonable subject to Building Control approval based on the following:

- A 120 minute fire resisting partition and FS120S door will be provided within the stair separating basement from upper flights of the stair;
- The basement stair lobby will be provided with mechanical smoke ventilation via mechanical smoke shaft to ensure that the stair does not become compromised by smoke from a basement fire. CFD analysis has been carried out to validate this.

The lower ground floor commercial unit is provided with an escape stair which discharges direct to external at ground floor.

Stair Construction

The building is provided with a single stair which serves all levels. The stair width is approximately 1200mm, exceeding the requirements set out in BS9991:2015. The common stair is to be constructed in accordance with BS5385-1:2010 and have flights and landings constructed of limited combustibility (European Class A2-s3, d2 or better).

2.7 Evacuation Assembly Points

The final assembly point for occupants in the event of an evacuation is to be confirmed by building management.

3. ACTIVE FIRE SAFETY MEASURES

This section will outline the active fire safety provisions within the Finchley Road development. These provisions relate to Policy D12 Clauses A2 and B3.

3.1 Fire Detection and Alarm Systems

3.1.1 Residential Apartments

The minimum fire detection and alarm system category for the residential units is Grade D Category LD2. All apartments other than Units 1 and Unit 2 are to be upgraded to Grade D Category LD1. Fire detection and alarm systems within the residential units are to be designed, installed, and commissioned in accordance with BS5839-6:2019.

3.1.2 Ancillary Areas

The ancillary areas are to be provided with at least an L3 fire detection and alarm system designed in accordance with BS5839-1:2017.

3.1.3 Roof Gardens

An alarm, audible throughout the private roof gardens, should be sounded upon activation of any fire detection system in the access room.

An alarm, audible throughout the communal roof garden, should be sounded upon activation of any fire detection system in the stairs or lobby access space.

3.1.4 *Retail Unit*

The minimum requirements for detection and alarm in the retail unit is a Category M system in accordance with Table A.1 of BS 5839-1:2017.

3.2 *Smoke Ventilation*

3.2.1 *Mechanical Smoke Ventilation*

The development will be provided with a 0.6m² mechanical smoke shaft serving the stair lobbies on the residential floors and the stair lobby in the basement. The stair will be provided with a 1m² AOV at the head of the stair.

This smoke ventilation system will consist of the following:

- A 0.6m² (free area) mechanical smoke shaft communicating with the stair lobbies via an AOV within each lobby;
- Duty/standby fan to be provided serving the mechanical smoke shaft;
- A 1.0m² (free area) automatic opening vent is to be provided at the head of the stair;
- On detection of smoke within a stair lobby the vent into the smoke shaft within the lobby of detection are to open, vents to the smoke shafts at all other levels are to be closed, the vent at the head of the stair is to open (allowing supply air for the smoke ventilation system into the stair);
- Either:
 - (1) the door to the stair at each level is to open into the residential stair lobby and is to be calibrated to allow the smoke ventilation system to 'pull' the door open and permanently allow supply air from the stair into the lobby where smoke is being extracted. In this case fans may be fixed speed; or
 - (2) the doors between the stair lobby and stair need not open into stair lobby and pressure sensors are to be provided within the stair lobbies to control the speed of the fans and prevent over-depressurisation of the lobby when the stair door is closed. In this case fans are to be variable speed.

3.2.2 *Natural Ventilation to Basement*

In accordance with Clause 14.2.1.3.2 of BS 9991:2015, the smoke outlets provided from the basement should comply with the following:

- Not less than 2.5% of the floor area of each storey;
- Sited at the highest level practicable, either in the ceiling or in the wall of the space they serve;

- Evenly distributed around the perimeter of the building, to discharge into the open air outside the building;
- Located such that they would not prevent the use of escape routes from the building.

3.3 Emergency Signage

Escape signage is to be provided throughout the building designed and installed in accordance with BS5499:2013. Signage utilised throughout the building is to be consistent and in accordance with BS ISO 3864-1:2011.

3.4 Wayfinding Signage for The Fire Service

In accordance with paragraphs 15.13 and-15.16 of Approved Document B Volume 1 (2020), to assist the fire service in identifying each floor in a block of flats with a top storey more than 11m above ground level, floor identification signs and flat indicator signs should be provided.

