

# **FIRE ENGINEERING**

## **LONDON PLAN POLICY - PLANNING FIRE STATEMENT**

20-24A POPE'S ROAD, BRIXTON, LONDON

Ref – F10920

Version – 01  
Status – Issue

Date: 17 12 2021

## INTRODUCTION

This document has been developed with the intention of addressing the requirements listed under Policy D12 of the London Plan. Additionally, this document will make reference to Policy D5 of the London Plan, insofar as applicable to fire safety requirements.

This document is only intended to support the planning submission for the proposed scheme. This document aims to provide a summary of the key fire safety provisions expected to be incorporated as part of the scheme, to a level of detail which can be reasonably achieved at concept design stage.

This document does not represent a fire safety strategy for the scheme, nor is it intended to support the detailed design, construction or handover stages of the project. This document is not expected to be used as a design document for Building Control review and approval, or as part of the statutory consultation process with the Fire Service as part of The Building Regulations 2010 approvals process.

Application information	
1. Site address line 1	20-24A Pope's Road
Site address line 2	
Site address line 3	
Town	Brixton
County	London
Site postcode (optional)	
2. Description of proposed development including any change of use (as stated on the application form):	<p>Demolition of existing building and erection of a 22-storey building (B2, B1, G+19). The building will include flexible A1/A3/B1/D1/D2 uses at basement, ground and first floor, restaurant use (A3) at floor 8 and B1 accommodation on floors 2 to 19, with plant enclosure at roof level, and associated cycle parking, servicing and all necessary enabling works.</p> <p>The taller of the two blocks (the west block) will have a topmost storey height (ground to finished floor level of the topmost occupied floor – level 19) of approximately 77.8m. The second block (the east block) will have a topmost storey height (ground to finished floor level of the topmost occupied floor – level 8) of approximately 32.4m. The two blocks will be in an adjoined condition up to level 4.</p> <p>The total depth of the basement floors (measured to finished floor level of B2) will be approximately 7.8m.</p> <p>The west block will be served by 2 firefighting stairs (Stairs 1 and 2). The two stairs will serve all levels of the block, including basement (B1 and B2). The roof will only be served by Stair 2.</p> <p>The east block will be served by 2 firefighting stairs (Stairs 3 and 4). The two stairs will serve all above ground levels of the block. Stair 3 (the west core of the block) will also extend down to serve level B2.</p> <p>The proposals discussed herein refer to the fire safety elements associated with the shell and core design of the scheme. The shell and core design will be subject to detailed design development and further review by the design team. All fit-out arrangements shall be subject to further development and review as appropriate.</p>
3. Name of person completing the fire statement (as section 1.5.), relevant qualifications and experience.	<p>Marios Alexandrou – MEng (Hons), MSc, CEng, MIFireE, GIStructE Principal Fire Engineer – Clarke Banks (Fire Engineering) Limited</p> <p>Masters Degree (Honours) in Civil and Structural Engineering from the University of Sheffield (UK) – 1st Class - MEng (Hons) – 2014 Masters Degree in Fire &amp; Explosion Engineering from the University of Leeds (UK) – Distinction - MSc – 2018</p> <p>Chartered Engineer registered with the Engineering Council – CEng - 2021</p>

	<p>Full Member of the Institution of Fire Engineers – (MIFireE) - 2021          Graduate Member of the Institution of Structural Engineers – (IStructE) - 2015</p> <p>My career in fire engineering started in September 2014 when I joined a specialist fire consultancy. During the first 5 years of my career, I worked on multiple projects (mainly UK based) of various scales and types and on different design or construction stages. My technical involvement in these projects included the delivery of fire strategy reports, CFD and / or FEA analyses, Field of Application reports for various fire resisting products or systems and other technical reports and assessments. In 2019 I joined a multi-disciplinary and multi-national company where my project type experience broadened both in terms of project nature and size as well as project location. I worked on prestigious and iconic projects around the world including mega and giga masterplans. I collaborated with multi-national design teams including multiple disciplines. I have been involved at all levels of project delivery including the consultation stages and consulted with local statutory bodies in and out of the UK. I also participated in the development of UK standards / codes of practice and guidance documents as a member of a specialist BSI committee and a member of an SCA (Smoke Control Association) working group.</p>
<p>4. State what, if any, consultation has been undertaken on issues relating to the fire safety of the development; and what account has been taken of this.</p>	<p>No consultation has been undertaken up to this point with any statutory body such as the local fire service or the building safety regulator / local authority.</p> <p>A request for information has been made to the London Fire Brigade Water Team via email on 13 12 2021, with a response received on 14 12 2021.</p>

