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46 CHALGROVE ROAD

LONDON N17 0JD

FIRE SAFETY DESIGN NOTE

PROPOSED ACCESS AND FACILITIES FOR THE FIRE SERVICE

December 2024

46 CHALGROVE ROAD

TOTTENHAM, LONDON N17 0JD

FIRE SAFETY DESIGN NOTE

PROPOSED ACCESS AND FACILITIES FOR THE FIRE SERVICE

ON BEHALF OF

**HILL
PATRU**

PROJECT	46 CHALGROVE ROAD N17 0JD - LONDON
TITLE	FIRE SAFETY DESIGN NOTE PROPOSED ACCESS AND FACILITIES FOR THE FIRE SERVICE
CLIENT	HILL PATRU ARCHITECTS 22 PRINCE OF WALES ROAD, LONDON NW5 3LG

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1 INTRODUCTION AND SCOPE

The site at 46 Chalgrove Road in Tottenham, London, will be developed to create six new residential units.

The proposed site layout and design are illustrated in Figure 1 and Figure 2.

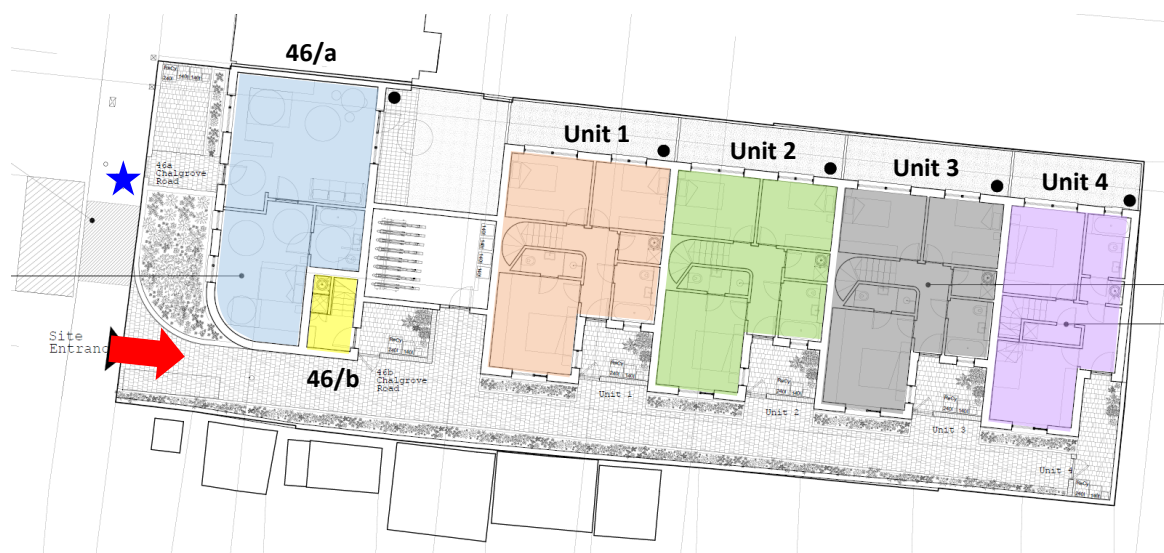


Figure 1 – Proposed Ground Floor Plan, access route from Chalgrove Road and existing fire hydrant (blue star symbol)



Figure 2 – Proposed First Floor Plan

New construction projects must comply with current regulations (Building Regulations 2010). It is, therefore, necessary for the project to meet the functional requirements of Part B of Schedule 1 of these Regulations.

The functional requirements include the following:

- 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 service.

This report focuses on Requirement B5, which states:

(1) The building shall be designed and constructed to provide reasonable facilities to assist firefighters 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.

According to Approved Document B – Vol.1, dwellinghouses' access for a pumping appliance must be provided within 45m of all points of the building. However, this requirement cannot be met in this case. The access roadway width is 220 cm instead of the 370 cm required, which prevents fire appliances from reaching the furthest point within the dwellinghouses.

A fire hydrant is already present and identified in previous Fig.1 with a blue star symbol. However, the distance between the existing fire hydrant and the furthest point within the development is greater than 45m (approx. 70m to the first floor of unit 4).

Hill Patru Architects has appointed IDF Fire Safety Engineering to provide this Design Note to outline the proposed fire service access and facilities strategy, for authorities' approval.

1.1 REGULATORY FRAMEWORK

The proposed fire Safety Design Note is based on:

- Approved Document B – Vol.1 Dwellings – 2019 edition (incorporating 2020 and 2022 amendments).
- GN29 - Fire Safety Guidance Note: Access for Fire Appliances rev.15 (July 2023).
- BS 9990:2015 as a guidance on the design and construction of fire mains.

1.2 REFERENCED DOCUMENTS

The present report is based on the architectural general arrangements provided by Hill Patru Architects. These are listed in Table 1 for information.

