



Report

Project	Swallowfield Way, Hayes
Report Title	Planning Fire Statement
Our Ref	HBH256/R1 Issue 3

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Report No. HBH256/R1
Issue No. Issue 3
Issue Date. 23/05/2023

	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6
Date	13/04/23	03/05/23	23/05/23			
By	WB	WB	WB			
Checked	LH	LH	RS			
Approved	RS	RS	RS			

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1.0 INTRODUCTION

1.1 Site Location and Description

The Site is located at Ainscough Crane Hire Site, 84 Swallowfield Way, Hayes, in the London borough of Hillingdon (UB3 1DQ).

The proposed development consists of the demolition of existing structures and redevelopment for Use Classes E(G)(iii), B2 and B8 (applied flexibly) including hard and soft landscaping, servicing and associated works.

This Fire Statement has been prepared by Jensen Hughes on behalf of Wrenbridge (FRELD Hayes) LLP ('the Applicant') in support of an application for full planning permission for the construction of a new warehouse facility. This facility will consist of four adjacent warehouses measuring 15.5m in mean roof height. The warehouses will contain first floor mezzanines and offices along with a ground floor reception located at the front of each warehouse unit as shown in the figure below. Plant decks will be provided above the first floor offices.

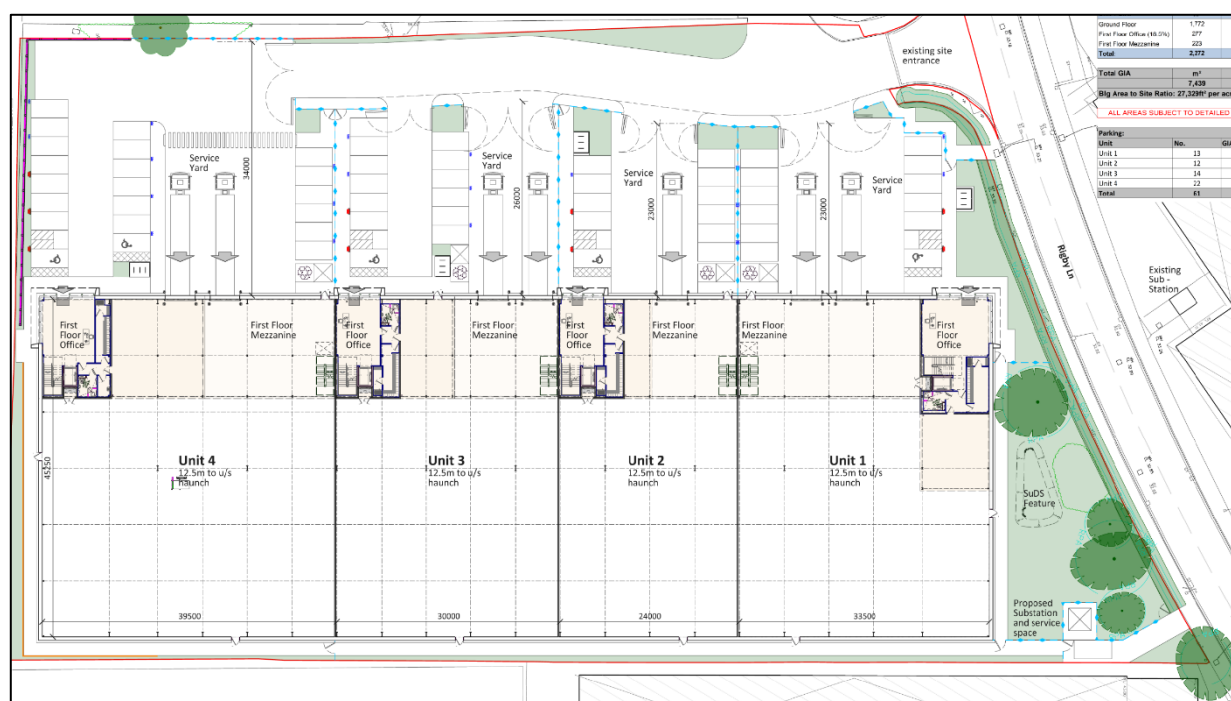


Figure 1: Proposed Warehouse Units

1.2 Aim of Fire Statement

This Fire Safety Statement report describes the main fire safety features, fire fighter access facilities and fire strategy principles in accordance with Policy D12(B) of the London Plan. It is intended to accompany the Planning Application for the building.

