D12 and D5
Fire Statement

Site Address: HWSFAC, Broadwater Lake, Harefield, UB9 6PE

Client: London Borough of Hillingdon

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Issue P02

London Borough of Hillingdon
HWSFAC, Broadwater Lake, Harefield, UB9 6PE
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1 Introduction

1.1 Project Summary

Osborn Associates Limited (OAL) has been appointed by the London Borough of Hillingdon (LBoH) to prepare a Fire Statement in accordance with the London Plan (Policy D12). This Statement relates to a planning application for the redevelopment of the site to create the Hillingdon Water Sports Facility and Activity Centre (HWSFAC) at HWSFAC, Broadwater Lake, Harefield, UB9 6PE.

In the context of the London Plan (Policy D12), the requirement for a Fire Statement is primarily focused on the entire development site as a whole, and should contain specific, detailed information for each building within that site.

1.1.1 Aims and Objectives

This document intends to form a Fire Statement, as necessary, to comply with the conditions outlined in The London Plan Policy D12 Fire Safety in the first instance (see Section 2.2). This document also intends to satisfy The London Plan Policy D5(B5) Inclusive Design as appropriate and relevant to the provision of evacuation lifts.

1.1.2 Authors

Jamie Thewlis, MSc (Mechanical Engineering), joined Osborn Associates in February 2026 and has a little over a year of experience as a fire engineer. During his time as a fire engineer, Jamie has had exposure working on projects covering a range of sectors, including education, residential, commercial and transportation. Jamie also has experience in developing performance-based solutions, including the use of computational fluid dynamics modelling and thermal radiation assessments.

Cameron joined Osborn Associates Ltd (OAL) in November 2020 as a Consulting Engineer. He has since obtained a comprehensive knowledge of the relevant British Standards, legislation, and guidance required to assess fire safety in buildings. He holds a Bachelor's degree (with Honours) in Fire Risk Engineering BEng (Hons) and is currently an Associate Member of the Institution of Fire Engineers (AIFireE). Cameron continues to advance his professional development through ongoing Continuing Professional Development (CPD) courses, continuously increasing his knowledge in the fire engineering field as he progresses towards achieving Chartered Engineer status. In January 2025, Cameron was promoted to Senior Fire Engineer. Cameron has significant experience in the education sector, successfully delivering numerous school projects across England through to Stage 6 handover in 2025. He has led projects across all RIBA stages, from early concept design through to construction and final handover, spanning multiple sectors including commercial, retail, residential, storage, and industrial.

Fourie Wiid, MEng (Mech), CEng, MIFireE, MSFPE (a Member of the Institution of Fire Engineers (IFE), a Chartered Engineer with the IFE), joined Osborn Associates in January 2023 and has over eight years of industry experience. Having successfully delivered projects in the education, health care, commercial, retail, residential and industrial sectors over his career, Fourie thoroughly understands the challenges associated with fire safety and has demonstrated expertise in resolving issues using performance-based solutions, including computational fluid dynamics. He successfully leads teams on complex fire engineering projects from concept inception to delivery on-site, including project management to testing, commissioning and handover to the Client. Fourie is a Director at OAL and the head of the fire safety engineering team.

2 The London Plan 2021

2.1 Overview

0In March 2021, the Greater London Authority published a Spatial Development Strategy (also known as 'The London Plan'), documenting the overall strategic plan and societal framework for the development of London over the next 20 to 25 years.

The London Plan outlines several design policies that are intended to form the basis against which planning applications are assessed. The policies directly relevant to fire safety in buildings are Policy D12, Fire Safety, and Policy D5(B5) Inclusive Design.

The statement has been developed using the recommendations of Approved Document B Volume 2: Buildings other than dwellings 2019 edition incorporating 2020, 2022 and 2025 amendments and forthcoming 2026 and 2029 changes (ADB) to demonstrate compliance with the Building Regulations 2010, namely:

- 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 and Rescue Service
- Regulation 7 - Materials and Workmanship

2.2 Policy D12 Fire Safety

Policy D12 of The London Plan states:

A) 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:

i) *Identify a suitably positioned unobstructed outside space:*
   a) For fire appliances to be positioned on.
   b) Appropriate for use as an evacuation assembly point.
ii) *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.*
iii) *Are constructed in an appropriate way to minimise the risk of fire spread.*
iv) *Provide suitable and convenient means of escape, and an associated evacuation strategy for all building users.*
v) *Develop a robust strategy for evacuation, which can be periodically updated and published, and that all building users can have confidence in.*
vi) *Provide suitable access and equipment for firefighting, which is appropriate for the size and use of the development.*

B) 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:

i) *The building's construction: methods, products and materials used, including manufacturers' details.*
ii) *The means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and an associated evacuation strategy approach.*
iii) *Features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans.*
iv) *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 proposed fire suppression and smoke ventilation systems; and the ongoing maintenance and monitoring of these.*
v) *How provision will be made within the curtilage of the site to enable fire appliances to gain access to the building.*
vi) *Ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.*

Generally, major developments are:

i) *Developments of dwellings where 10 or more dwellings are to be provided, or the site area is 0.5 hectares or more.*
ii) *Development of other uses, where the floor space is 1000 m^2 or more, or the site area is 1 hectare or more.*

2.3 Policy D5(B5) Inclusive Design

Policy D5(B5) of The London Plan states:

B) Development proposals should achieve the highest standards of accessible and inclusive design. They should:

5) Be designed to incorporate a 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.

2.4 Context of this Document

The total area of the site is greater than 1 hectare; therefore, the proposed development will be classed as a 'major development' under the terms of Policy D12(B).

This document forms the Fire Statement as required by Policy D12 to supplement the wider project planning submission and intends to outline how each aspect of the policy can or will be achieved for this development.

This Fire Statement will also determine the applicability of Policy D5 (B5) to this development and provide commentary, as appropriate. Where practicable, this Fire Statement will follow the recommendations of the supplementary guidance published in relation to Policy D12 by the Greater London Authority in February 2022.

3 Development Description

The Hillingdon Water Sports Facility and Activity Centre (HWSFAC) is a new outdoor water sports centre that will be situated on a small peninsula within the Colne Valley Regional Park, located in Greater London. The development comprises a total site area of approximately 780,000 m^2, with three main structures proposed to accommodate occupants of the site. Each of the buildings will be adjacent to mature woodland. In addition to the three main buildings, various smaller outbuildings will be situated within the site to provide ancillary accommodation. No relevant buildings are proposed under the scheme.

The site is expected to be primarily occupied by children and young people and will be in operation primarily during summer months. While in operation, open fires and camping stoves will be in use on site, and as such robust management regimes should be in place to ensure that these facilities are used safely, to avoid the spread of fire to nearby buildings or the surrounding woodland.

The site will be provided with a Battery Energy Storage System (BESS) that will be powered via photovoltaic panels and off-peak electricity during the winter months when the site will not be operational. The BESS will utilise iron phosphate batteries, rather than lithium-ion batteries.

Due to the total area of the site being greater than 1 hectare, the site is considered to be a major development, though only a limited area of the site will be developed with fixed structures, with the remaining area remaining undeveloped as open woodland for outdoor activities.

The site will be developed by the London Borough of Hillingdon and will be reviewed by LBoH Building Control. As such, additional insurance requirements will be considered throughout this document to satisfy the requirements of the Hillingdon Council.

The full site boundary is shown in Figure 1, and the locations of the main buildings are shown in Figure 2 and Figure 3. Further information about each building is detailed in the following subsections of this report.

