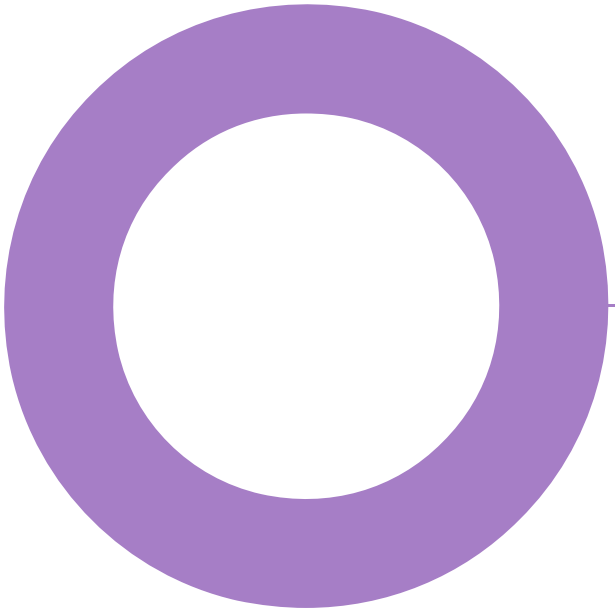
HOARE LEA

Stag Brewery.
London.
Reselton.

FIRE ENGINEERING

FIRE STRATEGY PLANNING STATEMENT

REVISION 10 – 02 NOVEMBER 2023



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	21/05/2020	Fire strategy statement for planning	ES	MH	MH
01	29/05/2020	Fire strategy statement for planning	ES	MH	MH
02	14/07/2020	Minor updates to introduction wording	ES	MH	MH
03	01/02/2022	Updates to incorporate changes to scheme	ES	JA	MH
04	03/02/2022	Minor updates incorporating comments	ES	BR	MH
05	17/02/2022	Minor updates incorporating comments and updated masterplan layout	ES	IDL	MH
06	02/03/2022	Minor updates incorporating changes to Blocks 2, 18 & 19	ES	MH	MH
07	24/03/2022	Update to FSA figures to show parking positions	ES	MH	MH
08	20/07/2022	Update following comments from the HSE	ES	MH	MH
09	28/07/2022	Update following design team comments	ES	JA	MH
10	02/11/2023	Update following two stair redesign	ES	BR	MH

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Contents.

1. Introduction

This Fire Strategy Planning Statement has been prepared by Hoare Lea Fire Engineering on behalf of Reselton Properties Limited ("the Applicant") in support of two linked planning applications ("the Applications") for the comprehensive redevelopment of the former Stag Brewery Site in Mortlake ("the Site") within the London Borough of Richmond upon Thames (LBRuT).

1.1 Proposals

The Applications seek planning permission for:

Application A:

"Hybrid application to include the demolition of existing buildings to allow for comprehensive phased redevelopment of the site:

Planning permission is sought in detail for works to the east side of Ship Lane which comprise:

- Demolition of existing buildings (except the Maltings and the façade of the Bottling Plant and former Hotel), walls, associated structures, site clearance and groundworks
- Alterations and extensions to existing buildings and erection of buildings varying in height from 3 to 9 storeys plus a basement of one to two storeys below ground
- Residential apartments
- Flexible use floorspace for:
  - Retail, financial and professional services, café/restaurant and drinking establishment uses
  - Offices
  - Non-residential institutions and community use
  - Boathouse
- Hotel / public house with accommodation
- Cinema
- Offices
- New pedestrian, vehicle and cycle accesses and internal routes, and associated highway works
- Provision of on-site cycle, vehicle and servicing parking at surface and basement level
- Provision of public open space, amenity and play space and landscaping
- Flood defence and towpath works
- Installation of plant and energy equipment

Planning permission is also sought in outline with all matters reserved for works to the west of Ship Lane which comprise:

- The erection of a single storey basement and buildings varying in height from 3 to 8 storeys
- Residential development
- Provision of on-site cycle, vehicle and servicing parking
- Provision of public open space, amenity and play space and landscaping
- New pedestrian, vehicle and cycle accesses and internal routes, and associated highways works"

Application B:

"Detailed planning permission for the erection of a three-storey building to provide a new secondary school with sixth form; sports pitch with floodlighting, external MUGA and play space; and associated external works including landscaping, car and cycle parking, new access routes and other associated works"

Together, Applications A and B described above comprise the 'Proposed Development'.

1.2 Background to Submission

Two applications for planning permission were submitted to the London Borough of Richmond upon Thames ('LBRuT') on 11 March 2022 for the masterplan redevelopment of the Site and are currently pending determination. Consultation with statutory and public consultees has been ongoing throughout this period.

On 19 July 2023 both applications were heard at LBRuT's Planning Committee. The LBRuT's Planning Committee resolved to approve both applications, subject to the provisions set out in the Officer's Report.

On 24 July 2023 the Secretary of State made a statement confirming the Government's intention to mandate second staircases in new residential buildings above 18 metres. This followed consultation on this matter where expert bodies advocated support for this threshold.

1.3 Matters for Substitution

Although no formal transition arrangements or legislation has been announced at this stage, the Applicant has taken the decision to make amendments to the scheme which will allow it to adhere to the forthcoming changes announced on the 24 July 2023 by the Secretary of State in relation to the Government's intention to mandate second staircases in new residential buildings above 18 metres.

In summary the proposed changes to the scheme relate to Application A only and comprise changes to