5. Site layout plan with block numbering as per building schedule referred to in Section 6.  
(consistent with other plans drawings and information submitted in connection with the application)

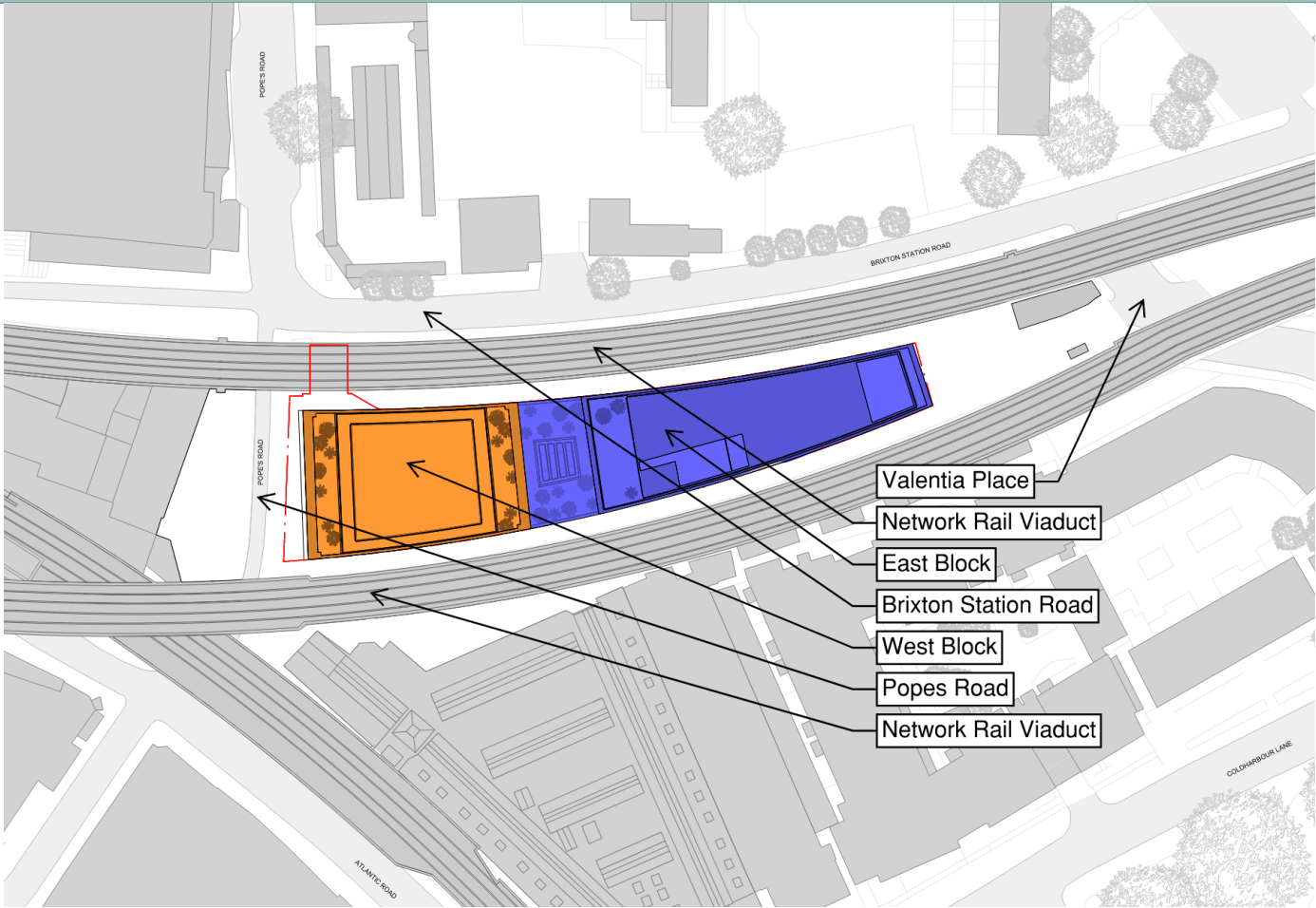


Figure 1 : Site Location Plan

The principles, concepts and approach relating to fire safety that have been applied to the development

6. Building schedule

Site information				Building information			Resident safety information		
a) block no. as per site layout plan above	b) • block height (m) • number of storeys excluding basements • number of storeys including basements	c) proposed use (one per line)	d) location of use within block by floor level	e) standards relating to fire safety / approach applied	f) balconies	g) external wall systems	h) approach to evacuation	i) automatic suppression	j) accessible housing provided
West Block	<ul style="list-style-type: none"> <li>• 83.4m (to roof level);</li> <li>• 77.8m (to topmost storey L19 finished floor level);</li> <li>• 20 storeys excluding basements (G+19)</li> <li>• 22 storeys including basements (B2, B1, G+19)</li> </ul>	service area  (plant rooms)	B2	BS9999	no balconies	N/A  (not applicable to basement levels)	simultaneous	yes-commercial sprinklers, full (BS EN 12845)	N/A non resi
		service area  (cycle stores, changing areas)	B1	BS9999	no balconies	N/A  (not applicable to basement levels)	simultaneous		N/A non resi
		shop  (flexible retail units)	G	BS9999	no balconies	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased		N/A non resi
		service area  (plant rooms, fire control room)	G	BS9999	no balconies	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased		N/A non resi