Figure 1 – Site Boundary

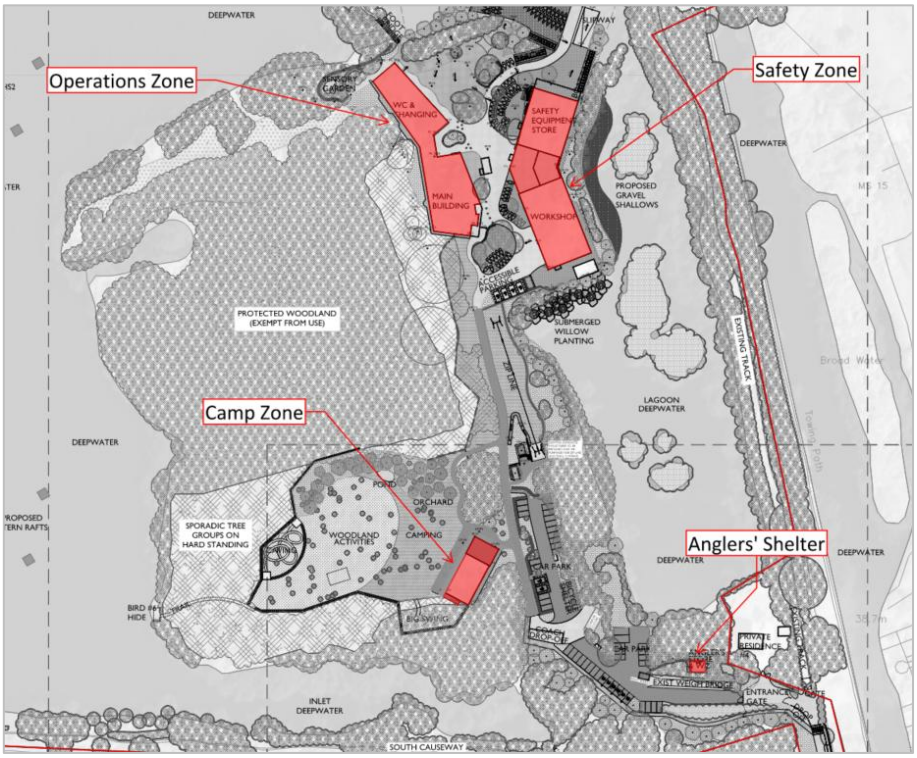

Figure 2 – Main Structure and South Anglers' Shelter Locations

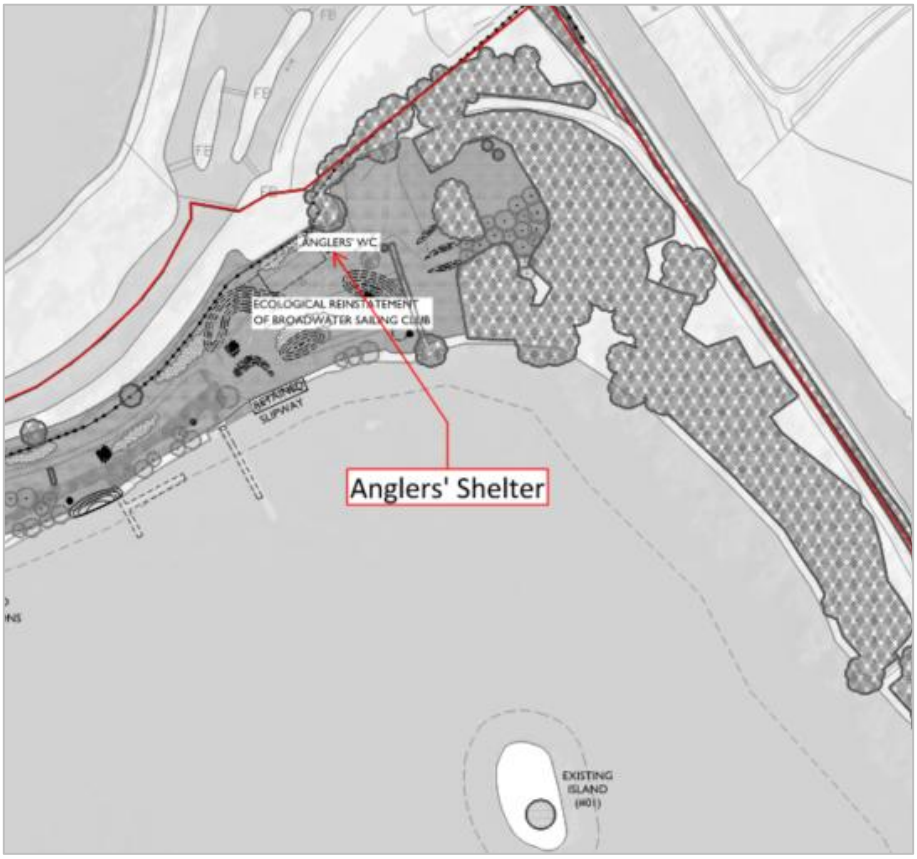

Figure 3 – North Anglers' Shelter Location

3.1 Use and Occupancy

The development site will consist of three main buildings, along with various smaller ancillary structures, including anglers' shelters and bike stores. The usage of the buildings on the site is indicated in Table 1.

Table 1 – Buildings on Site Summary

Building	Building Levels	Height above Adjacent Ground Floor [m]	Use
Operations Zone	2 storeys (G + 1)	3.8	Other residential (Purpose Group 2(b)) Assembly and recreation (Purposed Group 5)
Safety Zone	Single storey	4.8	Industrial (Purpose Group 6) Storage and other non-residential (Purpose Group 7(a))
Camp Zone	Single storey	3.3	Assembly and recreation (Purpose Group 5)

In accordance with the definition set out under the Building Safety Act 2022, only storeys above ground level are counted when determining the number of storeys. Mezzanine floors are only considered a storey where their floor area is at least 50% of the floor area of the largest storey within the building.

The site will contain smaller ancillary structures, specifically Anglers' Shelters and Bike Shelters. These structures are small, detached buildings with total areas of less than 15 m^2 and not containing sleeping accommodation. Therefore, they are considered to be Class 6 Exempt Buildings under the Building Regulations 2010 and need not be provided with any fire safety provisions to satisfy life safety requirements.

The fire safety design for the buildings on site will primarily be driven by internal fire-resisting construction, automatic fire detection and alarm requirements, an automatic suppression system to be provided in all buildings, and any necessary escape route protection to ensure the safe evacuation of occupants.

3.2 Operations Zone

The Operations Zone will be a new two-storey building (ground and first floor), with a mix of hotel-style accommodation to be provided for staff, plus assembly and recreation areas to be provided for day-to-day operations for both staff members and attendees of the activity centre. The ground floor will comprise flexible activity rooms which may be used as sleeping space for dormitory-style indoor camping, offices, changing rooms, showers, a galley to be used for bulk feeding, and various ancillary rooms. The first floor will comprise training rooms, offices, stores, an observation space, ancillary rooms, cabin-style accommodation mainly to be occupied by young people, and associated rooms to be used by staff, including a kitchen. Additional plant equipment will be located on the roof to protect from flooding. This plant arrangement has not been fully designed at the time of writing this report and will be developed further during future design stages.

The building will contain three stairs, all of which are to be protected stairs and will be used for evacuation purposes. All protected stair cores will also contain an evacuation lift. It should be noted that while Stair C is intended to serve as a protected stair, there are rooms which access the stair directly without lobbies. Generally, protected stairs should be accessed only via a protected lobby to ensure that the stair remains fire sterile.

The proposed building plans for the ground and first floors are shown in Figure 4 and Figure 5, respectively.

Figure 4 – Operations Zone: Ground Floor North (left) and Ground Floor South (right)

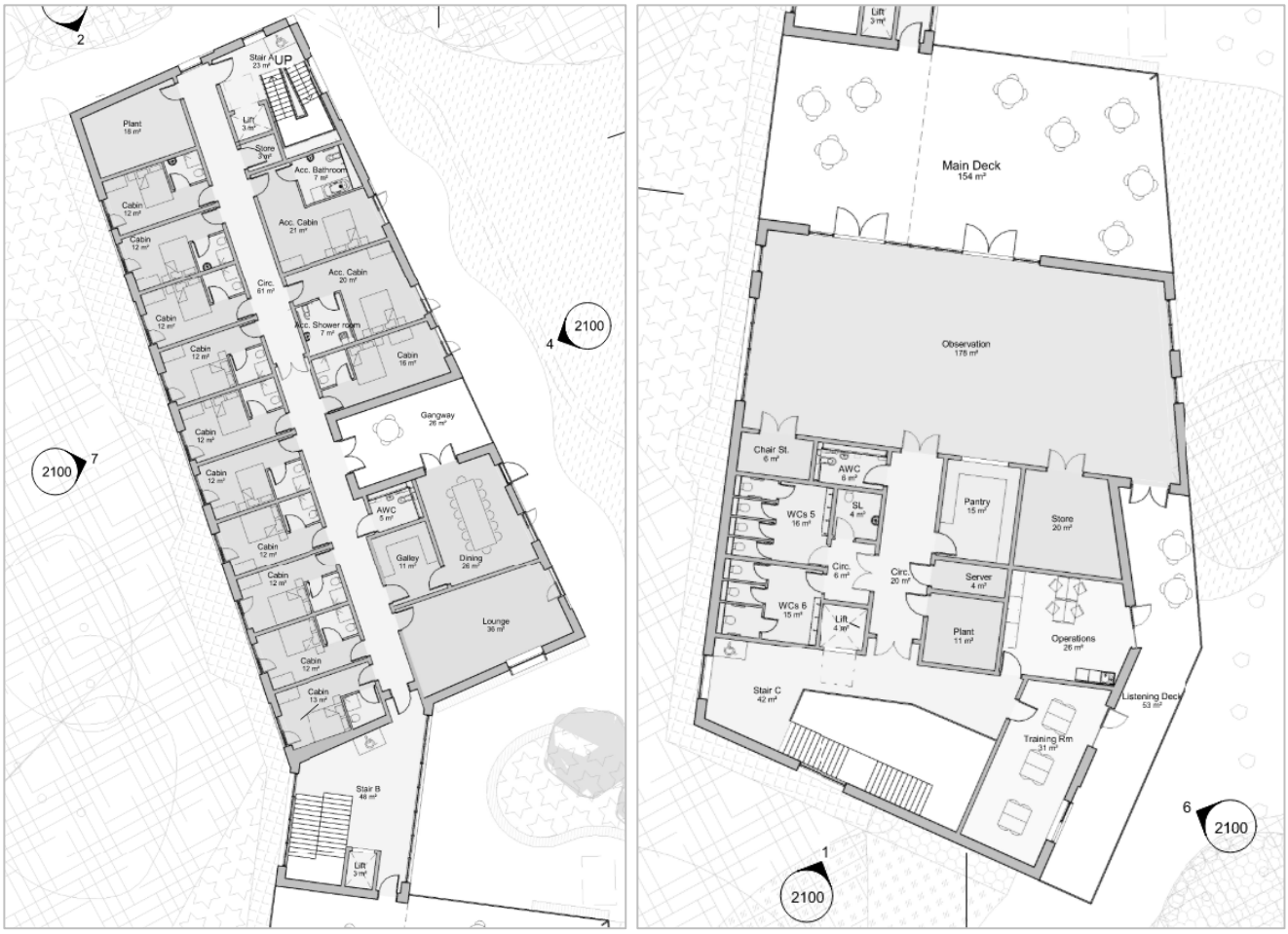

Figure 5 – Operations Zone: First Floor North (left) and First Floor South (right)

3.3 Safety Zone

The Safety Zone will be a new single-storey building split into two sections, which will be separated by a secure yard space. One section will comprise equipment and boat storage space, as well as a small tea point area. The second section will comprise a workshop and repair space, as well as a small tea point area and ancillary rooms, including an energy centre, plant room, low and high voltage switchrooms, and a detached transformer room.

The Workshop & Repairs area will be accessed only by adults, and the Safety Equipment Store will be accessible to all members of staff and children occupying the site. No welding or hot works will be carried out in the Safety Zone or anywhere else on site. The Workshop & Repairs area will contain mechanical machinery, solvents, and dust. The Safety Equipment Store will contain stacked plastic equipment.

The proposed plans for the Safety Zone are shown in Figure 6 and Figure 7.