3.1 Emergency Lighting

Emergency lighting is to be provided throughout the development designed, installed, and commissioned in accordance with BS5266-1:2016.

3.2 Automatic Water Fire Suppression Systems (AWFSS)

The development is to be provided with a sprinkler system in the basement and residential floors (levels 1-9). This should be a category 4 system to BS 9251:2021.

The sprinkler system will need to be designed by a specialist as the 'Competent Person' as per BS9251:2021.

4. PASSIVE FIRE SAFETY MEASURES AND CONSTRUCTION DETAILS

This section will outline the passive fire safety provisions within the Finchley Road development. These provisions relate to Policy D12 Clauses A2, A3, B1 and B3.

4.1 Elements of Structure

For the purposes of the Fire Safety Strategy, the top occupied storey of the building (i.e. excluding levels consisting of plant only) is 28.35m above ground level. Therefore, the required fire resistance for the elements of structure is 90 minutes (with regard to load-bearing capacity) in accordance with Table 4 of BS9991:2015.

4.2 Compartmentation

The enclosure of all areas within the Finchley Road development can be summarised as follows:

- Cycle Storage: 60-minute fire resisting construction;
- Refuse Storage: 60-minute fire resisting construction;
- Plant Room: 90-minute fire resisting construction;
- Substation: 120-minute fire resisting construction;
- All Residential Units: 60-minute fire resisting construction separating units from all other areas;
- Firefighting stair and shafts: The escape stair, lift shaft and service risers are all to be designed as protected shafts which are enclosed by 120-minute fire resisting construction.
- All Protected Corridors and Lobbies: 30-minute fire resisting construction.

4.3 Fire Doors

Fire doors are to meet the requirements outlined within BS9991:2015.

4.4 Internal Linings

The surface linings are to be in accordance with Table 2 throughout the development.

Table 2 Internal lining requirements

Location	British Standard Performance Class ^[1]	European Performance Class ^[2]
Non-residential rooms having an area not more than 30m ²	3	D-s3, d2
Residential rooms having an area not more than 4m ²	3	D-s3, d2
All other rooms	1	C-s3, d2
Circulation spaces within dwellings	1	C-s3, d2
Other circulation spaces	0	B-s3, d2

Notes

1. Relates to performance measures in BS476 Parts 6 & 7 criteria
2. Relates to performance determined in accordance with BSEN13501-1:2018

The surface linings of the walls and ceilings should generally conform to the classifications outlined in Table 2. Parts of walls in rooms may be of a lower class but not lower than Class 3 (national class) or Class D-s3, d2 (European class) provided that the total of those parts in any one room does not exceed 50% of the floor area of the room (subject to a maximum of 60m²).

4.5 Fire-Stopping Elements

Fire-stopping elements are to be implemented in order to maintain the level of fire-resisting construction in all walls and ceilings. In every joint, imperfection of fit, and opening to allow services to pass through the walls, fire-stopping elements should the same level of fire-resisting construction as required for the floor/wall it replaces.

4.6 External Wall Construction

The primary materials used in the external wall construction are to achieve Class A2-s1, d0 or A1.

The external wall structure is currently being developed by the design team however the proposals are to provide render system to the external walls.

4.7 Space Separation and Unprotected Façade Areas

Hydrock's stage 4 strategy outlines the maximum unprotected areas for each apartment based on maximum permitted areas using the enclosing rectangle method (BR 187:2014).

4.8 Roof Coverings

The build-up of the roof above the roof structure is to achieve a classification of $B_{ROOF}(t_4)$.

4.9 Cavity Barriers

Cavity barriers will be installed throughout the development in accordance with BS9991:2015. Cavity barriers will be provided in the cavity of:

- an external wall at all cavity edges and around all openings in the external wall (i.e. windows);
- an external wall in line with a compartment floor where it meets the external wall;
- an external wall in line with a compartment wall where it meets the external wall;
- an internal cavity wall at the junction with a fire rated wall/floor.

5. ACCESS AND FACILITIES FOR THE FIRE AND RESCUE SERVICE

This section will outline the access and facilities for the Fire and Rescue Service for the Finchley Road development. These provisions relate to Policy D12 Clauses A6, B4 and B5.