		office, research and development  (office lobbies)	G	BS9999	no balconies	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased		N/A non resi
		office, research and development  (open-plan office areas)	1-19	BS9999	balconies-worse than Class A2-s1, d0	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased		N/A non resi
		service area  (plant room)	20 (Roof)	BS9999	no balconies	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased		N/A non resi
East Block	<ul style="list-style-type: none"> <li>• 36.3m (to roof level);</li> <li>• 32.4m (to topmost storey L08 finished floor level);</li> <li>• 9 storeys excluding basements (G+8)</li> </ul>	service area  (plant rooms)	B2	BS9999	no balconies	N/A  (Not applicable to basement levels)	simultaneous	yes-commercial sprinklers, full  (BS EN 12845)	N/A non resi
		shop  (flexible retail units)	G, 1	BS9999	no balconies	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased		N/A non resi

<ul style="list-style-type: none"> <li>10 storeys including basements (B2, G+8)</li> </ul>	service area (plant rooms, fire control room)	G	BS9999	no balconies	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased	N/A non resi
	office, research and development  (open-plan office areas)	1 - 7	BS9999	no balconies	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased	N/A non resi
	restaurant, cafe, hot food take-away, drinking establishment	8	BS9999	balconies-worse than Class A2-s1, d0	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased	N/A non resi
	service area (plant room)	8	BS9999	no balconies	Worse than Class A2-s1, d0  (Class A2-s3, d2 or better)	phased	N/A non resi



**7. Explain any specific technical complexities in terms of fire safety (for example green walls) and / or departures from information in building schedule above**