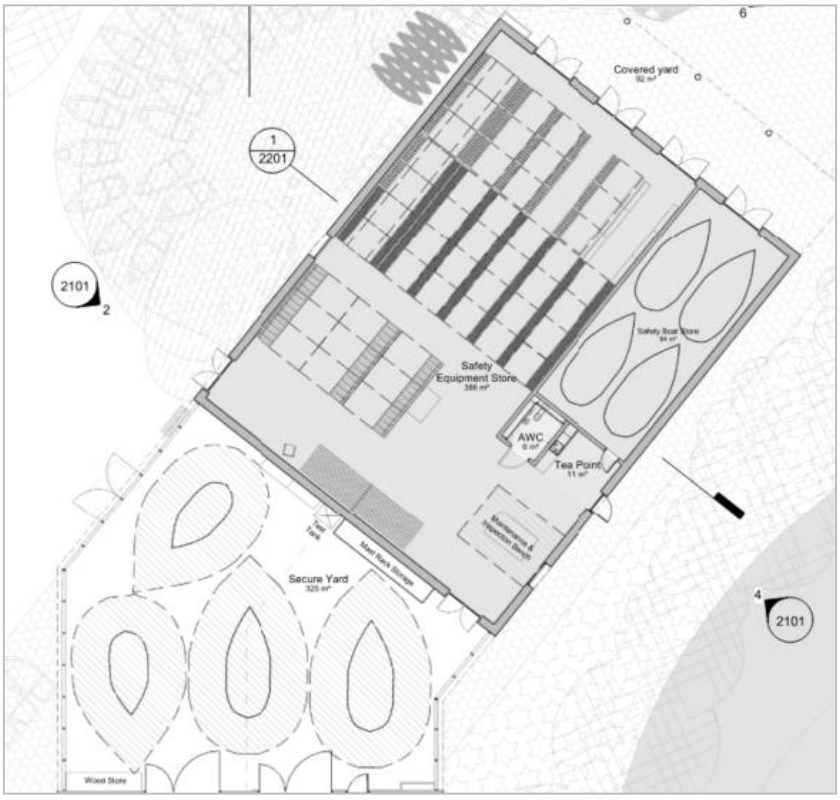

Figure 6 – Safety Equipment Store and Secure Yard

Figure 7 – Workshop & Repairs and Plant Space

3.4 Camp Zone

The Camp Zone will be a new single-storey building primarily made up of changing areas and WCs. The building will also include a hygiene room, a plant room, an external food prep area, and an external activity shelter. The outdoors area adjacent to the building will contain open fires and camping stoves.

The Camp Zone will be accessible to members of staff and any members of the public (adults and children) who will be attending the activity centre.

The proposed building plan is shown in Figure 8.

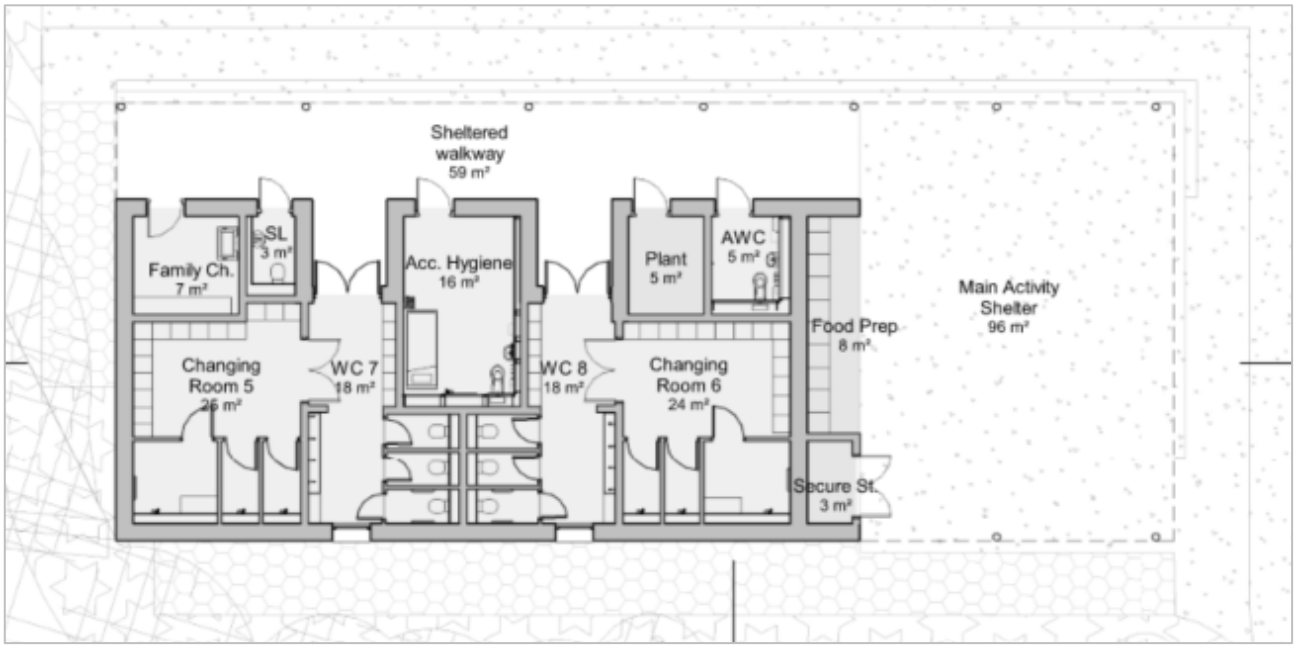

Figure 8 – Camp Zone Proposed Plan

4 Guidance Used

The development will consist of three new main structures, two of which have multiple purpose groups. In order to demonstrate compliance with the Building Regulations, the appropriate latest guidance will be used.

The fire safety provisions for all buildings on site will be developed based on the guidance of *Approved Document B Volume 2: Buildings other than dwellings 2019 edition incorporating 2020, 2022 and 2025 amendments and forthcoming 2026 and 2029 changes – for use in England* (ADB).

In addition to the recommendations of ADB, OAL have been instructed by Hillingdon Council to consider the Hillingdon Council New Building Insurance Requirements (HCIR) for the development, which contains requirements for fire safety provisions that would exceed the minimum recommendations of ADB in some cases. Where the recommendations of ADB and the HCIR differ, the recommendations of both documents will be outlined in this report, noting the more onerous of the two.

5 Key Fire Safety Strategy Considerations

5.1 The Building's Construction Method and Materials Used

The construction methods of the new buildings will be developed at a later stage. The main structure of the Operations Building will be constructed using reinforced concrete. All internal walls will be masonry or reinforced concrete. The structure of the Safety Zone will be a steel portal frame.

5.1.1 External Wall Construction

The London Plan notes that any major developments should not incorporate combustible materials in their external walls. Therefore, only materials that achieve at least Class A2-s1, d0 performance in line with BS EN 13501-1 will be used in any new external wall construction. All insulation will be non-combustible mineral wool.

5.2 Evacuation Strategy

All buildings will adopt a simultaneous evacuation strategy whereby all occupants will immediately exit the building upon detection of smoke or fire. Given the extent of the open space of the site, sufficient space will be provided for the appropriate siting of assembly points for all proposed structures.

5.3 Means of Escape

5.3.1 Escape From the Operations Zone

5.3.1.1 Escape From the Ground Floor

Escape from the ground floor of the Operations Zone will be by way of various exits that lead directly outside. Access to ancillary plant areas will be directly from outside, with no internal access, and therefore, escape from these areas will be directly to the outside.

5.3.1.2 Escape From the First Floor

Escape from the first floor of the Operations Zone will be by way of the three protected stair cores, Stair A, Stair B and Stair C. Each of the stair cores will be provided with an evacuation lift. Stair A will serve the residential area of the building, Stair C will serve the non-residential area, and Stair B will serve the entire first floor. All protected stairs will terminate at ground level. Stairs A and B discharge directly to the outside, with no internal access at ground level. Stair C is currently shown to discharge directly to the outside via the main reception door, with internal access to the rest of the building at ground level.

The protected stairs are highlighted in Figure 9 below.

Figure 9 – Operations Zone Protected Stair Cores

5.3.2 Escape From the Safety Zone

Escape from the Safety Zone will be by way of various exits that lead directly to outside. Ancillary plant areas will be accessed directly from outside, with no internal access, and therefore, escape from these areas will be directly to the outside.

5.3.3 Escape From the Camp Zone

Escape from the Camp Zone will be by way of various exits that lead directly to outside. Level access will be provided at all exits to ensure that wheelchair users are able to self-evacuate. Ancillary plant areas will be accessed directly from outside, with no internal access, and therefore, escape from these areas will be directly to outside.

5.3.4 Travel Distances

The travel distances within all buildings will be limited to the distances outlined in ADB, as summarised in Table 2.

Table 2 – Travel Distance Limits

Building Area	Purpose Group	Travel Distance Limit (m)	
		Escape in one direction only	Escape in more than one direction (≥45° apart)
Operations Zone			
In sleeping accommodation	Residential (other)	9	18
In corridors serving sleeping accommodation	Residential (other)	9	35
Other residential areas	Residential (other)	18	35
Non-residential areas	Assembly and recreation	18	45
Safety Zone			
Workshop and repair areas	Industrial (normal hazard)	25	45
Storage areas	Storage and other non-residential (normal hazard)	25	45
Camp Zone			
All main building areas	Assembly and recreation	18	45
All Buildings			
Places of special fire hazard	All Purpose Groups	9	18
Plant rooms (within the room)	All Purpose Groups	9	35
Plant rooms (total distance not in open air)	All Purpose Groups	18	45

Under the proposed design, the above travel distance limits will be satisfied.

5.4 Horizontal Escape

The horizontal escape capacity of the building will be assessed based on the escape width requirements listed in Table 2.3 of ADB. Table 3 summarises the minimum escape route width based on occupancy. Where double doors are provided, the width of one of the leaves should be not less than 750 mm (850 mm for unassisted wheelchair access).