5.1 Site Accessibility

The nearest fire station is the West Hampstead Fire Station situated at 327B W End Ln, London, NW6 1RS. The Fire Service can approach the site via Finchley Road and park on Finchley Road. Hydrock are not aware of any restrictions to site access for fire appliances.

5.1 Firefighting Facilities

The development will be provided with a firefighting shaft serving basement level and level 1-8.

Fire-fighting shafts should be constructed in accordance with the recommendation given in clause 20.3 of BS 9999 for the fire resistance, resistance to damage of enclosing and separating partitions, and floor coverings of firefighting shafts. The minimum fire rating for the construction of a firefighting shaft is 120min.

The firefighting shaft will be provided with a ventilated firefighting stair (1m^2 AOV at the head of the stair) and a ventilated firefighting lobby (served by 0.6m^2 mechanical smoke extract shaft at basement level and levels 1-8).

Fire-fighting lift installations should conform to BS EN 81-72.

The firefighting lift opens into the firefighting stair which is a deviation from BS 9991:2015 guidance. This arrangement is considered reasonable subject to Building Control approval based on the following:

- The stair lobbies are provided with mechanical smoke ventilation via a 0.6m^2 smoke shaft which is above the minimum requirements of BS 9991:2015 which would only require natural smoke ventilation. The mechanical smoke ventilation has been provided to ensure that the stair will not be compromised by smoke in the event of a fire. CFD analysis has been carried out to validate this.

Buildings fitted with dry fire mains should have access for a fire appliance to within 18m of each fire main inlet connection point, typically on the face of the building close to the entrance point leading to the fire-fighting shaft, with the inlet visible from the fire appliance.

Fire mains should be designed and installed in accordance with BS 9990. Fire mains should be installed in buildings where a floor is higher than 18m above ground level.

Fire mains should be installed in any building provided with a firefighting shaft and located within the stair enclosure.

There is a dry riser inlet shown at ground floor at the residential entrance on the floor plans provided. There should be a dry riser outlet at every floor in the firefighting shaft. All areas of the building footprint are within the 60m hose length coverage from a dry riser in a fire-fighting shaft, as described in BS9991:2015.

5.1 Fire Hydrants

In accordance with BS9991:2015 and BS9999:2017 it should be ensured a fire hydrant is provided within 90m of the dry riser inlets serving the development. The exact location of hydrants should be confirmed in due course however, based on the urbanisation of the development area we would expect the hydrant provision to be acceptable.

6. FIRE SAFETY MANAGEMENT AND FUTURE DEVELOPMENT

This section will outline the fire safety management requirements for the Finchley Road development. These provisions relate to Policy D12 Clauses B4 and B6.

The ongoing management of the building and its fire safety provisions is vital in ensuring a safe and usable building. Maintenance procedures will be developed to ensure that all equipment and services are able to operate effectively and that the building's systems perform as intended.

Reference to is to be made to Section 4 of BS9999:2017 for the relevant information on the management of fire risk.

6.1 The Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order (RRFSO) regulations shall apply to this development and are the responsibility of the Responsible Person. The RRFSO applies to all workplaces and other non-domestic areas and premises, requiring the 'Responsible Person' to undertake an assessment of the fire risk in their premises and to keep this assessment under review.

6.2 Regulation 38

In conjunction with the RRFSO, Regulation 38 requires that information relating to the fire safety provisions within a building is provided to the 'Responsible Person' so that they (or an appointed 'Competent Person') can undertake the Fire Risk Assessment required under the RRFSO. The Fire Safety Strategy of the building will form part of the information provided to the 'Responsible Person' in order for them to undertake and maintain the Fire Risk Assessment for the development.

6.3 Future Development

The Fire Safety Strategy for the development will outline the proposed design and operation for the building. Where there are any proposed changes in the future, reference is to be made to the Fire Safety Strategy to ensure any changes meet the requirements of the Fire Safety Strategy and do not have an adverse effect on the safety of occupants.

Where there is an alteration to the design of the building, it is strongly recommended that the Responsible Person commissions the update and development of a new Fire Safety Strategy in order to reflect the proposed changes and fire safety design.