- The design of both blocks will be based on the guidance presented in BS9999. The design is intended to support a phased evacuation strategy for the building.
- As the blocks include topmost storey heights in excess of 18m, any insulation products, filler materials (such as the core materials of metal composite panels, sandwich panels and window spandrel panels but not including gaskets, sealants and similar) etc. used in the construction of external walls shall achieve Class A2-s3, d2 or better. The surfaces of external walls should achieve a reaction to fire performance of B-s3,d2 or better, as a minimum. This is in line with contemporary guidance.
- Neither of the two blocks will classify as relevant buildings as per Regulation 7, as the blocks do not include any residential accommodation. However, a recommendation has been made to the design team of considering the use of Regulation 7-compliant external wall construction, as the most straightforward way of meeting the functional requirements of the Building Regulations.
- The development will include green roof terrace areas. The designs will ensure compliance with minimum requirements under Part B4, Schedule 1, of The Building Regulations 2010 are also achieved. Green roof contemporary guidance will also be employed in the detailed design of the scheme.
- The development will form part of a constrained urban site, located in close proximity to railway viaducts to the north and south. A recommendation has been made for the design team to undertake discussions with Network Rail in order to establish any asset protection requirements which may be applicable to the viaducts, in the event of external fire spread. This is carried out with a view to optimise the amount of external wall fire-rated areas which may be needed to prevent fire spread across the site boundaries.
- The development will include an atrium within the central zone between the blocks, spanning the ground to fourth floors, with an overall height of approximately 21m. The detailed package of fire safety provisions for the atrium shall be confirmed as the design progresses, however the shell and core design has proposed a number of features that will support the final design approach, as follows: automatic fire suppression throughout, a public alarm and voice alarm system throughout, Means of Escape (i.e. stair shafts) away from the atrium areas. It is expected that the package of requirements will be fully reviewed upon fit-out to ensure that all the relevant requirements are followed.
- The proposals for the west block will also include a number of atria on the upper floors (L15-L19). The detailed requirements for these atria shall be developed as design progresses, however any final proposals are expected to be supported by the allowances made by the shell and core design.

**8. Explain how any issues which might affect the fire safety of the development have been addressed**

- A simultaneous evacuation approach has been proposed for all basement levels, in line with contemporary guidance;
- Elsewhere, a phased evacuation approach has been proposed, which will be supported by the following:
  - All floors will be designed as compartment floors;
  - All lift shafts will be provided with lobby protection;
  - The stair capacities have been designed to accommodate the relevant number of storeys expected to evacuate concurrently based on the phased evacuation strategy; and
  - The evacuation strategy will be supported by a Category L1 detection and alarm system (BS 5839-1), a Category V1 voice alarm / public address system (BS 5839-8) and emergency voice communication systems (BS 5839-9).
- The lower level basement (B2) will include an extended single direction travel distance of approximately 35m. This is proposed to be supported by the enhanced detection and alarm system, the provision of automatic fire suppression, as well as through the provision of a protected corridor serving the plant rooms where the extended travel distance occurs.

- Given the height of the scheme, both blocks will be designed with a structural fire resistance of 120 minutes.
- The entirety of the scheme will be covered by a commercial-grade fire suppression system, designed, installed, commissioned and maintained in line with BS EN 12845.
- Considering the height of the scheme, redundancy in firefighting access provisions will be achieved by providing each block with 2 firefighting shafts, each including a firefighting stair, firefighting lift, ventilated firefighting lobbies and wet fire mains.
- Fire service vehicles are expected to be provided with access around the building perimeter (see Figure 4 of this report), using the existing site roads. This will allow suitable personnel access to the firefighting cores.
- The basement levels will be provided with a mechanical smoke clearance system designed to achieve 10 air changes per hour, supported by the automatic fire suppression system.

**9. Explain how any policies relating to fire safety in relevant local development documents have been taken into account.**

LONDON PLAN POLICY D5(B5) – EVACUATION LIFTS

REQUIREMENT

The policy states that proposals should "...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".

PROPOSAL

Given the proximity of the stair cores, and the fact that the secondary lift core in each block is mainly intended to support firefighter access, it is only proposed to provided evacuation lift as part of the main lift banks in either block. As such, it is proposed that 2 evacuation lifts will be incorporated as part of the development, one per block, as follows:

- The lift bank corresponding to firefighting Stair 2 (West Block) will include one evacuation lift (presented in Figure 2 of this report, although the exact location of the lift as part of the bank is still subject to final confirmation), which will extend from B2 to L19, and discharge via a protected discharge route all the way to outside at ground floor; and
- The lift bank corresponding to firefighting Stair 4 (East Block) will include one evacuation lift (presented in Figure 2 of this report, also subject to confirmation), which will extend from G to L08, and discharge via a protected discharge route all the way to outside at ground floor.