Table 3 – Minimum Escape Route Widths

Occupancy (Persons)	Escape Width [mm]
60	750 [1]
110	850
220	1050
More than 220	5 mm/person [2]

[1] May be reduced to 530 mm for gangways between fixed storage racking, other than in public areas of 'shop and commercial' (purpose group 4) buildings
[2] 5 mm/person does not apply to an opening serving fewer than 220 people

Table 4 summarises the maximum permitted occupants allowed per number of exits, as listed in Table 2.2 of ADB.

Table 4 – Minimum Number of Escape Routes

Maximum Number of Persons	Minimum Number of Escape Routes
60	1
600	2
600 or more	3

5.4.1 Horizontal Escape from the Operations Zone

The horizontal escape capacity provided by the Operations Zone is shown in Table 5 below. The exits highlighted in red are assumed to be discounted by the effect of smoke or fire for the purposes of the escape capacity assessment, as per the recommendations of Clause 2.21 of ADB.

Table 5 – Horizontal Escape Capacity for the Operations Zone

Level	Exit	Exit Width [mm]	Escape Capacity [person]	Total Escape Capacity [person]
Ground Floor[1]	Reception Exit	2100	420	**1590**
	Main Office Exit	870	110	
	Crew and Wellbeing Room Exit	1900	380	
	Laundry Exit	1000	110	
	Galley Exit	850	110	
	Accessible Camping & Activity Room East Exit	2300	460	
	Accessible Camping & Activity Room North Exit	2300	460	
	WCs + Showers 1 Exit	1000	110	**760**

Level	Exit	Exit Width [mm]	Escape Capacity [person]	Total Escape Capacity [person]
	WCs + Showers 2 Exit	1000	110	
	WCs + Showers 3 Exit	1000	110	
	WCs + Showers 4 Exit	1000	110	
	Locker Lobby 1 Exit	1600	320	
	Locker Lobby 2 Exit	1600	320	
	AWC + Shower Exit[2]	1000	60	**60**
	Family Change Exit[2]	1000	60	**60**
	Plant Room Exit[2]	1000	60	**60**
	Plant Exit[2]	1600	60	**60**
First Floor	Exit into Stair A	1000	110	**550**
	Exit into Stair B via Main Deck	890	110	
	Exit into Stair B via Corridor	860	110	
	Exit into Stair C via Circulation Space	1600	320	
	Exit into Stair C via Training Room	890	110	
	Exit into Stair C via Operations	880	110	

[1] Note that the exits serving Stairs A and B are not included as these are accessed only via the stairs from the first floor.
[2] The occupancy of these rooms should be limited to 60 persons, as they are provided with only one entrance/exit door.

Based on the escape capacity shown in Table 5, the occupancy of the south ground floor of the Operations Zone should not exceed 3020 persons, and the north ground floor should not exceed 760. The occupancy of the first floor of the Operations Zone should not exceed 550 persons. However, it should be noted that the occupancy of the first floor is further limited by the vertical escape capacity (see Section 5.5).

Sub-division of corridors is required when a corridor that provides escape to two or more storey exits is longer than 12 m. Only one subdividing door located centrally in the corridor is required between the two storey exits where this occurs. This should not be misinterpreted as requiring a subdividing door every 12 m. Once the subdividing door is provided in the corridor, the remaining length of the corridor on each side may be over 12 m. A fire door is required, provided with the associated fire resisting construction to separate it into two sections. The bedroom corridor requires one of these doors.

It is recommended in ADB that dead-end corridors over 4.5 m are protected and separated by fire doors from the rest of the circulation. Applying protected corridors for dead-ends should follow the layout shown in Diagram 2.10 of ADB.

5.4.2 Horizontal Escape from the Safety Zone

The horizontal escape capacity provided by the Safety Zone is shown in Table 6 below. The exits highlighted in red are assumed to be discounted by the effect of smoke or fire for the purposes of the escape capacity assessment, as per the recommendations of Clause 2.21 of ADB.

Table 6 – Horizontal Escape Capacity for the Safety Zone

Level	Exit	Exit Width [mm]	Escape Capacity [person]	Total Escape Capacity [person]
Ground Floor[1]	Safety Equipment Store North Exit 1	2300	460	**3530**
	Safety Equipment Store North Exit 2	2300	460	
	Safety Equipment Store North Exit 3	2300	460	
	Safety Boat Store Exit	2300	460	
	Tea Point Exit	1000	110	
	Safety Equipment Store West Exit	2100	420	
	Secure Yard Exit	3300	660	
	Workshop & Repairs Exit 1	2900	580	
	Workshop & Repairs Exit 2	2900	580	
	Horticultural Store Exit[1]	2900	60	**60**
	LV Switchroom Exit[1]	1000	60	**60**
	HV Switchroom Exit[1]	1000	60	**60**
	Energy Centre Exit[1]	2800	60	**60**
	Plant Room Exit[1]	2800	60	**60**
[1] The occupancy of these rooms should be limited to 60 persons, as they are provided with only one entrance/exit door.				

Based on the escape capacity shown in Table 6, the occupancy of the Safety Zone should not exceed 3530 persons for the main areas of the buildings. Rooms with single access/escape are each limited to 60 people.

5.4.3 Horizontal Escape from the Camp Zone

The horizontal escape capacity provided by the Safety Zone is shown in Table 7 below. The exits highlighted in red are assumed to be discounted by the effect of smoke or fire for the purposes of the escape capacity assessment, as per the recommendations of Clause 2.21 of ADB.

Table 7 – Horizontal Escape Capacity for the Camp Zone

Level	Exit	Exit Width [mm]	Escape Capacity [person]	Total Escape Capacity [person]
Ground Floor[1]	WC 7 Exit	1600	60	**60**
	WC 8 Exit	1600	60	**60**
	Family Changing Exit	800[1][2]	60	**60**
	Accessible Hygiene Exit	820[1][2]	60	**60**
	Plant Exit	820[1]	60	**60**
	AWC Exit	820[1][2]	60	**60**
	Secure Store Exit	1500[1]	60	**60**

[1] The occupancy of these rooms should be limited to 60 persons, as they are provided with only one entrance/exit door.
[2] These doors are narrower than the minimum recommended clear width of 850 mm, in line with the guidance of ADB. Therefore, these doors should be widened to at least 850 mm.

Based on the escape capacity shown in Table 7, the occupancy of the Camp Zone should not exceed 60 people per room/area.

5.5 Vertical Escape

The current clear widths achieved by each of the stairs serving the first floor of the Operations Zone are as follows:

- Stair A: 1100 mm
- Stair B: 1500 mm; and
- Stair C: 1500 mm

Table 8 shows the corresponding escape capacity provided by each of the stairs.

Table 8 – Vertical Escape Capacity from the Building

Stair	Width, mm	Number of Floors Served	Escape Capacity Provided, Person	Total Escape Capacity, Person
Stair A	1110	1	220	**440[1]**
Stair B	1500	1	220	
Stair C	1500	1	220	

[1] As none of the stairs is provided with a protected lobby, each one should be discounted to ensure that the remaining stairs provide sufficient escape capacity. As all stairs provide the same escape capacity based on their width, the maximum occupancy of the first floor is determined assuming that any one of the stairs could be made unavailable in the event of a fire.

Based on the available vertical escape capacity, the occupancy of the first floor of the Operations Zone should not exceed 440 persons.

As no protected lobbies are to be provided under the current design, clear emergency signage should be provided throughout the first floor that will direct occupants to an alternative escape stair if their nearest stair is inaccessible in the event of a fire.

It should also be noted that merging flows will need to be considered for Stair C at later design stages, as the final exit serving the stair is also accessible from the ground floor.

5.6 Occupants with Special Evacuation Requirements

Occupants that require special evacuation requirements, commonly known as occupants with disabilities, refer to occupants with permanent or temporary physical, sensory, or cognitive impairments that can impact a person's ability to evacuate a building unassisted in the event of a fire. Occupants that require special evacuation requirements are not limited to those previously mentioned but may also include chronic health conditions and religious practices that may restrict behaviour in the event of a fire.

The following will be provided as part of the design to support the evacuation of the occupants with special evacuation requirements:

i) Evacuation lifts will be provided in the Operations Zone (see Section 5.7). All other buildings are single storey and therefore do not require any lifts.
ii) Disabled refuges (900 mm x 1400 mm) will be located in a place of relative safety, such as a protected lobby or protected stair.
iii) Refuges will be provided at every floor level except the ground floor where there is level egress available.
iv) Emergency Voice Communication (EVC) systems will be provided at refuge locations.

Personal Emergency Evacuation Plans (PEEPs) will be developed for occupants with special evacuation requirements who are regularly on the premises or for visitors to the premises who have made themselves known to staff. The standard evacuation plan should include measures to make evacuations suitable for all persons on the premises. Information for occupants with special evacuation requirements should be noted in fire action notices and the fire management plan.
The responsible person may also wish to develop a General Emergency Evacuation Plan (GEEP) as an informative measure or template. Further information can be found in BS 8300 and the DCLG Publication "Fire Safety Risk Assessment Supplementary Guide - Means of Escape for Disabled People", which is available to download for free. The standard evacuation plan should include measures to make evacuations suitable for all persons on the premises. Information for occupants with special evacuation needs should be noted in fire action notices and the fire management plan.

5.7 Policy D5(B5) - Provision of Evacuation Lifts

Policy D5 of the London Plan 2021 requires that in buildings where lifts are provided, at least one lift per core should be designed for evacuation use. As the Operations Zone will be provided with lifts, one evacuation lift will be provided in each of the stair cores.

As ADB does not provide specific recommendations with regard to the design of evacuation lifts, all evacuation lifts will be designed in line with the recommendations of Annex G of BS 9999:2017 and the relevant provisions of BS EN 81-20, BS EN 81-70 and BS EN 81-76. All lifts used for evacuation will open into a protected lobby or protected stair at each level.

5.8 Assembly Points

Assembly points are proposed to be provided at the beach of the main peninsula, or in the campsite area. Due to the open nature and size of the site, there will be sufficient space available to provide appropriate assembly points for all buildings.