- Building 1 (Cinema): Three levels of office changed to residential use (creating 17 new residential units) and decrease in building height by 2.6m. The cinema floor plans remain relatively similar with changes made to accommodate the residential core, refuse and cycle stores, risers and extending the cinema café. The third floor has changed from glazed to bronze cladding to suit the change of use, a cycle store has been added to ground floor and recessed balconies added to accommodate the introduced residential use in this building;
- Building 2: Internal layout changes only (including removal of top floor of duplex) – increase in 1 residential unit;
- Building 4 (The Maltings): Removal of residential floorspace on floor levels 6 and 7 and internal re-configuration to include only one core with two stairs and two lifts – overall decrease in 1 residential unit. Minor elevation changes to the Maltings to re-position the double height windows and change in the layout of the ground floor flexible use areas;
- Building 7: Internal layout changes only (including removal of top floor of duplex) – no change in residential unit numbers;
- Building 8: Re-arrangement of internal layout to accommodate core changes (no change in residential unit mix). Mansard roof stepped out around the southern staircase to accommodate dual staircases to the 8th floor;
- Building 10: Floor to ceiling heights changed very slightly to bring building under 18m;
- Building 11: Internal layout changes only (third lift and second stair added affecting number of habitable rooms) – no change in residential unit numbers;
- Building 12: Internal layout changes only (third lift and second stair added affecting number of habitable rooms) – no change in residential unit numbers;
- Buildings 15 and 17: These buildings are in Development Area 2 and are only in outline. Changes will be internal only;
- Overall increase in residential floorspace by +1,722 sqm GIA and increase in 7 private residential units (increase in 17 residential units in Development Area 1 and decrease in 10 residential units in Development Area 2). No change in affordable residential unit numbers;
- Decrease in office floorspace by -2,571 sqm GIA, increase in cinema floorspace (+149 sqm GIA), and increase in flexible use (+125 sqm GIA);
- Internal re-configuration of the basements to accommodate second stairwells, changes to waste stores, partitions and enlarged sprinkler tanks to satisfy updated electric vehicle fire regulations resulting in a reduction of 15 car parking spaces across the Development;
- Fire strategy amended, resulting in two stairs to all residential buildings over 18m in height and re-introducing connections to the basement car park for the two stair buildings. The basement car park fire strategy has also been updated to provide fire safety enhancements to account for the introduction of EV charging in the basement car park;

- Waste strategy amended, to return the refuse and recycling stores for Buildings 2, 7, 8, 11 and 12 to the basement level. For these buildings, holding stores at ground level have been provided in Buildings 3, 8 and 12 to support the collection process. Buildings 1, 3, 4, 5, 6, 9, 10 and all buildings in Development Area 2 maintain refuse and recycling stores at ground level; and
- Landscaping updates associated with changes to ground floor entrances for Blocks 8, 11 and 12, with amendments to the length of private gardens, additional planting and steps moved.

1.4 Application History

The applications were submitted in March 22. In May 2022 comments from the HSE were received with the following main comments and concerns::

- Communication between the basement carparks and the above ground levels through the single residential stair shafts.
- Communication between the basement carparks and the above ground levels through the lift shafts
- Refuse stores accessed internally

Following on from receipt of these comments, a comprehensive review of the design was undertaken to ensure that the HSE concerns were addressed. The main changes to the design involved:

- Full internal separation between the basement stairs and above ground stairs with independent egress routes directly to external.
- Separate lift shafts serving the basement and above ground levels.
- Refuge stores relocated to ground floor level such that they are accessed from external only.

A full list of the comments from the HSE and a summary of how the fire engineering design has addressed these comments is provided within the document MEM-1920618-02-ES-20220727-HSE Responses-Rev03 which was issued with the updated application.

Following this on 19 July 2023 both applications were heard at LBRuT's Planning Committee. The LBRuT's Planning Committee resolved to approve both applications, subject to the provisions set out in the Officer's Report.

On 24 July 2023 the Secretary of State made a statement confirming the Government's intention to mandate second staircases in new residential buildings above 18 metres. As such the design of the development was updated to incorporate two stairs into all residential buildings above 18m in height (when measured from the lowest adjacent ground to the top occupied storey).

2. The London Plan Policy D12 (Fire Safety).

The London Plan – Policy D12 states that in the interests of fire safety and to ensure the safety of all building users, all development proposals must achieve the highest standards of fire safety and ensure that they:

1. Identify suitably positioned unobstructed outside space:
    a. For fire appliances to be positioned on
    b. Appropriate for use as an evacuation assembly point
2. Are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems and passive and active fire safety measures;
3. Are constructed in an appropriate way to minimise the risk of fire spread;
4. Provide suitable and convenient means of escape, and associated evacuation strategy for all building users;
5. Develop a robust strategy for evacuation which can be periodically updated and published, which all building users can have confidence in; and
6. Provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.

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 the 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 site to enable fire appliances to gain access to the building; and
6. Ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures

These items will be addressed in the following sections for the Stag Brewery development.

3. Competency statement.

All Hoare Lea design projects are headed by highly trained engineers, supported by a team of chartered engineers across the UK, with proven experience on a wide range of fire safety consultancy projects.

Our staff have appropriate expertise and experience of fire safety design on a wide range of complex buildings, not only in the UK, but also world-wide. Whilst most of our work is conducted to satisfy safety regulations within the UK (e.g. Building Regulations and associated legislation), our staff have been responsible for developing fire safety strategies based on the National Fire Protection Association (NFPA) standards and other international codes.

This statement has been produced, reviewed and approved by the following key individuals. The design and development of the fire safety strategy will be undertaken by the same individuals.

- Miller Hannah BEng (Hons), CEng, MIFireE – Director
- Brad Rockell BSc (Hons) CBuildE MCABE – Senior Associate
- Eric Swainson MEng (Hons), AIFireE – Associate

4. Development description.

The full development consists of a total of twenty-three standalone blocks, these are divided into nine mixed use residential blocks with flexible space on the ground level, eleven standalone residential blocks, an office/cinema, a school and a hotel/office. The top occupied storey of each of the blocks is highlighted below in Table 1, the height of the top occupied storey has been provided by Squire & Partner Architects.

Table 1: Building heights

Block No.	Use	No. of storeys (including ground)	Height of top occupied storey (m) Note 1
1	Cinema/office	4	13.3
2	Residential with flexible space at ground	8	24.1
3	Residential	6	17.5
4	Residential with flexible space at ground	6	19.2
5	Hotel and office	3	8.6
6	Residential with flexible space at ground, including energy plant	5	15.1
7		8	24.1
8		9	27.4
9		5	15.7
10		6	17.95
11		8	24.1
12		8	24.1
13	Residential	6	17.95
14		6	17.95
15		8	27.0
16		6	17.95
17		7	23.6
18		6	17.95
19		4	13.0
20		3	9.4
21		3	9.4
n/a	School	3	<18

Note 1: For blocks 13-21 are currently designed as outline only and do not yet have set floor levels. As such the height of the top occupied storey has been assumed based on 3m below the parapet height provided by Squire & Partner Architects. Buildings 13, 14, 16 and 18 are currently proposed to be designed to be under 18m in height (to the top occupied storey), although as it is noted that they are close to the 18m. As such if the final top storey height exceeds this threshold they will be provided with firefighting shafts and a minimum of two stairs serving all residential levels.

Figure 1 gives an overview of the block numbers corresponding to those within Table 1 above.

Figure 1: Proposed Stag Brewery Site Numbering Plan.

5. Fire safety overview.

5.1 Building construction

The exact construction method has not been defined at the time of writing this fire strategy planning statement but it will consist of traditional construction.