Evacuation lifts shall be designed in accordance with BS EN 81-70:2021.

The evacuation lifts will be automatic and be able to be used by any occupant within the building should this be required. Firefighting personnel and building management staff (if available) will be able to override this process.

The management plan, and the level of reliance of the evacuation lift operation on management staff input, should be reviewed against the proposed staffing levels for the scheme.

## LONDON PLAN POLICY D12(B) – FIRE STATEMENTS

### REQUIREMENT

The policy states that:

“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 positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these
- 5) how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building
- 6) ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.”

### PROPOSAL

- 1) The building structure is expected to be formed by either reinforced concrete or steel frame construction. The external wall construction will comply with the minimum fire safety requirements listed in contemporary guidance, both in terms of filler materials (Class A2-s3, d2) and the performance of external cladding surfaces (Class B-s3, d2).
- 2) The Means of Escape provisions are outlined below and summarised in Figure 2 of this report:
  - a. The development will incorporate a phased evacuation approach, with the exception of basement levels, where a simultaneous evacuation strategy will be employed);
  - b. Ground floor areas will be provided with a number of exits directly to outside;
  - c. Basement levels occupants will be provided with escape via the protected lobbies to Stairs 1, 2 and 3. The B1 level, which has a reduced floorplate, will only be served by Stairs 1 and 2;
  - d. Above-ground level occupants on floors where the two blocks are connected (L01 to L04 inclusively) will be provided with escape via Stairs 1, 2, 3 and 4;
  - e. Above-ground level occupants (above L05) will be provided with escape via two lobbied stair cores in either block (Stairs 1 and 2 for the west block, and Stairs 3 and 4 for the east block);
  - f. Users that are disabled or require level access will be provided with diverse Means of Escape in either block as follows: Primary escape via the evacuation lifts provided in each block (next to Stair 2 in the west block and next to Stair 4 in the east block) and secondary escape into the protected firefighting lobbies serving the alternative stair cores

in either block (Stair 1 for the west block and Stair 3 for the east block). The secondary escape routes will be provided with disabled refuge points fitted with emergency voice communication equipment, connected to the fire control centre at ground floor.



Figure 2: Summary of key Means of Escape provisions

- 3) The features which reduce the risk to life are outlined below:
- a. Fire detection and alarm systems: Category L1 detection and alarm systems (BS 5839-1), Category V1 voice alarm systems (BS 5839-8) and emergency voice communication systems (BS 5839-9). The scheme will be provided with a fire control centre, located on the ground floor areas of the east block;
  - b. Passive fire safety measures: The compartmentation strategy will be developed to BS9999 and will be commensurate with the proposed evacuation strategy, scale and expected use for the scheme. Openings within passive fire compartmentation elements will be fitted with suitably rated doors, fire dampers, or active fire barriers.
  - c. Active fire safety measures: The whole of the development will be covered by a BS EN 12845 automatic fire suppression system. The firefighting lobbies of Stairs 1, 2, 3 and 4 will be mechanically ventilated, with proposals to be substantiated by suitable computational fluid dynamics analysis. The firefighting stair cores will be provided with 1.0m<sup>2</sup> automatically openable vents, sited at high level above the stair core. The atria provided within the building may require either natural or mechanical smoke ventilation, subject to design development. The basement levels will be covered by a mechanical smoke clearance system, designed based on BS9999 requirements. The 4 firefighting lifts serving the development will be designed based on BS EN 81-72. The 2 evacuation lifts will be designed based on BS EN 81-70. The wet rising mains and associated equipment should be designed based on the guidance of BS 9990.