5.9 Passive Fire Safety Measures

The recommended protection to be provided to structural elements of buildings is determined by their height and Purpose Group, and is summarised in Table 9 below in line with the most onerous recommendations of Table B3 of ADB and Clause 6 of the HCIR.

Table 9 – Structural Fire Resistance

Building Name	Building Height [m]	Fire Resisting Requirement
Operations Zone	3.8	60 minutes
Safety Zone	4.8	60 minutes
Camp Zone	3.3	60 minutes

It should be noted that for the Safety Zone and Camp Zone, elements of structure may not be required to be provided with fire resistance, as these are single storey buildings. However, fire resistance will still be required if one of the following applies to the element:

- It is part of, or supports, an external wall, and there is a requirement to provide the external wall with fire resistance to satisfy building separation provisions;
- It is part of, or supports, a compartment wall, including a wall that is common to two or more buildings; and
- It supports a gallery.

In the Operations Zone, the floor separating the ground and first floors will be designed as a compartment floor. Compartment walls will be used to separate sleeping accommodation from the common corridor. Compartment walls/floors will be used to separate areas of each of the buildings designed for different uses.

The minimum requirements for the provision of compartmentation and fire-resisting construction, as well as associated fire doors, are shown in Table 10 based on the recommendations of Table B2 of ADB. All penetrations will be fire stopped to achieve the same fire resistance.

Table 10 – Compartmentation and Fire Resisting Construction

Area	Fire Resisting Requirement [1]	Exposure	Fire Doors [3][4]
Compartment Floors	REI 60	From underside	-
Compartment Walls Separating Sleeping Accommodation from Common Corridor[7]	REI 60	From each side	E60S$_a$
Protected Stair Enclosure[7]	REI 60	From each side	E60S$_a$
Protected Shaft	REI 60[5]	From each side	E60S$_a$
Subdivision of Corridors[7]	REI 60	From each side	E60S$_a$
Kitchens[6][8]	REI 60	From each side	E60S$_a$
Evacuation Lifts[7]	REI 60	From each side	E60
Plant Rooms[7]	REI 60	From each side	E60S$_a$
Storage Rooms[7]	REI 60	From each side	E60S$_a$
LV or ELV Switchrooms[7]	REI 60	From each side	E60S$_a$
HV Switchroom	REI 60	From each side	E60S$_a$
Transformer Room	REI 60	From each side	E60S$_a$
Places of Special Fire Hazard [2]	REI 60	From each side	E60S$_a$
Energy Centre (Safety Zone)	REI 120	From each side	E60S$_a$
Iron Phosphate Battery Storage	REI 60	From each side	E60S$_a$
Oxygen Cylinder Storage	REI 60	From each side	E60S$_a$

[1] Period of resistance for Loadbearing (R), Integrity (E), Insulation(I).
[2] Places of special fire hazard include oil-filled transformer rooms, switch gear rooms, boiler rooms, storage spaces for fuel or other highly flammable substances, and rooms that house a fixed internal combustion engine.
[3] Fire door sets are to consist of a complete door set as defined by BS 8214:2016. This includes door leaves, frames, cold smoke seals and closers where applicable. Fire doors should meet the Sa classification when tested to BS EN 1643-3 or have a leakage rate not exceeding 3 m^3/m/hour (from head and jambs only) when tested at 25 Pa under BS 476-31.1.
[4] The HCIR requires that all fire doors should achieve the same fire resistance as the enclosure it is installed. All fire doors will be provided by Gerda, in line with the HCIR.
[5] Protected shafts that pass through a compartment floor should meet the same fire resistance as the floor through which they pass.
[6] Note that kitchens would not be required to be protected under ADB guidance. However, the HCIR recommends that they are enclosed in 60 minutes (REI) fire-resisting construction.
[7] The noted rooms are to be provided with a minimum of 60 minutes fire resistance in line with the HCIR and the LBoH fire safety policy.
[8] Where kitchens are provided with a service opening, the opening should be fitted with a fire shutter that achieves a minimum of 60 minutes fire resistance and is linked to the automatic detection system.

Table 6.1 of ADB provides recommendations for the surface spread of flame and fire classification that should be achieved by internal linings. These recommendations are summarised in Table 11.

Table 11 – Classification of Internal Linings

Building Area	Classification of Linings
Small rooms of no more than 4 m^2 in residential accommodation	D-s3, d2
Small rooms of no more than 30 m^2 in non-residential accommodation	D-s3, d2
Other rooms	C-s3, d2
Other circulation spaces	B-s3, d2

It should also be noted that the HCIR recommends that all internal linings should achieve a surface spread of flame and fire classification of Euroclass A or B when tested to BS EN 13501.

5.10 Storage of Dangerous Substances

It is confirmed that there will be no natural gas stored on site. However, medical oxygen cylinders will be stored on site and as both full and empty tanks must have suitable storage provisions.

The Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) was introduced to protect people from fire and explosion risks related to dangerous substances and potentially explosive atmospheres, by placing duties on employers whose work activities may pose a risk to others.

5.10.1 Overview

Dangerous substances are considered as any substances that could cause harm to people as a result of a fire, explosion, or similar incident.

An explosive atmosphere is a mixture of a dangerous substance in the atmosphere, be it a gas, mist, dust, or vapour, which has the potential to catch fire or explode.

The DSEAR regulations therefore apply to any premises with dangerous substances present, where an explosive atmosphere may occur and could pose a risk to the safety of people as a result.

To comply with the Regulations, a suitable and sufficient DSEAR specific risk assessment should be undertaken by a competent third party. Once hazards are identified, they must be eliminated or reduced so far as reasonably practicable. If the reduction of a hazard still poses a risk, appropriate mitigation must be introduced through suitable control measures.

Furthermore, in areas where explosive atmospheres can occur, they are to be classified into Zones, based on the likelihood and persistence of occurrence.

- **Zone 0 (Zone 20)** A hazardous area in which an explosive atmosphere is continuously present, or present for long periods, or frequently.
- **Zone 1 (Zone 21)** A hazardous area in which an explosive atmosphere is likely to occur occasionally in normal operation.

- **Zone 2 (Zone 22)** A hazardous area in which an explosive atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

Zones 0, 1, and 2 are used to classify explosive atmospheres formed of flammable gases, vapours, or mists. Zones 20, 21, and 22 are used to classify explosive atmospheres formed of combustible dusts.

Where Zones are identified, the following should be ensured as a minimum:

- All potential sources of ignition, including sparks, hot surfaces, smoking materials, naked flames, unsuitable equipment etc. must be removed and controlled.
- All equipment in use within the zone, both mechanical and electrical, fixed and portable, should meet the requirements of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 1996, having an appropriate ATEX (EX) symbol to identify it as such.
- Appropriate EX safety signage clearly denoting the Zone classification should be displayed at entry points to all hazardous areas.
- Employees should be provided with the appropriate clothing, that does not create a risk of electrostatic discharge.
- Employees should be properly informed of any risks and trained to deal with dangerous substances.
- Suitable and sufficient plans and procedures to deal with accidents, incidents, and emergencies involving dangerous substances should be established and tested.

Once established, the employer must ensure that the overall explosion safety measures are verified as being sufficient. This must be undertaken by a competent third party who can consider the particular risks and the adequacy of the control measures holistically.

While oxygen is not combustible itself, it is still considered a hazard under DSEAR guidelines due to the gas serving as an oxidant which may accelerate a fire or create an explosion risk. Therefore, the recommendations of *BCGA Guidance Note G2: Guidance for the Storage of Gas Cylinders in the Workplace, Revision 5:2012* (Guidance Note G2) will be considered when developing the oxygen cylinder storage facilities for the site. Guidance Note G2 provides recommendations as to the siting, design and management of gas cylinder storage facilities, with additional recommendations relating to the management of medical gas cylinders.

5.11 Electrical Vehicle (EV) Charging Facilities

Electric vehicles pose unique risks which are not currently addressed (in detail) within current guidance, including ADB. As such, a risk assessment approach is recommended to determine the measures that could be incorporated into the design to mitigate these risks. This information should be developed in full during later design stages.

EV charging is proposed on the site, to be located in the entrance car park and to facilitate the charging of electric cars, electric wheelchairs, e-bikes and e-scooters. However, no e-bikes or e-scooters will be stored inside buildings. Additionally, lithium-ion battery storage and charging facilities are to be provided in the Workshop & Repairs area for outboard motors.

In order to ensure adequate fire safety provisions are achieved, OAL recommend that the development considers the guidance of the Fire Protection Association document *RC59: Recommendations for fire safety when charging electric vehicles* (RC59).

The design criteria of Approved Document S should also be followed to ensure a compliant design, and that sufficient capacity for EV charging is provided.

EV Charging points should be positioned externally and grouped into clusters of no more than four vehicles, with these groups separated from other vehicles by at least 1.2 m.

Manual isolation facilities should be provided to shut down the charging equipment in the event of a fault or vehicle fire. The isolation points should be prominently signed and strategically located such that they will be readily accessible by trained staff and firefighters. Such facilities should also include appropriate lock-out functions.

Charging points should be protected against mechanical damage by vehicles. For example, they should be installed above ground level and be located on a raised plinth, or be protected by kerbs, bollards or metal barriers.

If multiple types of chargers are to be in use, there should be clear and prominent notices at each charging point, indicating for which equipment or vehicle it is suitable.

If DC fast charging points (500 V DC) are to be provided, they should be clearly differentiated from conventional charging points.

Furthermore, all charging equipment should be installed in accordance with the following standards:

- BS 7671:2018+A1:2020, Requirements for Electrical Installations;
- The BS EN IEC 61851 suite; and
- IET Code of Practice for Electrical Vehicle Charging Equipment Installation.

The proposed EV charging points located in the entrance car park pose a minimal risk of fire spread to buildings on the site when following the above recommendations. Additional care should be taken with regards to the lithium-ion battery charging facilities to be provided within the Workshop & Repairs area, and robust management systems should be implemented to ensure safe operation of these facilities.

5.12 Active Fire Safety Measures

5.12.1 Automatic Sprinkler System

Under the recommendations of ADB, none of the buildings on the site would be required to be provided with sprinkler protection.