The buildings will be constructed with concrete cores and the fire resisting partitions between apartments and common corridors will be provided via fire resisting plasterboard panels.

To limit the spread of fire within the buildings, all wall and ceiling linings will satisfy the appropriate classification stated within BS 9991:2015, BS 9999:2017 and ADB Volume 2:2019 for internal linings in the residential, commercial and hotel areas respectively.

The RIBA Stage 2 fire safety strategy will include a space separation analysis to establish the necessary boundary distance around each building and whether any fire protection to the external façade is required. At this stage, no significant risk of spread of fire between buildings has currently been identified; however, detailed analysis will be provided during the RIBA Stage 2 design stage and the appropriate fire resisting construction will be provided.

In accordance with Regulation 7(2) of the Building Regulations, each residential block which has a storey height in excess of 18m above the lowest adjacent external ground level (Blocks 2, 4, 7, 8, 11, 12, 15 and 17), the external wall construction, and specified attachments including balconies, solar shading or solar panels, will achieve European Classification A2-s1, d0 or Class A1. Where multiple blocks are connected by a shared basement carpark or podium and one of those blocks has a storey height in excess of 18m all connected blocks should be designed to meet the requirements of Regulation 7(2). There are two carparks proposed for the scheme and as such in addition to those blocks described above Blocks 3, 6, 10, 13 and 16 as they connect to blocks over 18m via the carpark, it should be noted that as these blocks are designed with single stairs they will not have internal connections to the carpark but rather escape routes from the carpark (or the ramp for building 10) pass through the envelope of the building.

For building 1, 9, 14, 18 and 19 the uppermost storey of the building is in excess of 11m but not more than 18m in height and, therefore, either the external walls should meet the performance criteria described in BRE report BR 135 or satisfy the following:

- any insulation product, filler material (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 an external wall should be class A2-s1, d0 or better,
  Note: This restriction does not apply to certain masonry cavity wall construction as described in Approved Document B.
- the external wall surface should achieve class A2-s1, d0 or better for surface spread of flame classification, and
- cavity barriers in any external wall cavity are required in accordance with the Approved Document.
- Where balconies are provided, these should only contain materials achieving class A1 or A2-s1, d0, unless with the exception of except for any of the following.
  - Cavity trays when used between two leaves of masonry.
  - Intumescent and fire-stopping materials where the inclusion of the materials is necessary to meet the requirements of Part B of Schedule 1 to the Building Regulations 2010.
  - Membranes.
  - Seals, gaskets, fixings, sealants and backer rods.
  - Thermal break materials where the inclusion of the materials is necessary to meet the thermal bridging requirements of Part L of Schedule 1 to the Building Regulations 2010.
  - Any material achieving class A1f or A2f-s1 when it forms the top horizontal floor layer of a balcony and is provided with an imperforate substrate under it which extends to the full size of the class A1f or A2f-s1 material.
  - Electrical installations.

– Fibre optic cables.

The hotel/office building does not have a storey that exceeds 18m in height and, therefore, either the external walls should satisfy the performance criteria described in BRE report BR 135 or the external wall surface should be in accordance with Table 12.1 of Approved Document B Volume 2 for surface spread of flame classification, and cavity barriers in any external wall cavity are required in accordance with Section 9 of the Approved Document.

Note: In practice, it may be necessary for external surfaces to achieve a Class B-s3, d2 or better (European Classification) surface spread of flame classification to avoid the walls contributing to the space separation (unprotected areas) calculations.

Full reference should made be to the guidance provided in Approved Document B regarding recommendations for external walls.

The school building does not have a storey that exceeds 18m in height and, therefore, either the external walls should satisfy the performance criteria described in BRE report BR 135 or the external wall surface should be in accordance with Table 13 of BB 100 for surface spread of flame classification, and cavity barriers in any external wall cavity are required in accordance with Section 7.2.4.1 of BB 100.

Note: In practice, it may be necessary for external surfaces to achieve a Class B-s3, d2 or better (European Classification) surface spread of flame classification to avoid the walls contributing to the space separation (unprotected areas) calculations.

Note: With regards to surface spread of flame, care should be taken when providing advice to the client, noting that the requirements of Table 13 of BB 100 apply based on the wall height and not the storey height.

In addition, for property protection purposes, combustible cladding should be avoided at ground floor level.

Full reference should be made to the guidance provided in BB 100 regarding recommendations for external walls.

5.1.1 Construction, design and management regulations

Design projects undertaken in the UK are subject to the requirements of the Construction (Design and Management) Regulations 2015 (CDM Regulations), the objective of which is to ensure that health and safety issues are properly considered during a project's design and development so that the risk of harm to those who have to construct, use and maintain the building is reduced.

As a designer, in accordance with Regulation 9 of the CDM regulations, Hoare Lea have taken into account the general principles of prevention in the preparation of this report and where reasonably practicable, eliminate, minimise and/or control foreseeable hazards associated with the design. Where elimination is not reasonably practicable, Hoare Lea will be required to provide 'pre-construction' information in respect of any significant and/or unusual project-specific hazards that remain.

5.2 Means of escape provisions

It is proposed to adopt a 'stay put' evacuation strategy for the residential floors of each of the blocks. That is, only the occupants of the apartment of fire origin will evacuate on activation of the fire detection and alarm system. The occupants of other apartments will remain in place, protected by a high level of compartmentation, unless they choose to escape or are instructed otherwise by the fire and rescue service. The residential amenity spaces and flexible spaces will adopt a simultaneous evacuation strategy.

The cinema, hotel/office and school areas will operate a simultaneous evacuation strategy. That is, upon activation of the fire detection and alarm system, all occupants in the building (or part of the building for the case of the cinema) will evacuate immediately and simultaneously.

5.2.1 Residential

The residential buildings under 18m in height are proposed to be designed with a single stair serving the residential levels (Buildings 1, 3, 6, 9, 10, 13, 14, 16, 18 and 19). The buildings over 18m will be provided with two stairs (2, 4, 7, 8, 11, 12, 15 and 17). Building 5 is under 18m but designed as a hotel and is provided with two stairs, building 20 and 21 are made up of individual dwellings.

The apartment layouts are proposed to be a mix of open plan and protected entrance hall design. and the open plan apartments can be designed based on the following principles.