This statement has been produced by Jensen Hughes as an independent third party.

This report describes the fire strategy for Swallowfield Way, Hayes and only addresses life safety not property protection.

This report is not intended for Building Control or as part of the Building Regulations submission.

1.3 Relevant Guidance

The fire strategy for the building has been prepared using guidance in Approved Document B Volume 2 2019. Where appropriate, fire engineered solutions will be developed to support deviation from code guidance.

The works undertaken as part of the scope of this project will comply with the requirements of the Building Regulations relevant to fire safety.

1.4 London Plan

This fire statement has been developed to address compliance with D12(A1 to A6), D12(B) and D5 for dignified egress.

As required by the London Plan, Chapter 3 Design, the following will be achieved.

London Plan D12 Fire Safety - 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:

- 1) identify suitably positioned unobstructed outside space: - See Section 7.0
 - 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. - See Sections 5.0 and 6.0.*
- 3) are constructed in an appropriate way to minimise the risk of fire spread. - See Sections 6.0 and 8.0.*
- 4) provide suitable and convenient means of escape, and associated evacuation strategy for all building users. - See Section 4.0*
- 5) develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in. - See Section 4.0*
- 6) provide suitable access and equipment for firefighting which is appropriate for the size and use of the development. - See Section 7.0*

London Plan D12 Fire Safety - 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:

- 1) the building's construction: methods, products and materials used, including manufacturers' details – See Section 3.0*
- 2) the means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach – See Section 4.0*
- 3) features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans – See Sections 5.0, 6.0 and 11.0*
- 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 – See Sections 5.0, 7.0 and 11.0*
- 5) how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building – See Section 7.0*
- 6) ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures. – See Section 9.0 and 10.0*

Policy D5 Inclusive design

- A. *Boroughs, in preparing their Development Plans, should support the creation of inclusive neighbourhoods by embedding inclusive design, and collaborating with local communities in the development of planning policies that affect them.*
- B. *Development proposal should achieve the highest standards of accessible and inclusive design. They should:*
 - 1) *be designed taking into account London's diverse population*
 - 2) *provide high quality people focused spaces that are designed to facilitate social interaction and inclusion*
 - 3) *be convenient and welcoming with no disabling barriers, providing independent access without additional undue effort, separation or special treatment*
 - 4) *be able to be entered, used and exited safely, easily and with dignity for all*
 - 5) *be designed to incorporate safe and dignified emergency evacuation for all building users. In all developments where lifts are installed, as a minimum at least one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building. – See Section 4.0*
- C. *Design and Access Statements, submitted as part of development proposals, should include an inclusive design statement.*

1.5 Declaration

Provided that the design complies with the fire safety strategy and provisions mentioned in this statement, the fire safety of the proposed development and the fire safety information should satisfy the requirements of London Plan Policy D12A and the functional requirements of the Building Regulations. The draft Fire Safety London Plan guidance (Feb 2022) has also been considered when developing the fire strategy for these buildings.

Jensen Hughes (formerly JGA) have been employed to advise the design team in developing the fire strategy for the development. Jensen Hughes have extensive experience in developing high rise residential buildings in the UK and the rest of the world.

The report has been approved by Ross Skellett, MEng (Hons) AIFireE.

Ross is a Technical Director at Jensen Hughes with over 7 years of experience. Ross is working on a number of projects across the UK and has experience working on a number of international projects. These include new buildings and refurbishing or reconfiguring existing buildings. Ross has worked on a range of different buildings including shopping centres, residential, office, mixed use, leisure, educational and industrial. Ross is currently in interim CEng status with the IFE and awaiting the outcome of his CEng application.

As part of Jensen Hughes, Ross can draw from the experience of other fire engineers in the UK and around the world, which will ensure the quality and the robustness of the fire strategy developed for the project.