However, the HCIR requires that all new buildings be provided with automatic sprinkler protection compliant with LPC Rules for Automatic Sprinkler Systems 2015, incorporating BS EN 12845 and associated Technical

Bulletins. Furthermore, the HCIR recommends that any construction within 10 m of a main building should also be sprinkler-protected.

Therefore, an automatic suppression system will be provided to all buildings on the site in accordance with the requirements of the HCIR. Fire pumps will also be provided and are to be powered using the BESS provided on site.

5.12.2 Automatic Fire Detection and Alarm

As the Operations Zone contains hotel-style accommodation, ADB and BS 5839-1:2017 recommend that a Category L1 automatic detection and alarm system should be provided within the building. For the Safety Zone and the Camp Zone, these would be expected to be buildings accommodating fewer than 300 persons, and as such, ADB and BS 5839-1:2017 would recommend a minimum of a Category M manual system.

As a client requirement, a Category P1/L1 automatic detection and alarm system is to be provided in all buildings, designed in accordance with BS 5839-1:2025. The alarm systems in all buildings will be linked such that occupants of the site will be made alerted in the event of a fire.

5.13 External Fire Spread

The building design must ensure that fire spread does not occur from one building to another. Should a fire occur in a building, heat will radiate through non-fire-resisting openings in the external walls.

The preliminary assessment of the maximum allowable unprotected area for each elevation in line with guidance presented in BR 187 was conducted for each building. The external fire spread calculations have been carried out using the enclosing rectangle method and based on the following assumptions:

i) The sleeping accommodation in the Operations Zone will be separated from each other and the rest of the building by 60 minutes fire-resisting compartment walls and 60 minutes fire-resisting compartment floors. The largest compartment on any level and/or the closest to the relevant boundary will therefore be used to undertake the external fire spread assessment.
ii) The radiation intensity at each unprotected area for the buildings is assumed to be 84 kW/m^2 for residential areas and assembly uses, and 168 kW/m^2 for other non-residential areas.
iii) The enclosing rectangle will be considered as the height and width of the compartment area rather than only around the unprotected area (i.e., windows). This is an onerous assumption as it assumes that the walls will not provide any fire resistance.
iv) The height of the enclosing rectangle has been assumed to be the height of the slab to slab and not slab to ceiling, which also represents the worst-case scenario.
v) The enclosing rectangles assessment has been carried out on the basis that all buildings are to be provided with sprinkler protection.

Figure 10 and Figure 11 show the location of the compartments used for each calculation and

Table 12 shows the correlating results. All building elevations may be fully unprotected under the proposed site design. If any future works are proposed on the site, these calculations may need to be revisited.

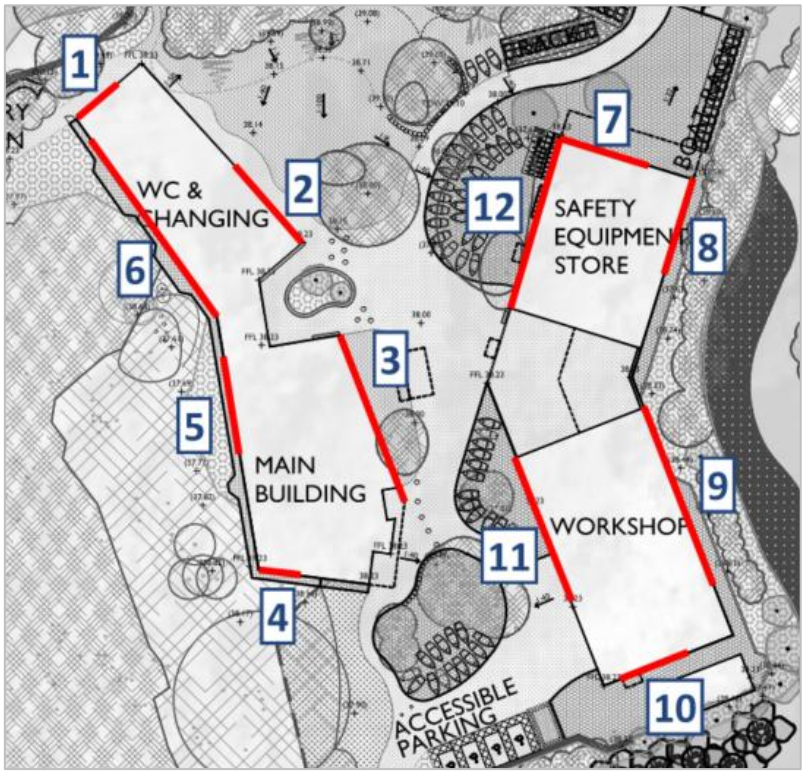

Figure 10 – External Fire Spread Cases: Operations Zone and Safety Zone

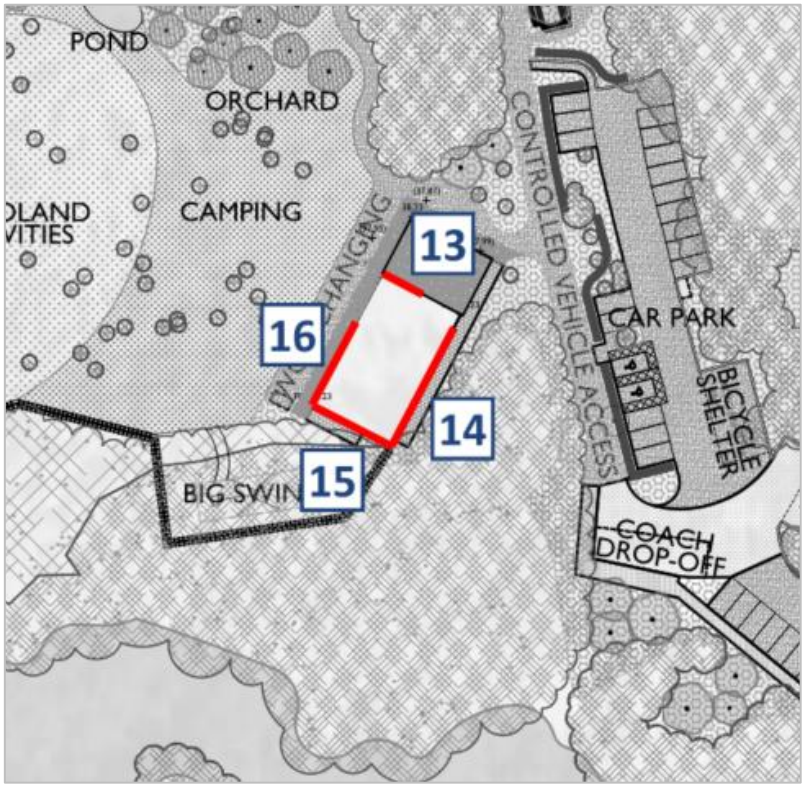

Figure 11 – External Fire Spread Cases: Camp Zone

Table 12 – Permissible Unprotected Elevation Area

Location	Width [m]	Height [m]	Relevant Boundary Distance [m]	Radiation Intensity [kW/m^2]	Permissible Unprotected Area (%)
1	7.2	3.8	>100	168	100
2	15.2	3.8	16.1[1]	84	100
3	23.2	3.8	8.6[1]	84	100
4	3.5	3.8	>100	84	100
5	14.5	3.8	>100	84	100
6	31.1	3.8	>100	84	100
7	13.3	4.8	>100	168	100
8	14.1	4.8	60.9	168	100
9	28.1	4.8	63.7	168	100
10	10.4	4.8	>100	168	100
11	22.9	4.8	8.6	168	100
12	25.2	4.8	16.1	168	100
13	5.8	3.3	27.1[2]	84	100
14	17.5	3.3	25.5[2]	84	100
15	8.2	3.3	79.8	84	100
16	12.8	3.3	>100	84	100

[1] In accordance with relevant guidance, a notional boundary has been taken as the midpoint between the Operations Zone and the Safety Zone.
[2] In accordance with relevant guidance, a notional boundary has been taken as the midpoint of the nearest road (Controlled Vehicle Access Road).

5.14 Roof Coverings

Roof coverings refer to a construction that can consist of one or more layers of materials but does not refer to the roof structure.

Roof coverings will conform to the recommendations of Table 14.1 of ADB when tested in accordance with BS 476-3 and BS EN 13501-5. This is also summarised in Table 13. As solar panels are to be included on the roofs of the Safety Zone and Camp Zone, roof coverings will be constructed from steel. External roof coverings to the Operations Zone should achieve a minimum classification of at least C_{ROOF}(t4), as the nearest relevant boundary distance is at least 12 m.

As a client requirement, no plastic or thermoplastic roof lights are to be used in any of the buildings on site.

It should also be noted that no green roofs are proposed at this stage of the development.

Table 13 – Roof Covering Fire Requirements

Designation of Covering of Roof or Part of Roof	Distance From any Point of Relevant Boundary			
	Less than 6 m	At least 6 m	At least 12 m	At least 20 m
$B_{ROOF}(t4)$	Acceptable	Acceptable	Acceptable	Acceptable
$C_{ROOF}(t4)$	Not Acceptable	Acceptable	Acceptable	Acceptable
$D_{ROOF(}t4)$	Not Acceptable	Not Acceptable	Not Acceptable	Acceptable
$E_{ROOF}(t4)$	Not Acceptable	Not Acceptable	Not Acceptable	Acceptable
$F_{ROOF(}t4)$	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable

5.14.1 Photovoltaic (PV) Panel Installations

PV panels are proposed to be included on the roofs of the Safety Zone and the Camp Zone.

Some elements of PV installations represent a significant potential source of ignition, and therefore, care should be taken in the design, installation, and maintenance of systems to ensure the risk of fire in an existing building is not made worse.

The presence of a PV system on a roof is not immediately obvious from ground level, and though generally benign, they do present hazards which are not immediately obvious. Unless the PV modules are shielded from light entering the panels, there will be potentially harmful voltages present even if the system is not operational.