- Open-plan flats do not have a protected entrance hall but have bedrooms that are inner rooms and are accessed directly from the living room or kitchen. In accordance with BS 9991:2015, open-plan apartments should be provided with a Grade D2 Category LD1 fire detection and alarm system in accordance with BS 5839-6:2019 and a residential sprinkler system designed to BS 9251:2021. The open-plan flats should meet the following recommendations:
  - The size of the open-plan flat should not exceed 16m x 12m if the kitchen is enclosed separately;
  - The size of the open-plan flat should not exceed 8m x 4m if the kitchen is not enclosed;
  - Open-plan flats should be situated on a single level only; and
  - The ceilings should have a minimum height of 2.25m
- However, it is also proposed to have apartments that exceed the maximum size recommended in BS 9991:2015 for an open plan design. A fire engineered solution supported by a Computational Fluid Dynamics (CFD) analysis will be required to justify the apartments layouts. This would need to be discussed and agreed with the Approving Authorities.

All blocks with a top storey over 18m above ground level (2, 4, 7, 8, 11, 12, 15 and 17) will be provided with an evacuation alert system in accordance with BS 8629.

The protected entrance hall apartments will be designed in accordance with Section 9.4 of BS 9991:2015.

Several multi-level apartments are also proposed for the building, these apartments will be designed in accordance with Section 9.5 of BS 9991:2015. Currently some of these duplex apartments are proposed to also be provided with galleries. These gallery levels will be designed in accordance with Section 9.6 of BS 9991.

The final exit from the stairs will lead directly to the outside via a protected passageway to the outside. The protected passageway will be treated as an extension of the stairs provided with the same standard of fire protection (i.e. fire resistance and smoke ventilated lobby protection). The protected passageway will be at least as wide as the stairs and any apartments located off this passageway will be accessed via a smoke ventilated lobby/corridor. If this protected passageway forms a reception area for the residential buildings this reception area will be kept sterile and free from combustibles at all times, with any post boxes provided being fire resisting (equal to the structural fire resistance of the building.

Where flexible spaces are provided at ground level means of escape from these areas will be provided independently from the residential means of escape. There will be no communication between the residential means of escape routes and flexible spaces.

Block 1 is a multi-use building with a cinema on the lower levels and residential on upper levels. There is no communication between the cinema and residential parts of the building and hence they are considered separated parts of the building. The means of escape from the cinema will be simultaneous with the residential accommodation operating on a separate stay put policy.

In single stair buildings, the stairs serving the basement carpark are completely independent from the stairs serving the residential levels with no internal connections. There are no internal connections between the basement carpark stairs and the residential stairs in single stair buildings, this is in line with the recommendations in current guidance.

Where more than one stair is provided to all upper residential levels in a building the stairs will connect with the basement carpark. All stairs serving the basement carpark will be fire separated at ground floor level by fire

resisting walls and doors. In addition all stairs will be separated at basement level from the carpark by fire resisting lobby protection with the lobbies provided with direct smoke ventilation.

The travel distances in some blocks in a single direction in the common corridors will, in most cases be limited to 15m with all residential common corridors proposed to be provided with either a natural or mechanical smoke ventilation system. All of the stairs will be provided with a head of stair AOV with 1.0m^2 free area at the top of their enclosure and all residential apartments will be provided with residential sprinklers. The travel distance where multiple directions of escape are available should be limited to 60m. It is noted that in some blocks the 15m travel distance in a single direction is exceeded,. A fire engineered arrangement will need to be adopted in these blocks consisting of two mechanical smoke ventilation extract shafts, known as a Double Reversible Mechanical Extract (DRME). This system will be justified by means of a CFD analysis at a later stage when the internal corridor layouts are set. This is to be discussed and agreed with the Approving Authorities.

Currently extended travel distances are provided in the dead ends of the following buildings:

- Building 1 (single stair building) travel distances up to 20m;
- Building 3 (single stair building) travel distances up to 18m;
- Building 8 (two stair building) travel distances up to 20m;
- Building 13 (single stair building) travel distances up to 19m;

Building 18 (single stair building) travel distances up to 19m.

It is noted that the HSE raised concerns with proposed extended travel distances and as such a preliminary QDR focusing on the extended travel distances has been carried out and submitted along with this statement [ref: NOTE-1920618-5A-ES-20231102-Stag Brewery Prelim QDR-Rev02]. As the design for the building develops a full QDR can be carried out considering all aspects of the development (not just the extended corridor travel distances).

Furthermore, one lift per core in each block will be provided as a lift with enhanced facilities for evacuation to facilitate the evacuation of mobility impaired occupants and meet the recommendations of Policy D5 (inclusive design) of the London Plan. In order to facilitate the use of the evacuation lift all of the residential stairs should be provided with refuge spaces with minimum dimensions of 900mm x 1400mm outside of clear escape width of the stair. The refuge should be provided with an emergency voice communication (EVC) system, designed and installed in accordance with BS 5839-9:2011 with type B outstations. The management procedures of the evacuation lifts will be developed during the design stage.

In single stair buildings the lifts serving the basement carpark are independent from the lifts serving the residential levels. In these blocks the lifts serving the basement carpark will open into a lobby which is fire separated from the areas in which the lifts serving the above ground levels opens into. For buildings with more than one stair serving all upper levels the lifts serving the basement levels will continue to the above ground levels although these will in all cases open into a smoke ventilated lobby at basement level

There will not be communication between the residential escape routes from the levels above and the escape routes from any flexible space at Ground Level.

As the residential buildings are proposed to operate on a 'stay put' evacuation policy only a single person/family would be evacuating the building at a time. On this basis the occupants of the fire apartment are expected to wait outside of the building and do not need to be assigned a dedicated assembly point. However, it is noted that code guidance does call for an evacuation alert system to be provided to residential buildings over 18m in height as such potential areas for assembly point locations have been highlighted in Figure 2 & Figure 3.

All refuse stores will separated from the building by fire resisting construction and will be accessed from external only.

5.2.2 Hotel/Office

It is recommended that an automatic detection and alarm system is installed to a L1 standard in accordance with BS 5839-1:2017.

Escape travel distance within hotel corridors will be limited to 9m in a single direction and 35m where two directions are available.

As the top occupied storey of the hotel is in excess of 11m all hotel accommodation levels will be served by a minimum of two means of escape stairs.

The means of escape from the hotel will be simultaneous with the office accommodation in the same block.

The final escape route from each stair will lead directly to outside or via fire sterile corridor afforded the same level of fire resistance as the stair itself as described above for the residential final escape routes.

The office areas of the block will be designed as described below (in Section 5.2.3) as the office in Block 1.