- d. Maintenance and monitoring: All of the aforementioned systems are expected to be regularly monitored and maintained in line with manufacturer's requirements. The maintenance and monitoring operations for all such systems must be adequately recorded.
- 4) The access for fire service personnel and equipment are discussed in detail in Sections 10-14 of this statement (below).
- 5) The access for fire service vehicles is discussed in detail in Sections 10-14 of this statement (below).
- 6) Ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety / protection measures:
  - a. The continuity and development of the Golden Thread is the responsibility of the whole design team with the Duty holder taking the lead. Clarke Banks (Fire Engineering) will continue to ensure the Golden Thread of information is kept in line with direction and leadership coming from the Duty holder. Clarke Banks (Fire Engineering) aim to support the appointed Duty holder in collating the Golden Thread of building information, insofar as applicable and relevant to the strategic fire safety design requirements.
  - b. The design team is committed to incorporating all information that this statement has discussed, including any further developments which may arise as the design progresses, into the main fire strategy. This information shall be made available to any building owner throughout the life span of the building. This will culminate in a package of information being handed over to the building owner as per Regulation 38 of The Building Regulations 2010.
  - c. This will ensure that the information to understand the building, including any steps needed to keep both the building and people safe throughout its lifespan are readily available.

## Emergency road vehicle access and water supplies for firefighting purposes

### 10. Explanation of fire service site plan(s) provided in Section 14, including what guidance documents have informed the proposed arrangements for fire service access and facilities?

- The Fire Service access provisions are based on the requirements listed in BS9999;
- The proposed site is adjoined by Pope's Road to the west. To the north and south, the site is bounded by 2 existing railway viaducts;
- Access to the above-ground areas in both blocks will be provided via the 2 firefighting shafts provided for each block. Stairs 1 and 2 will serve the west block, while Stairs 3 and 4 will serve the east block. All stairs cores will form commercial type firefighting shafts, with each including a firefighting stair, a ventilated firefighting lobby, a wet rising main within the firefighting lobby, along with a firefighting lift;
- Each of the firefighting shafts will be provided with rising mains designed in line with BS 9990. The rising mains corresponding to Cores 1 and 2 (west block) will be designed as wet rising mains, considering that these mains will serve areas located more than 50m above the adjoining ground. The mains in Cores 3 and 4 will also be designed as wet rising mains as the equipment and plant will already have been included for the west block. Each fire main will include a top up valve on the façade of the building adjoining the stair access point, within 18m from, and a clear line of sight to, the Fire Service vehicle parking location;
- Falling mains in Cores 1, 2, and 3 are also expected to be extended to serve the basement levels;
- All internal areas will be accessible within 60m along a route suitable for laying hose as measured from a wet rising main outlet;
- Although the blocks will not include residential accommodation, it is expected that special signage will be provided to all four firefighting stair cores to enable the Fire Service to conduct operations effectively. Wayfinding signage in accordance with the amended Approved Document B Volumes 1 & 2:2020 will be provided in support of firefighting operations.

### 11. Emergency road vehicle access - can emergency road vehicles access the site entrances indicated on the site plan?

- Yes. Due care will be given to ensure that the vehicle access routes (consisting of Pope's Road and the adjoining private roads at the north and south of the façade on site) achieve the requirements for a pump appliance as shown in Guidance Note 29 (London Fire Brigade). This should be confirmed by carrying out a tracking assessment and supported with detailed drawings at a later date.
- Any access / security measures in and around the site (especially any barriers or bollards preventing vehicle access) will need to be by-passable by the Fire Service.

### 12. Siting of fire appliances

- Fire Service vehicle access will be provided via Pope's Road as well as the new private roads the north and south of the building on site. This arrangement is shown indicatively in Figure 4 of this report;
- This will allow fire appliances to park within 18m from, and have a clear line of sight to, the wet rising main inlet points for all cores. Immediate access into the firefighting lobbies or stairs will be provided next to the wet rising main inlet points (shown as red arrows in Figure 4 of this report);
- The vehicle access route suitability for Fire Service appliances (on the aforementioned public roads) should be confirmed via tracking exercises at a later date.