Prior to any PV installation, a suitable and sufficient risk assessment should be undertaken, the findings of which should be discussed with the local Fire Authority and the building insurer. The optimal location for the array should be determined, and if the roof is selected, it must be confirmed that the installation, including panels and fixing systems, should not lower the fire performance or classification of the roof.

In order to achieve a compliant design in terms of fire safety, the following points should be considered to meet the recommendations of the Fire Protection Association's RC62: *Recommendations for fire safety with photovoltaic panel installations (RC62, 2023)*:

i) Arc-fault protection should be provided to the PV panels to reduce the risk of ignition.
ii) PV panels should be fitted with a shutdown mechanism, a firefighter's switch at ground level for use by the Fire and Rescue Service to cease power generation during a fire incident.
iii) An isolation switch should be provided for the Fire and Rescue Service's use.

If PV panels are to be mounted at more than 70° to the horizontal or attached to walls or vertical screens, they should be considered as external walls for compliance with the Building Regulations.

All panel assemblies should be tested to BS EN 61730-2:2007+A1:2012. Units should be selected to have a low propensity for fire spread, with no or minimal propensity to produce burning droplets following ignition.

The PV panels should achieve the same fire classification as the roof coverings, and they should be installed on a deck of limited combustibility, achieving a minimum Class A2,s1-d0 rating when tested to BS EN 13501-1:2018. If installation on a combustible or partly combustible roof is unavoidable, then a fire-resistant covering should be applied.

Components of PV systems, such as cables, should not be passed over compartment walls. If this cannot be avoided, they should be installed in fire-resistant cable ducts. This is highlighted in Figure 12 below.

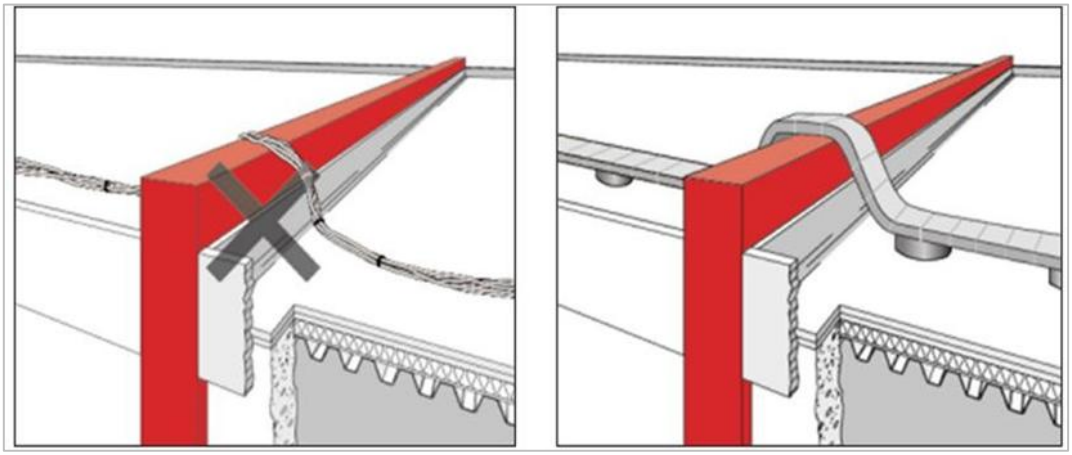

Figure 12 – Components of PV Installation (CFPA-E Guidance No 37:2018 F)

There should be a minimum distance of 2.5 m from a compartment wall to the PV panels on both sides of the compartment, highlighted in Figure 13 below.

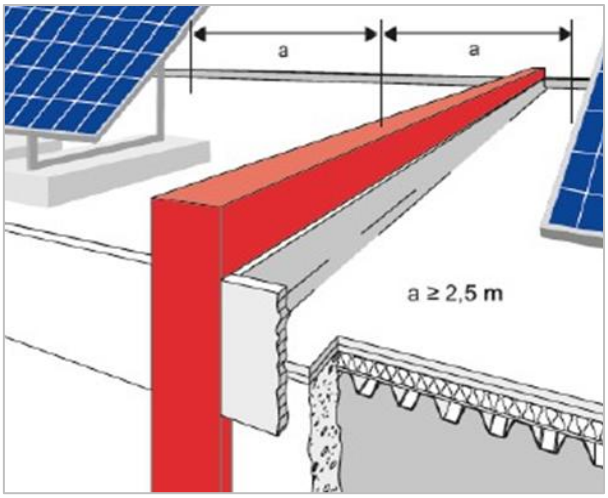

Figure 13 – Placement of Panels around Compartment Walls (CFPA-E Guideline No 37:2018 F)

Banks of PV arrays should be restricted to a size no greater than 40 m, with subdivision of at least 5 m between banks to provide access for maintenance and firefighting. Figure 14 below highlights the arrangement.

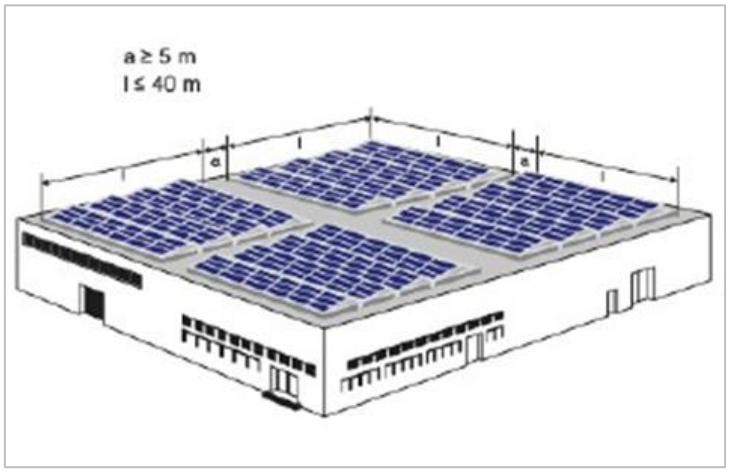

Figure 14 – Typical Bank Array Layout of PV Panels (CFPA-E Guideline No 37:2018 F)

In order to ensure a compliant electrical design, compliance with BS 7671:2018 +A3:2024 is a core requirement and should be supplemented with the IET's PV Code of Practice where necessary.

Where a new installation is planned, careful attention should be given to the placement of the electrical intake and consumer units. In all situations, these units must be easily accessible to fire and rescue service personnel, enabling them to isolate the power supply using a fireman's switch or other devices when needed, to guarantee safe conditions for firefighters.

All installation works should be undertaken in accordance with the DTI document *Photovoltaics in Buildings: Guide to the installation of PV systems*, and the installation itself should be completed by a competent contractor accredited through the Microgeneration Certification Scheme (MCS).

The entire PV panel installation should be evaluated to conform to the recommendations of CFPA-E guidance, and non-conformities to the guidelines discovered should be addressed accordingly.

It should also be noted that the HCIR places further restrictions on PV panel installations. Therefore, in order to achieve compliance with the HCIR, the following conditions will be satisfied with regards to PV panels:

- They will not be integrated into the roof
- They will be located away from aggressive fumes and dust outlets in a position where PV panels will not be exposed to sources of steam or heat
- They will be supported on an independent steel frame securely fixed using suitable mounting systems that are securely fastened to the supporting structure. Panels will not be held in place by ballast. Non-return or 'tighten-and-break' anti-theft screws will be used to fasten panels to mounting frames.
- The supporting structure will be on a non-combustible roof and frame below the PV panels and extended by 2 m on all sides of the PV panels.
- They will be manufactured and installed by a Microgeneration Certification Scheme (MCS) recognised contractor.
- Following the commissioning of the equipment, a completion certificate will be obtained from the MCS-recognised installer.

- A suitable and sufficient fire risk assessment will be undertaken and reviewed prior to and following the installation.
- Potential sources of ignition of the installation will be addressed in an assessment under the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR).
- Panels will conform to BS EN 61215 or BS EN 61646 in conjunction with BS EN 61730-1 and BS EN 61730-2 so that they may withstand inclement weather conditions. The panels will be certified by a company with third party accreditation to BS EN 17025.
- The layout of the panels on the roof will be such that the areas of panels are separated by panel-free areas so that effective firefighting is possible.
- PV panels and unprotected cables will not be laid over a fire compartment wall where possible. If the laying of cables over or through compartment walls is unavoidable, then the cables will be protected using cable ducts that extend at least 1 m on each side of the wall and provide the same degree of fire resistance as the wall over or through which they pass. In order to maintain their protective function, the material from which the ducts are manufactured will be suitable for external use and resistant to UV rays and the effects of the weather.
- The electrical system (inverters, etc.) will be located in a 60 minutes fire-rated compartment.
- The total area of PV panels will not exceed 30% of the total roof area of the building, unless such an arrangement is found to be acceptable by a separate risk assessment.

5.15 Fire Service Access and Provisions

5.15.1 Fire Appliance Access

The site can be accessed from Moorhall Road, with a new access road being provided as part of the development to allow vehicle access to the peninsula. The nearest fire stations to the site are Ruislip (approximately 10 minutes away) and Hillingdon (approximately 30 minutes away). The emergency road vehicle access will not be affected by the proposed works and will be retained during the construction period.

All access roads will meet the requirements listed in Table 13.1 of ADB. This information is shown in Table 14 below. This information should also be confirmed with the London Fire Brigade, who may request that these numbers be modified to reflect the values listed in the LFPA Guidance Note, GN 29.

Access roads within the site are shown in Figure 15.

Figure 15 - Fire Vehicle Access to the Site

Table 14 – Typical Firefighting Appliance Access Requirements

Minimum Access Route Specification	Dimension [1]	
	Pump	High Reach
Width Between Kerbs	3.7 m	3.7 m
Width Between Gateways	3.1 m	3.1 m
Turning Circle Between Kerbs	16.8 m	26.0 m
Turning Circle Between Walls	19.2 m	29.0 m
Clearance Height	3.7 m	4.0 m
Carrying Capacity	14 tonnes [1]	17.0 tonnes
Maximum Reversing Distance	20 m	20 m
[1] The carrying capacity has been increased from 12.5 tonnes to reflect the LFPA Guidance Note, GN 29, which notes the minimum carrying capacities for London Fire Brigade appliances.		