Suitable assembly point locations should be selected and managed by the building management. These locations should be positioned such that they don't put building occupants at risk from emergency vehicles attending the scene. It is understood that a staff member is present in the building at all times and, as such, the staff members should be familiar with the location of the assembly point and be able to direct occupants to this location. Areas where potential assembly points could be located are highlighted in yellow in Figure 2 and Figure 3.

5.2.3 Cinema

The cinema will be designed in accordance with BS 9999. The risk profiles given in Table 2 will be assigned for the cinema. The cinema building will be sprinkler protected with a sprinkler system designed in accordance with BS EN 12845 as it is located beneath a residential building over 11m in height. The upper levels of Building 1 (which contains the cinema) are residential and will be provided with a sprinkler system designed to BS 9251.

Table 2: Summary of risk profiles.

Purpose area	Occupancy characteristic	Fire growth rate	Sprinkler protection	Risk profile
Back of house cinema areas	Awake and familiar (A)	Medium (2)	Yes	A1
Cinema	Awake and unfamiliar (B)	Medium (2)	Yes	B1

It is proposed to provide a Category L2 fire detection and alarm system in accordance with BS 5839-1:2017 throughout the cinema. This is to provide an early warning of fire to initiate the evacuation. This is considered to be an enhancement compared to the Manual system that is recommended as a minimum for buildings with a Risk Profile A2.

The maximum recommended travel distances for each area are specified in Table 3, as per BS 9999. The internal layout should take consideration of the recommended travel distances listed below.

Table 3: Maximum recommended travel distances.

Risk profile	Actual travel distances [m]	
	Single direction	Multiple directions
A1	29.9 Note 1	74.7 Note 1
B1	27.6	69

Note:
1. These are the maximum distances specified with considering additional benefits of automatic fire detection, i.e. 15% increase in travel distances.
2. Should the interior layout not be shown, 2/3 of the travel distances should be applied as the maximum direct travel distances.

It is proposed to provide a disabled refuge on all escape routes where level egress to the outside is not available. This can be provided either within the stair or lobby enclosure. The refuge spaces should have the following minimum dimensions: 1400mm by 900mm. The refuge should be provided with an emergency voice communication (EVC) system with a type B outstation, designed and installed in accordance with BS 5839-9:2011.

The cinema building is to be provided with two protected means of escape stairs. One of these will discharge via the cinema foyer in line with Section D.2 of BS 9999. .

Suitable assembly point locations should be selected and managed by the building management. These locations should be positioned such that they don't put building occupants at risk from emergency vehicles attending the scene. It is understood that a staff member is present in the building at all times when the building is occupied and, as such, the staff members should be familiar with the location of the assembly point and be able to direct occupants to this location. Areas where potential assembly points could be located are highlighted in yellow in Figure 2 and Figure 3.

5.2.4 School

It is proposed to provide a Category L2 fire detection and alarm system in accordance with BS 5839-1:2017 throughout the building.

The maximum recommended travel distances for each area are specified in Table 3, as per BB100.

Table 4: Maximum recommended travel distances.

Area	Actual travel distances [m]	
	Single direction	Multiple directions
Areas of special fire hazard Note 1	9	18
Seating in rows	15	32
Other areas	18	45

Note:
1. These are defined as: boiler rooms, storage spaces for fuel or other highly flammable materials, lab spaces, technology rooms with open heat sources, kitchens, oil filled transformer and switchgear rooms and rooms housing fixed internal combustion engines, cloakrooms.
2. Should the interior layout not be shown, 2/3 of the travel distances should be applied as the maximum direct travel distances.

It is understood that the school will be provided with a minimum of two protected means of escape stairs serving every level. These stairs will be provided with a protected lobby separating them from the accommodation on every level. The minimum clear width of the escape stair should be 1100mm, however, this may be increased to increase the number of persons accommodated by the stair.

It is proposed to provide a disabled refuge on all escape routes where level egress to the outside is not available. This can be provided either within the stair or lobby enclosure. The refuge spaces will have the following minimum dimensions: 1400mm by 900mm. Emergency voice communication (EVC) systems will be provided next to the refuge areas as described above for the office accommodation.

The final escape route from each stair will lead directly to outside or via fire sterile corridor afforded the same level of fire resistance as the stair itself as described above for the residential final escape routes.

Suitable assembly point locations should be selected and managed by the building management. These locations should be positioned such that they don't put building occupants at risk from emergency vehicles attending the scene. It is understood that a staff member is present in the building at all times when the building is occupied by students and, as such, the staff members should be familiar with the location of the

assembly point and be able to direct students to these location(s). Areas where potential assembly points could be located are highlighted in blue in Figure 2 and Figure 3.

5.2.5 Carpark

A carpark will be located below ground and connected to blocks 2, 3, 6, 7, 8, 11 and 12. A second carpark will be located below ground and connected to blocks 13, 15, 16 and 17. The carpark ramp is accessed underneath block 10 but the stairs in block 10 do not extend down to the carpark. Single stair blocks 1, 3, 6, 9, 10, 13, 14, 16, 18 and 19 will not connect with the basement carpark. In buildings with two stairs (2, 4, 5, 7, 8, 11, 12 15 and 17) there are internal connections the stairs serving the basement however these are fire separated at ground floor level with no internal connections. The lifts serving the basement carpark are independent from the lifts serving the residential levels in single stair blocks. In single stair blocks the lifts serving the basement carpark will open into a lobby which is fire separated from the areas in which the lifts serving the above ground levels open into.

The carparks will operate on a simultaneous evacuation strategy independent from the residential levels above. A Category L2 fire detection and alarm system in accordance with BS 5839-1:2017 will be provided throughout the carparks.

The carpark will be designed as ancillary to the residential levels above and as such the travel distances should meet the following travel distance limits.

Maximum recommended travel distances.

Area	Actual travel distances [m]	
	Single direction	Multiple directions
Carpark	18	45
Note: 1. Should the interior layout not be shown, 2/3 of the travel distances should be applied as the maximum direct travel distances.		

It is proposed to provide EV charging within the basement carparks as such the following additional fire safety enhancements are provided to the basement carpark:

- Mechanical ventilation designed in accordance with BS 7346-7 with an enhanced extract rate of 14 ACH.
- Structural fire resistance of the car park will be at least 120 minutes (REI).
- Car park separated from surrounding accommodation by 120 minutes (REI) compartment walls.
- Sprinkler system designed as a category HHP3 system in accordance with BS EN 12845:2015.
- The car park drainage design will allow for drainage of water during a car park fire.
- Car bays where EV charging is provided and between EV charging bays and regular bays should be separated by a distance of at least 1200mm, where this is not possible, to limit fire spread fire resisting walls are provided to group EV charging bays into groups of a maximum of three.
- EV charging points will be linked to the fire detection system, for automatic shut-off of the power supply in the event of a fire. Manual shut-off switches will be provided at the Fire Brigade access points.