Report by:	William Barker, MEng
Checked by:	Lindsay Huffert, BSc(Eng)
Approved by:	Ross Skellett MEng (Hons), AIFireE

2.0 THE BUILDING'S CONSTRUCTION METHOD AND PRODUCTS AND MATERIALS USED

As required by the London Plan D12 B1, this section sets out the building's construction method and products and materials used as summarised below.

- Construction approach: The construction approach will be determined at the next stage.
- Building frame: The main structure will be a propped steel portal frame while the first-floor offices and plant decks will be constructed as a simple steel frame with steel beams supporting an in-situ concrete floor slab on composite metal decking. Internal separating walls between the warehouse and offices will be constructed in full height, fully insulated, non-combustible composite panel systems.
- Façade: The facades are proposed as a twin-skin built-up wall system constructed from metallic coated steel external sheets. Curtain walls will be constructed from a polyester powder coated aluminium system.
- Roofs: Steel cladding panels in a twin-skin built-up trapezoidal profile.

Building materials will be required to achieve the minimum standard for fire resistance as outlined within this statement for passive fire protection. All internal linings, external wall materials and roof coverings will achieve the minimum requirements of Building Regulation guidance documents, as discussed in Sections 5.0 and 7.0.

Building methodologies will be designed with consideration to fire safety of the neighbouring building and adjacent areas.

3.0 MEANS OF ESCAPE

3.1 Evacuation Strategy

Each unit will operate on a simultaneous evacuation strategy. This means that upon activation of the fire detection and alarm system, all occupants in that building will start their evacuation.

3.2 Occupancy

The occupancy of each unit has been assessed in line with ADB recommendations as follows: -

- Warehouses: 30m² per person,
- Offices: 6m² per person.

The reception has an assumed occupancy of two permanent members of staff, with transient occupants not included to avoid double counting.

The resulting occupancy for each building is summarised in the table below:

Unit Number	Use	Area	Occupancy
1	Warehouse	1834m ²	62
	Office	226m ²	38
			Total: 100
2	Warehouse	1223m ²	41
	Office	156m ²	26
			Total: 67
3	Warehouse	1526m ²	51
	Office	202m ²	34
			Total: 85
4	Warehouse	1995m ²	67
	Office	277m ²	47
			Total: 114

Table 1: Occupancies

3.3 Travel Distances

Distributed exits will be provided at the front and rear of each of the units. These exits will be located so that travel distances are within the limits of ADB in all areas of the scheme, i.e., 18m and 25m in a single direction in the office and warehouse areas respectively and 45m where more than one direction of escape is available. Travel distances have been shown in the figures below at ground floor level and in Unit 1 at first floor level.