Note that the road system throughout the site will not include any soft landscaping. Access throughout the site will be via existing reinforced concrete routes.

5.15.2 Vehicle Access to the Operations Zone

As the total floor area of the Operations Zone is greater than 2000 m^2, vehicle access for a pump appliance will be provided to at least 15% of the building perimeter, in line with the recommendations of Table 15.1 of ADB.

5.15.3 Vehicle Access to the Safety Zone and the Camp Zone

As the Safety Zone and Camp Zone are considered to be small buildings in accordance with Clause 15.1 of ADB, vehicle access for a pump appliance will be provided to whichever is the less onerous of the following:

- 15% of the perimeter; or
- Within 45 m of every point of the footprint of the building

5.15.4 Internal Access for Firefighting Personnel

None of the proposed buildings will require a firefighting shaft, in line with Section 17 of ADB.

5.16 Water Supplies for Fire and Rescue Service

It is intended that water for firefighting use will be supplied via new private hydrants that are to be provided by Affinity Water as part of the development. Guidance for the installation of the hydrant system will be taken from BS 9990:2015.

As the buildings will not be provided with fire mains, hydrants will be provided within 90 m of an entry point to the building and not more than 90 m apart.

Water mains and hydrants should be capable of delivering a sufficient flow of water to enable effective firefighting to be undertaken. The provision of water mains and hydrants should be in accordance with BS 9990:2015.

5.17 Life Safety Power Supplies

All life safety systems, such as the sprinkler system, evacuation lifts, smoke controls, etc., will be provided with secondary power supplies in accordance with BS 8519:2020.

All plant that supports life safety and fire safety equipment are to be enclosed within a minimum of REI 120 fire-resisting construction.

There must be minimal delay in changeover if the main power fails, and it must occur automatically.

The emergency lighting/internally illuminated signage and fire alarm system may utilise internal batteries to provide back-up power. These batteries will be capable of a continuous standby supply in accordance with the relevant design standard and be fully rechargeable within a period of 24 hours, or 72 hours if facilities close over the weekends.

6 Future Development and the 'Golden Thread' of Information

The 'Golden Thread' refers to a concept where the fire safety information of a building is to be updated and maintained throughout the whole life cycle of the building. The fire safety information should be maintained and updated as the development evolves in line with the principles of the Golden Thread.

Under Regulation 38 of the Building Regulations, a fire safety strategy report should form part of the information handed over to the management company to enable them to be effective.

Those fire safety elements identified within the fire strategy may only be modified following a suitable review and approval under the Building Regulations by a building control body.

The Regulatory Reform (Fire Safety) Order 2005 (RRFSO) places legal obligations on management. Under the Order, the responsible person must carry out a fire safety risk assessment and implement and maintain a fire management plan.

In workplaces, the responsible person is the employer or anyone who has any extent of control over the premises. Some examples include a branch manager, a building supervisor, the facilities management company, etc.

Building management should develop fire safety plans, fire safety manuals, a management and evacuation plan and an emergency information pack for the Fire and Rescue Service. The information should be kept up to date. Management of fire safety must be integrated with all other management systems.

Management systems should also include procedures for anticipating and taking into account, either on a permanent or a temporary basis, changes to the occupancy (e.g., number of occupants, the familiarity of occupants, etc.) and/or fire growth characteristics (e.g., types of combustibles including fire growth rates, the number of combustibles, storage/use of combustibles including high-risk items, etc., of the building and its contents over the life cycle of the building). Specifically, systems should be developed to ensure that storage areas which are expected to contain high volumes of combustible plastic are safely managed.

Management systems should be implemented to ensure the safe operation of the EV and lithium-ion battery charging facilities to be provided on site. Specifically, the following points should be considered (note that this list is not exhaustive):

- Comprehensive maintenance should be undertaken on the charging points and site-owned vehicles, scheduled at regular intervals to ensure correct function.
- The unattended charging of vehicles or batteries over prolonged periods (i.e. evenings and weekends) should be avoided wherever possible.
- When available, information on the as-built EV charging systems should be provided within a premises information box (PIB), to be readily accessible by the Fire Brigade.

The evacuation of disabled young occupants from the residential areas of the Operations Zone will be staff led. Therefore, staff should be suitable trained to carry out the evacuation of disabled occupants in the event of a fire.

It should be noted that the site will be primarily occupied by children and young people who may not be aware of all fire safety provisions. Suitable and sufficient staff training will be essential to ensuring that fire safety is maintained throughout the site.

The HCIR requires that all members of staff and occupants of the site receiving training in the following:

- General fire prevention;
- Action to be taken upon discovering a fire;
- How to raise the alarm;
- Action to be taken upon hearing an alarm;
- Location of escape routes and assembly points; and
- Evacuation procedures.

Additionally, members of staff should be given instructions as to the following:

- The operation of the fire alarm control panel(s);
- How to call the fire brigade;
- The location and use of any firefighting equipment provided;
- Arrangements for evacuating disabled children and young people; and
- Procedures for stopping machinery.

Hillingdon Council have also raised concerns with regards to refuse fires cause by cigarettes, e-cigarettes and vapes. Care should be taken by site management that access to these products is limited on site and that they are disposed of safely where they are present.

Maintenance and testing are essential to ensure that fire safety systems will operate correctly in the event of a fire. Good housekeeping will be encouraged to ensure that the effectiveness of the fire safety provisions is not adversely affected. This is particularly relevant to the Operations Building, as Hillingdon Council have noted that there would be severs social consequences if the building were to be destroyed in the event of a fire.

7 Design Recommendations

7.1 Declarations

The fire safety of the proposed development and the fire safety information are developed to satisfy the requirements of the London Plan Policy D12A and London Plan Policy D12B.

The London Plan Policy D5(B5) requirement for an evacuation lift is also applicable to the proposed development.

7.2 Design Recommendations and Other Site Considerations

During the next design stages, the following recommendations should be confirmed, considered or carried out.

Design Topic	Planning-Stage Commitment
Fire Service Access	Provide suitable fire appliance access to the site and building entrances, with clear routes, hardstanding and turning arrangements to be confirmed as the layout is finalised.
Firefighting Water Supply	Provide new private hydrants in line with the guidance of BS 9990:2015.
Means of Escape	Provide protected stair cores and escape routes appropriate to the building uses and heights. Travel distances and exit arrangements will be confirmed at detailed design.
Evacuation Strategy	Adopt an evacuation approach appropriate to the building use, to be confirmed in the detailed fire strategy.
Inclusive Evacuation and Evacuation Lifts	Where lift cores are provided, include evacuation lift provision in line with Policy D5(B5), together with refuges and suitable communication arrangements and management procedures.
Compartmentation and Separation	Separate ancillary areas from main building areas using suitable fire-resisting construction and protected service routes.
External Wall Fire Spread	Design external wall systems, including cavity barriers and interfaces (e.g., balconies), to limit fire spread and to meet the relevant regulatory requirements and boundary conditions.
Local Council Insurance Requirements	Coordinate the design with the local council, ensuring that the relevant insurance requirements are considered and satisfied where possible. Where compliance is not possible, the local council should be consulted as early as possible to discuss the issue.
Flood Protection	The site includes a floodplain. To protect against flooding, all buildings will be raised above ground level, including plant and transformer spaces.
Firefighting Activities	Discharging large volumes of water into the nearby lakes is not acceptable on environmental grounds. The local fire brigade should be consulted and made aware.
Non-Firefighting Vehicle Access	Vehicle access on site is to be restricted to the car parking areas. Only exceptions will be emergency service vehicles and vehicles giving access to disabled occupants.
Woodland Protection	The site will contain large areas of mature woodland. Robust management regimes should be implemented to ensure that fire does not spread from camping activities to the surrounding woodland.

8 Supporting Information

This document is based on the information provided to Osborn Associates Limited (OAL). Any additional information or deviations from the information supplied may invalidate the conclusions and recommendations outlined in this report. The table below lists the relevant documents, plan titles and reference numbers.

OAL accepts no liability with respect to any information of which it was not aware at the time of providing its advice, conclusions, or opinions, regardless of whether OAL should reasonably have been aware of any such missing information.

Table 15 – Information Received

Document ID	Document/Drawing Title	Revision
N/A	Gateway One Fire Statement	P06
HWSFAC-COL-00-XX-DR-L-1109	Overall Landscape Masterplan	14
1329-HAV-ZZ-XX-DR-A-1000	Site Location Plan	P01
1329-HAV-Z1-ZZ-DR-A-S2-1100	Operations Zone – Proposed Ground and First Floor Plans	P01
1329-HAV-Z1-RF-DR-A-S2-1101	Operations Zone – Proposed Roof Plan	P01
1329-HAV-Z1-ZZ-DR-A-S2-2100	Operations Zone – Proposed Elevations	P01
1329-HAV-Z1-ZZ-DR-A-S2-2200	Operations Zone – Proposed Sections	P01
1329-HAV-Z2-ZZ-DR-A-S2-1102	Safety Zone – Proposed Ground Floor and Roof Plan	P01
1329-HAV-Z2-ZZ-DR-A-S2-2101	Safety Zone – Proposed Elevations	P01
1329-HAV-Z2-ZZ-DR-A-S2-2201	Safety & Camp Zone – Proposed Sections	P01
1329-HAV-Z3-ZZ-DR-A-S2-1103	Camp Zone - Proposed Ground and Roof Plans	P01
1329-HAV-Z3-ZZ-DR-A-S2-2102	Camp Zone – Proposed Elevations	P01
1329-HAV-ZZ-ZZ-DR-A-S2-1104	Typical Anglers' Shelters Plans, Elevations and Sections	P01
1329-HAV-ZZ-ZZ-DR-A-S2-1105	Bike Shelter and Refuse Store Plans, Elevations and Sections	P01
N/A	Hillingdon Council New Building Insurance Requirements	N/A