5.3 Features incorporated to reduce the risk to life

A grade D2 LD1 fire detection and alarm system designed and installed in accordance with BS 5839-6:2019 will be provided in all apartments.

Non-residential areas will be provided with a category L2 fire detection and alarm system in accordance with BS 5839-1:2017 throughout. The exception to this will be the hotel which will be provided with a category L1 fire detection and alarm system in accordance with BS 5839-1:2017.

All residential blocks (including 20 and 21 which are under 11m) will be provided with a residential sprinkler system to BS 9251:2021. In blocks under 18m this will be a category 2 system, whereas in blocks over 18m

this will be designed as a category 4 system. Furthermore, where a category 2 system is installed it is recommended that duty/standby pumps are provided with secondary power supplies provided to ensure the robustness of the system. In all residential blocks non-residential areas will be provided with a commercial sprinkler system designed to BS EN 12845:2015. This system should be designed to include the measures to improve system reliability and availability described in Annex F of BS EN 12845. The sprinkler system will be designed as a category HHP3 systemin line with

A commercial sprinkler system will also be provided in the school designed and installed in accordance with BS EN 12845:2015.

Blocks 5, the hotel/office are not currently proposed to be provided with a sprinkler system due to the height of this blocks (8.6m) this is in line with code guidance. However, due to the commercial sprinkler system provided throughout the development inclusion of the system into Block 5 could be incorporated in the future as a benefit.

It is recommended that the development should have management on site 24/7. A fire control centre is proposed to be provided within Block 12. The alarm system for each block and the call points in each block should be linked to the fire control centre and management will be present to assist evacuation if required.

It is recommended that Emergency voice communication devices will be provided within each stair core (in both residential and non-residential stairs) at all levels to contact management in case of an emergency.

Each of the carparks will be provided with a smoke ventilation system designed in accordance with BS 7346-7:2013 with an enhanced extract rate of 14 air changes per hour.

Smoke ventilation will be provided to the residential common corridors as described in Section 5.3

Each member forming part of the structural frame of the building or any other beam or column will be provided with the following fire resistance, based on the height of each block.

Table 5: Fire resistance of elements of structure

Block	Use	Height [m] Note 1	Fire resistance of elements of structure [minutes]
1	Cinema/Residential	<18	60
3, 6, 9, 10, 13, 14, 16, 18, 19, 20, 21	Residential	<18	60
5	Hotel and office	<18	60
2, 4, 7, 8, 11, 12, 15, 17	Residential	>18	90
School	School	<18	60
Carpark	Carpark	<10	120

The structural fire resistance of the carpark has been increased to 120 minutes due to the provision of EV charging in the carpark.

The stairs will be enclosed in fire resistant construction equivalent to the elements of structure. Where firefighting stairs are provided these will be provided with 120 minutes fire resistance. The corridor and apartments will be enclosed in 60 minutes fire resistance construction.

5.4 Fire-fighting access within the building

All blocks (both residential and non-residential) with a top occupied storey 18m above fire service access level will be provided with firefighting shafts. The fire-fighting shafts will comprise of:

- A fire-fighting stair at least 1100mm clear width;
- A fire-fighting lift;
- A fire main with an outlet at all levels;
- A ventilated common corridor;
- 120 minutes fire resistance enclosure around the fire-fighting stair and lift;
- 60 minutes fire resistance construction between fire-fighting stair and lift; and
- An AOV with at least 1.0m^2 free area at the top of the stairs.

Where a block has a storey which is both in excess of 18m in height and has a floor area of 900m2 or more two firefighting shafts will be provided. This is case for Blocks 2, 7, 8, 15 and 17.

All residential blocks, where the 45m hose laying distance from the fire tender parking position is not achieved, will be provided with a dry riser main. Coverage from the dry main outlet will be provided in order to achieve a hose laying distance of 45m (or 60m from a firefighting core) to all parts of the floorplate on a route suitable for laying hose.

Suitable dry fire mains will be provided within a protected stair lobby within the cinema, hotel/office and school such that all areas of the floorplate can be reached within 45m.

Furthermore, the design team will consider additional evacuation control measures such as providing facilities for simultaneous evacuation and mobility impaired evacuation via lifts in case a fire becomes out of control.

Where basements are provided which are greater than 3m in depth or in excess of 200m^2 they will be provided with basement smoke ventilation in accordance with the recommendations in BS 9999, BS 9991 and ADB Volume 2. All basement carparks will be provided with smoke ventilation in accordance with BS 7346-7 with an enhanced extract rate of 14 ACH.

5.5 Fire-fighting access to the building

Access for the Fire Service will be provided at Ground Floor for each separate block. A suitable parking position will be provided within 18m of the fire main inlet in each block, the distance from the inlet to the firefighting core will be provided within 18m internally.

All access routes shown in Figure 2 will meet the specifications for the pumping appliance listed in Table 12 below.

Table 6: Road specifications for pumping appliance access

Appliance type	Min. width of road between kerbs [m]	Min. width of gateways [m]	Min. turning circle between kerbs [m]	Min. turning circle between walls [m]	Min. clearance height [m]	Min. carrying capacity [t]
Pump	3.7	3.1	16.8	19.2	3.7	14[Note 1]
High Reach	3.7	3.1	26.0	29.0	4.27	32[Note 2]
Note 1: 12.5 tonnes in accordance to ADB; however, 14t in accordance with the LFEPA Fire safety guidance Note, Access for Fire Appliances, GN29 [13]. Note 2: 17 tonnes tonnes in accordance to ADB; however, 32t in accordance with the LFEPA Fire safety guidance Note, Access for Fire Appliances, GN29 [13].						

The locations of the existing hydrants is shown in Figure 4 below. It is noted that the design has not yet progressed to a stage where the location of new hydrants has been provided as the general landscape design is still in an early stage.

However, the provision of hydrants within the requirements of current code guidance; within 90m of the dry riser inlet to each block can be made a condition of the planning application.

Note that as the design is developed further new hydrants will be provided such that the maximum distance of 90m to all blocks is not exceeded.