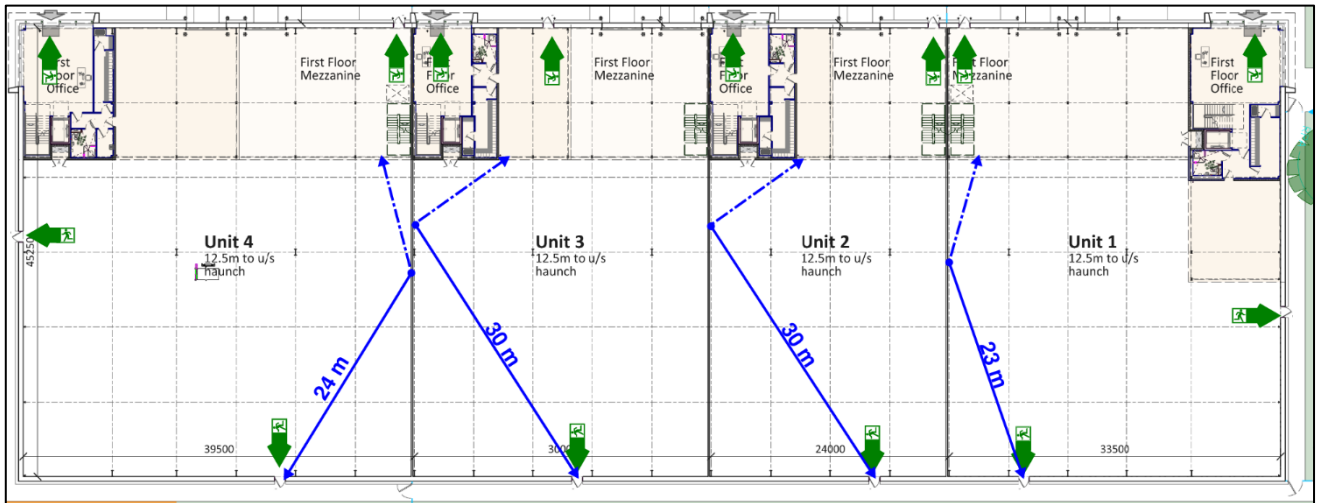


Figure 2: Ground Floor Travel Distances

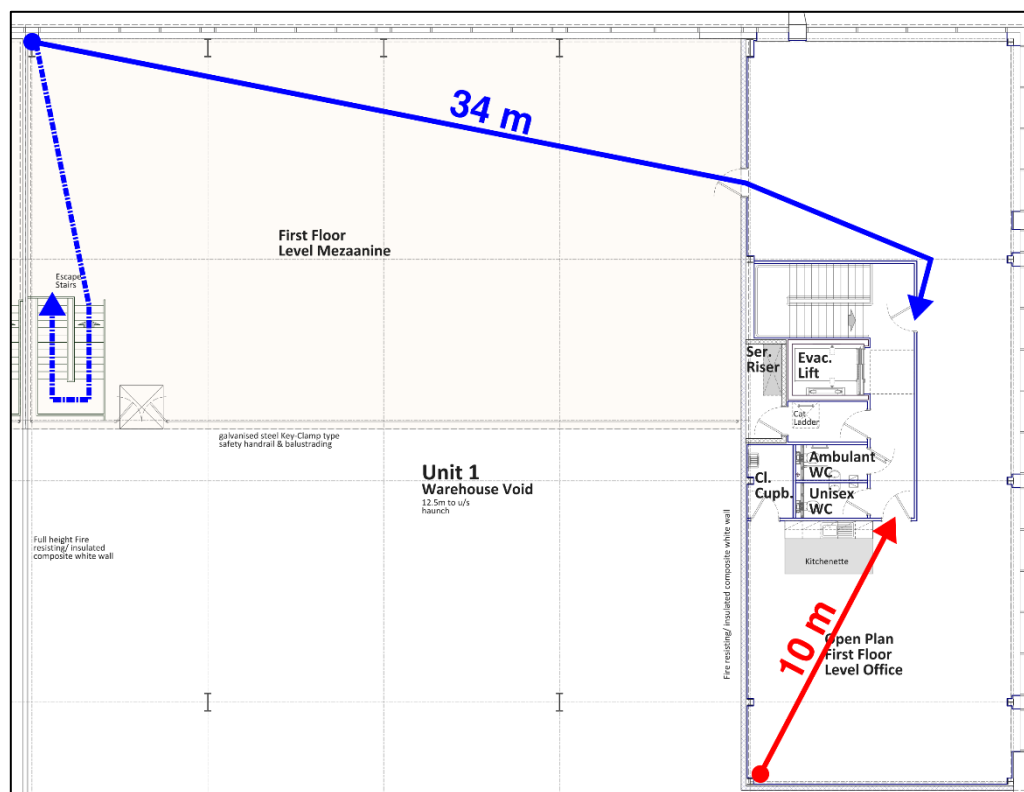


Figure 3: Unit 1 – First Floor Travel Distances

The fit out of the scheme will need to be designed to be within these limits.

Travel distances in the plant rooms extend to 15m pre-fit out. The fit out of the rooms should be designed so that travel distances are limited to 9m.

The roofs of each warehouse will be provided with a single escape route via an access hatch. Single direction travel distances on the roof will be limited to 60m in accordance with ADB.

3.4 Stairs

Each first-floor office will be provided with a single protected internal stair measuring at least 1m. These stairs will each provide capacity for 150 occupants, which is sufficient for the combined office and mezzanine occupancy in each warehouse.

The mezzanines will be provided with accommodation stairs onto the ground floor warehouse space. These accommodation stairs will serve as an alternative means of escape from the mezzanine in the event that a fire blocks access to the protected stair located within the office and will measure at least 1m.