13. Suitability of water supply for the scale of development proposed

- Public hydrants (existing) should be provided within 90m of all wet rising main top up valves, or additional private hydrants should be provided. A request for information has been made to the London Fire Brigade Water Team via email on 13 12 2021.
- Based on information received from the London Brigade Water team via email on 14 12 2021, there are 3no. existing functional hydrants along Brixton Station Road, north of the site. These are shown in Figure 3 of this report.

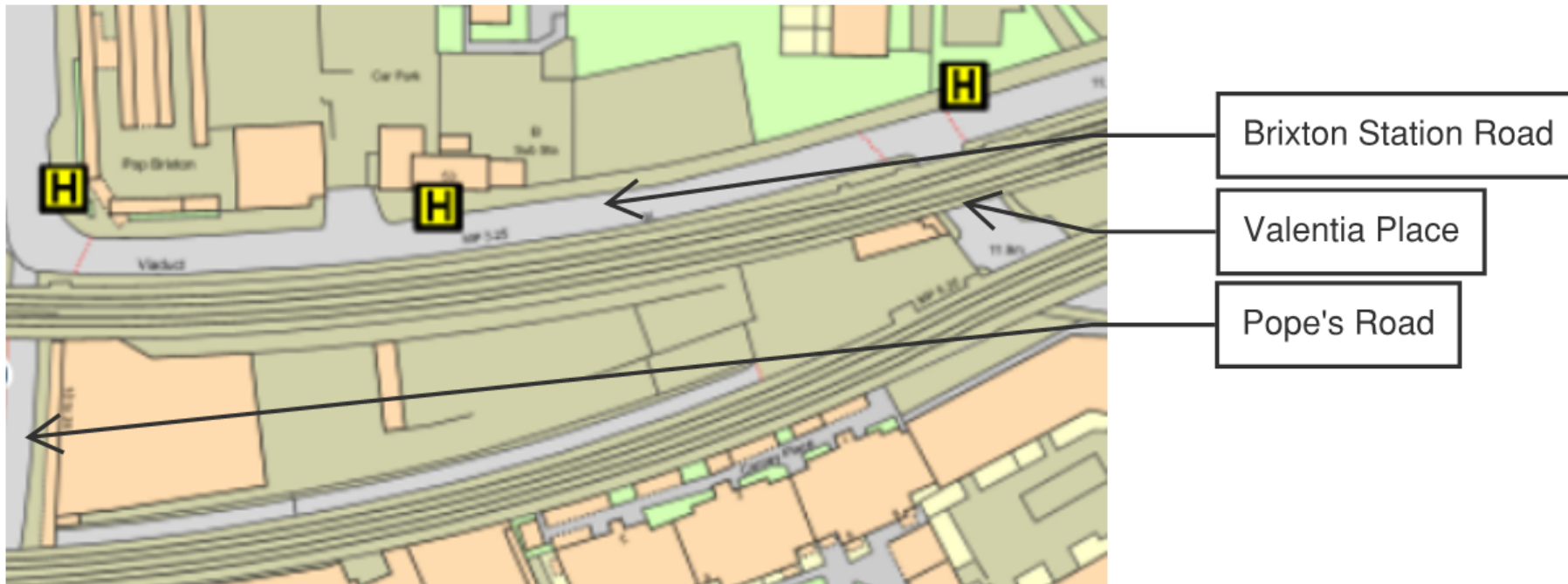


Figure 3: Existing Hydrant Locations

a) Nature of water supply:

- Hydrant – public

b) Does the proposed development rely on existing hydrants and if so are they currently usable / operable?

Yes

- Currently awaiting a response from London Fire Brigade Water Team.




14. Fire service site plan

Fire service site plan is: inserted in the form – see below.



Figure 4: Indicative Fire Service Access Routes



Fire statement completed by	
Signature	  Marios Alexandrou  MEng (Hons), MSc, CEng, MIFireE, GIStructE
Date	17/12/2021