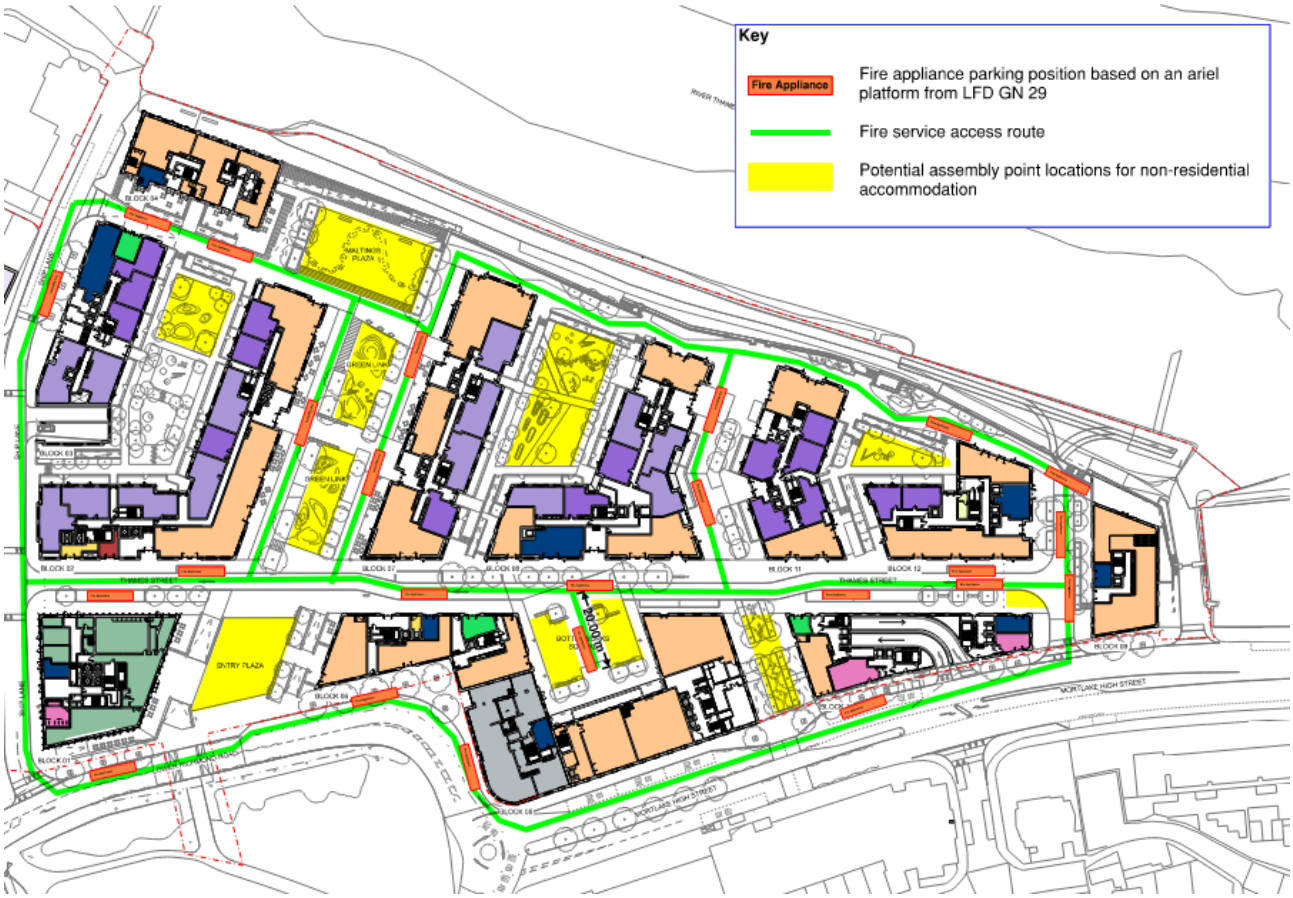

Figure 2: Fire service access around the proposed development area 1

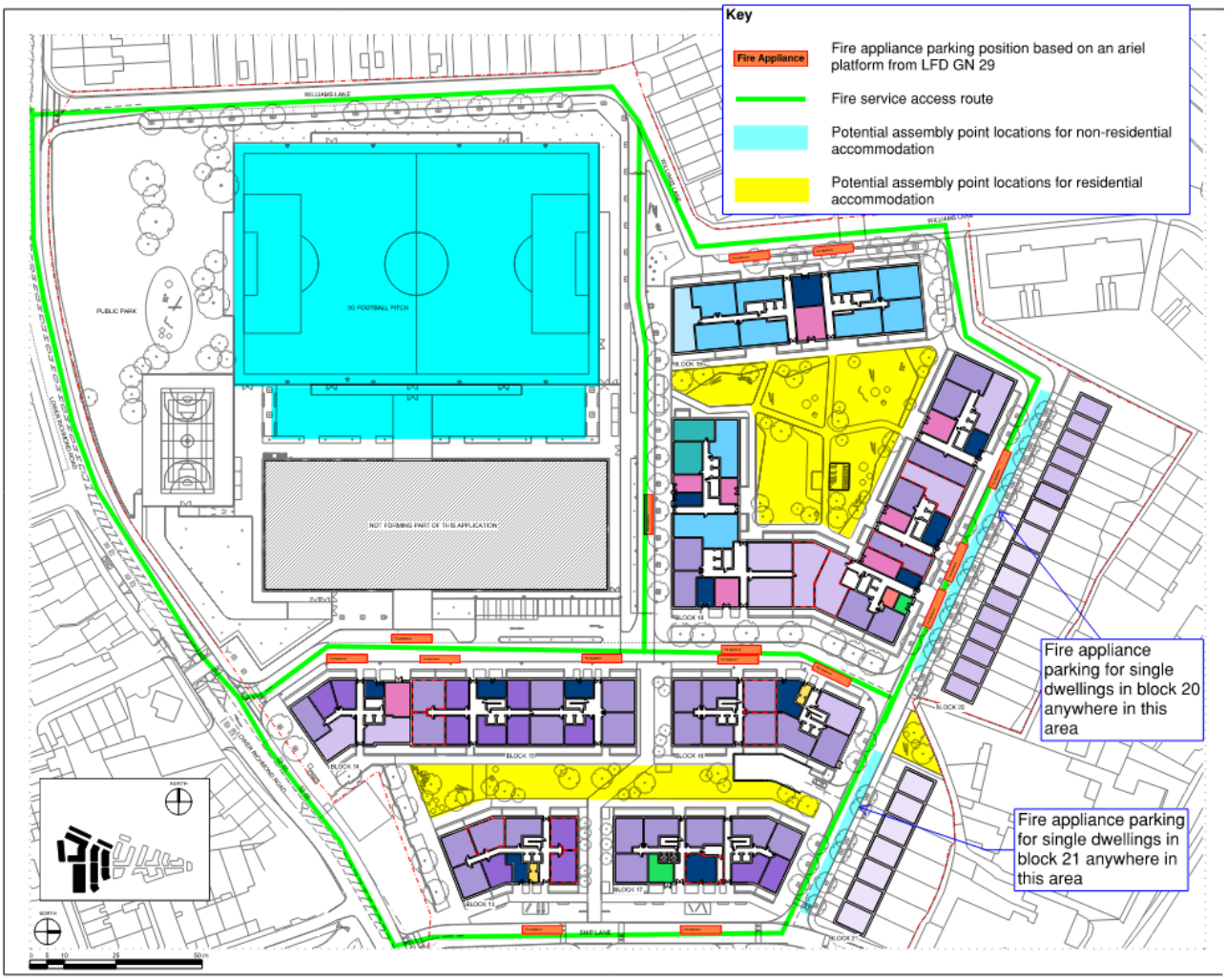

Figure 3: Fire service access around the proposed development area 2

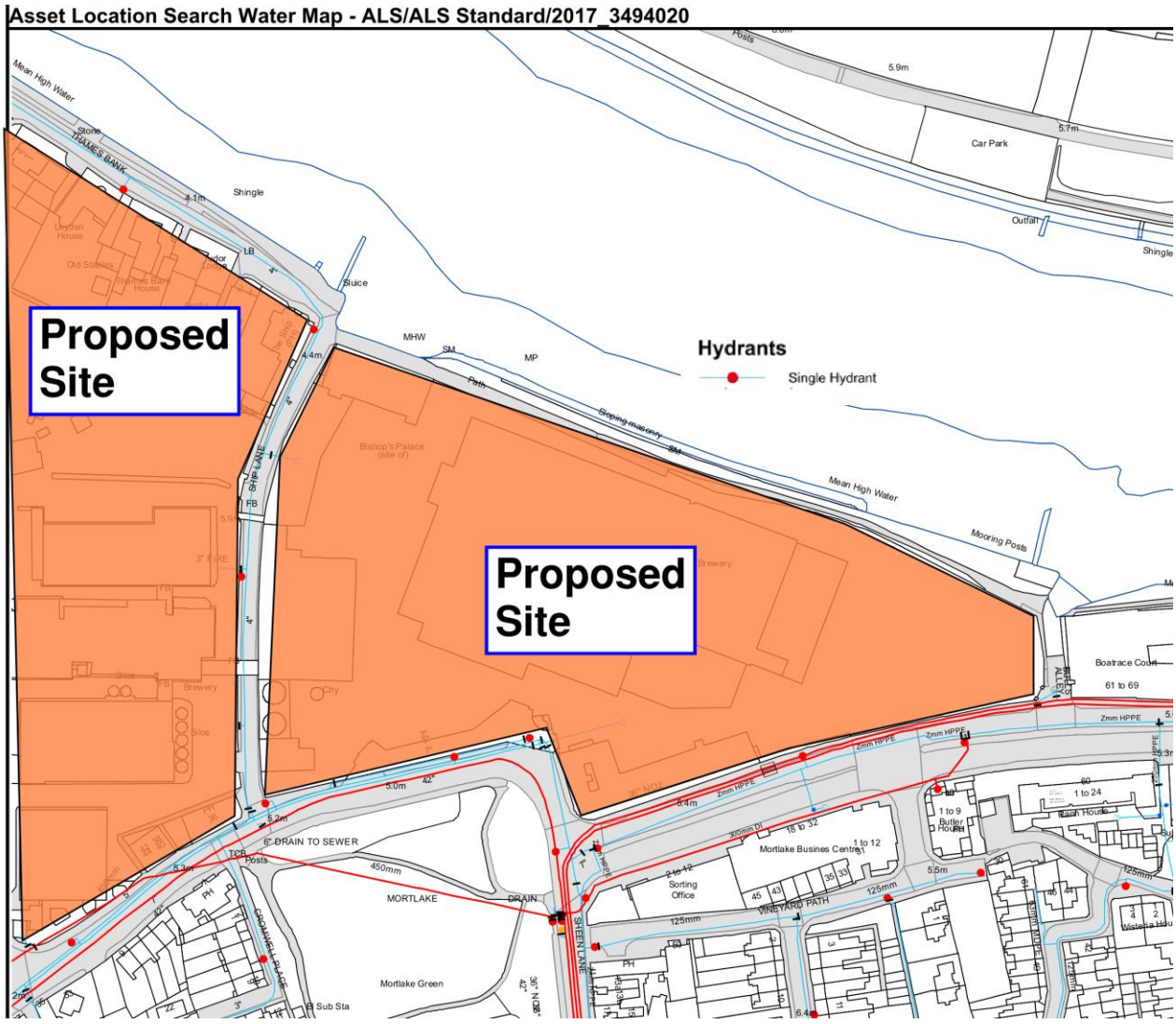

Figure 4: Existing hydrant locations shown by red dots

5.6 Measures to protect the base build fire safety strategy

Any future modifications to the scheme or fit out will be subject to Building Regulations approval and should consider the base build fire strategy, such that fire safety measures are not compromised within the development.

This scheme consists of multiple apartment blocks and will be a highly managed development. The tenants will not be allowed to modify any passive and active fire protection measures implemented without consent of the building management. Furthermore a fire control centre has been recommended to be provided to the development to assist with the management of the site.

6. Conclusion.

This fire safety statement has been prepared to outline the approach and provisions relating to fire safety for the Stag Brewery development for compliance with The London Plan Policy D5 and D12. Furthermore, this statement has been updated to fully address the concerns raised by the HSE as part of their Planning Gateway One review process.

This statement demonstrates that the proposals have considered fire safety at the earliest stage, and the further development of the fire strategy will be based upon these principles. The fire strategy will be further developed for submission to the Approving Authority at the appropriate time and will meet the functional requirements of the Building Regulations 2010, taking recommendations from BS 9999:2017, BS 9991:2015 and ADB Volume 2 and the requirements of Policy D5 and D12 of The London Plan.

Regulation 38 of the Building Regulations requires that fire safety information be given to the person responsible for the occupied building. Therefore, copies of the fire safety strategy, once agreed with the Approving Authority, and other relevant fire safety information should be issued to the responsible person. This will ensure publication of the proposed evacuation strategy and assist in evacuation of all building users.

Any future modifications to the scheme will be subject to Building Regulations approval and should consider the base build fire strategy.

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