The proposed stair arrangement is shown for Unit 4 below.

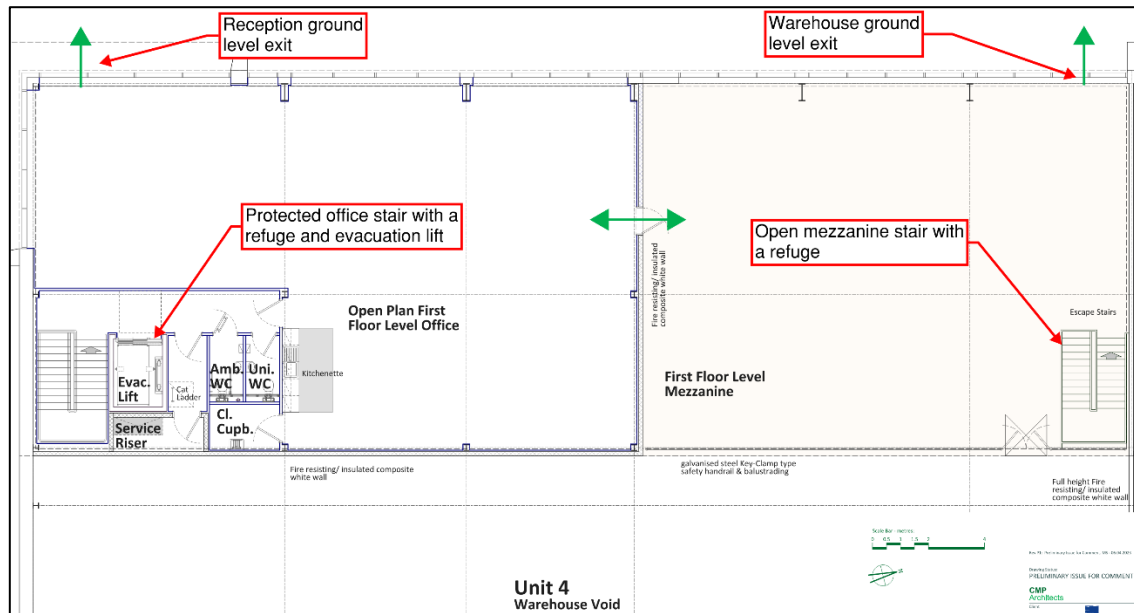


Figure 4: Stair Layout

3.4.1 Final Exits

The protected stair will exit via the ground floor reception for each unit. This is proposed on the basis that the reception will be limited to 10m² of fire load in line with ADB recommendations. The offices will also have an alternative escape route via the mezzanine accommodation stair in the event of a fire in the reception.

3.4.2 Plant Deck and Roof Ladders

The roofs and plant decks for each unit will be provided with a single escape route via a cat ladder enclosed in fire rated construction which opens into the protected office stair.

3.5 Storey Exits and Escape Capacity

The offices in each unit will be provided with two exits, one into the protected stair and one onto the mezzanine as shown in Figure 4. These exits will measure at least 850mm and will provide sufficient capacity to support the office occupancy.

The reception exits to outside in each unit will measure at least 1m clear width and will provide sufficient capacity to support the office stair and the low reception occupancy. If automatic opening doors are provided, these will fail open upon fire detection or loss of power.

The warehouses will be provided with distributed exits measuring at least 850mm clear width. These exits will provide sufficient capacity for the warehouses' occupancies.

3.6 Occupants of Reduced Mobility

Provisions will be made for the means of escape of disabled occupants via the inclusion of a lift suitable for evacuation in each unit. A management procedure will be developed as the scheme progresses.

To meet the requirements of Policy D5 of the London Plan, it is proposed that an evacuation lift will be provided within the protected stair core. This will allow the lift to be used as part of the evacuation strategy prior to the arrival of the fire and rescue service. The lift will be operated under the control of the fire safety manager or by someone trained and authorized in the use of the lift.

Disabled refuges will be provided in the protected stair and adjacent to the mezzanine accommodation stair in each unit and will be provided with Emergency Voice Communication Systems (EVC).