AUTHOR	TITLE	DOCUMENT NO.	DATE	REFERENCE
Hill Patru Architects 33 Greenwood Place London NW5 1LB	Proposed Site Ground Floor Plan	2306_00_PL_10_REV	Oct 24	[1]
	Proposed First Floor Plan	2306_00_PL_11_REV	Oct 24	[2]
	Proposed Sections A-A and B-B	2306_00_PL_20_REV	Oct 24	[3]

Table 1 – Referenced documents

2 REQUIREMENT B5 PROPOSED FIRE STRATEGY

According to ADB-Vol.1, block of flats fitted with dry fire mains should apply both of the following:

- a. Access should be provided for a pumping appliance to within 18m of each fire main inlet connection point. Inlets should be on the façade of the building.
- b. The fire main inlet connection point should be visible from the parking position of the appliance, and meet the provisions in Section 8 of BS 9990.

Although the development area will be composed of single dwellings, the above requirement has been considered as a potential solution for our case study, addressing the challenges posed by the insufficient width of the access road and the significant distance between the existing fire hydrant and the furthest point within the development.

The proposed solution includes positioning a fire main inlet within 18 meters of Chalgrove Road (service vehicle access) and a fire main outlet strategically located along the private road to ensure coverage of all areas within the development, maintaining a maximum distance of 45 meters.

The horizontal pipework connecting the inlet to the outlet should be designed to be as short as possible, in compliance with Section 4.2.2 of BS 9990:2015. Ideally, this connecting run should be limited to less than 18 meters to minimize pressure losses and maintain the system's operational efficiency.

The proposed locations of the fire main components have been designed to achieve a balance between regulatory compliance and practical accessibility, as illustrated in Figure 3.

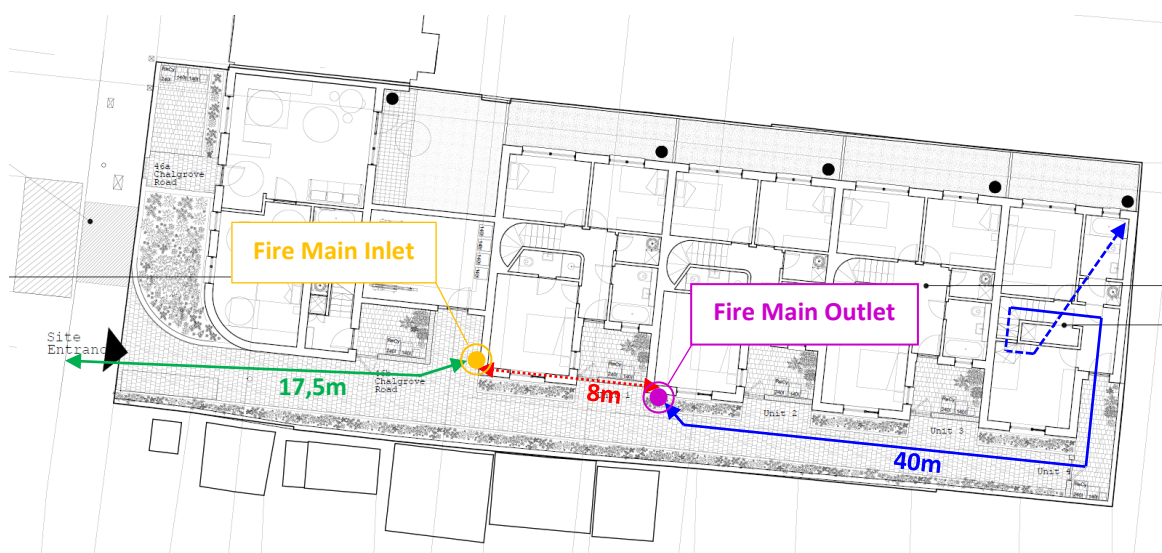


Figure 3 – Proposed Ground Floor Plan with fire main inlet and outlet to provide efficient access and facilities for the fire service

3 CONCLUSIONS

The fire safety strategy for the proposed development at 46 Chalgrove Road has been carefully evaluated in light of the constraints posed by limited access for fire service vehicles. The analysis and proposed measures aim to meet the requirements of the Building Regulations 2010, specifically Requirement B5, while adhering to best practices outlined in BS9990:2015 and Approved Document B – Vol.1.

Key recommendations include the provision of a fire main system designed to ensure adequate access and coverage for firefighting operations. The fire main inlet is strategically located within 18 meters of a point accessible to fire service vehicles, while the outlet ensures coverage to all areas within the building, maintaining compliance with the 45-meter maximum travel distance for firefighting equipment. Furthermore, the horizontal pipework between the inlet and outlet has been minimised to enhance system efficiency.

The proposed solutions represent a practical and compliant approach to overcoming the access limitations of the site, safeguarding the safety of occupants and facilitating effective firefighting operations.