3.7 Inner Rooms

Each unit will contain a shower room accessed via a protected lobby into the locker rooms. This forms an inner-inner room arrangement.

This is proposed on the basis that the showers will be low occupancy and infrequently accessed. Additionally, travel distances from the shower are low (up to 10m) and a choice of escape is available into two separate fire compartments: the reception or the warehouse. The warehouse fire alarms will be audible from within the shower to alert occupants of a fire.

3.8 Locks on Escape Routes

Perimeter gates will be provided to the rear and side of Unit 1 and between Units 3 and 4 at the rear. These gates will be provided with electronic locks which will be designed to unlock upon loss of power or detection of a fire in any of the 4 units. These locks will be provided with manual overrides on the side of escape and will be designed in accordance with BS 7273-4: 2015.

4.0 ACTIVE FIRE SAFETY SYSTEMS

4.1 Sprinklers

Sprinklers will not be provided within the scheme.

As the units will be below 20,000m² in size and have a height below 18m, sprinklers are not necessary to comply with ADB guidance.

4.2 Fire Detection and Alarm System

A minimum L3 automatic fire detection and alarm system will be provided to the building in accordance with current BS 5839-1.

4.3 Smoke Control

The warehouse units will not be provided with smoke control.

4.4 Emergency Lighting

Emergency lighting will be provided in accordance with current BS 5266-1.

4.5 Escape Signage

Escape signage will be provided in accordance with current BS ISO 3864-1.

4.6 Emergency Power Supply

Life safety systems will be provided with a secondary back-up power supply where necessary to meet British Standards. The detailed design will be subject to further development.

5.0 PASSIVE FIRE SAFETY MEASURES

5.1 Structural Fire Resistance

Elements of structure for the offices, plant rooms and warehouse will achieve 60 minutes fire resistance.

The roof will contain plant such as PV panels. Structure supporting the roof will therefore achieve 60 minutes fire resistance. This may be reduced to 30 minutes subject to confirmation of the extent of rooftop plant provided. This will be developed as the scheme progresses.

5.2 Compartmentation

The office, reception and plant rooms will be separated from the warehouse space by 60 minutes fire rated compartment walls and floors in order to achieve firefighting perimeter access as discussed in Section 6.1.1.

The units will be separated from each other by 60 minutes compartment walls.

The protected stair and reception in each unit will be enclosed in at least 30 minutes fire rated construction.

The plant/roof access ladder will be enclosed in 30 minutes fire rated construction. The lobby connecting the ladder to the office protected stair will be enclosed in at least 30 minutes fire rated construction and will be kept fire sterile.

The ground floor lockers will be at least 30 minutes fire separated from the reception and protected stair.

The service riser will be enclosed in 60 minutes fire rated construction.

5.3 Cavity Barriers and Protection of Openings

Cavity barriers will be provided within any external wall cavities or floor voids in accordance with ADB.

Fire stopping will be provided to maintain the integrity of the fire separating elements in accordance with ADB.

5.4 Wall and Ceiling Surfaces

Wall and ceiling linings will be provided in line with the recommendations of the Section 6 of ADB as summarised by the table below:

Location	European Class (BS EN 13501-1)
Small room of area not exceeding 30m ²	D-s3, d2
Other Rooms	C-s3, d2
Circulation Spaces	B-s3, d2

Table 2: Wall and Ceiling Linings

6.0 ACCESS AND FACILITIES FOR THE FIRE SERVICE

6.1 Fire Service Access

6.1.1 Perimeter Access

Each unit will be accessed via the adjacent car park, accessed off of Rigby Lane.

The two central units, Units 2 and 3 (as labelled in the figure below), will be provided with 50% perimeter access. This is above the 15% perimeter access requirement of ADB.

The two end units, Units 1 and 4, will be sub-divided by fire resisting construction so the office and warehouse spaces form two separate fire compartments. The warehouse space in these units is below 2000m² and would require 15% perimeter access under ADB. These compartments will be provided with approximately 25% perimeter access via the front elevation, which is sufficient. The offices in these units will be accessed via a protected stair and will achieve 45m hose coverage. This is viewed to achieve the functional requirements of Building Regulations requirement B5(2).

Fire service access is shown in the figure below.

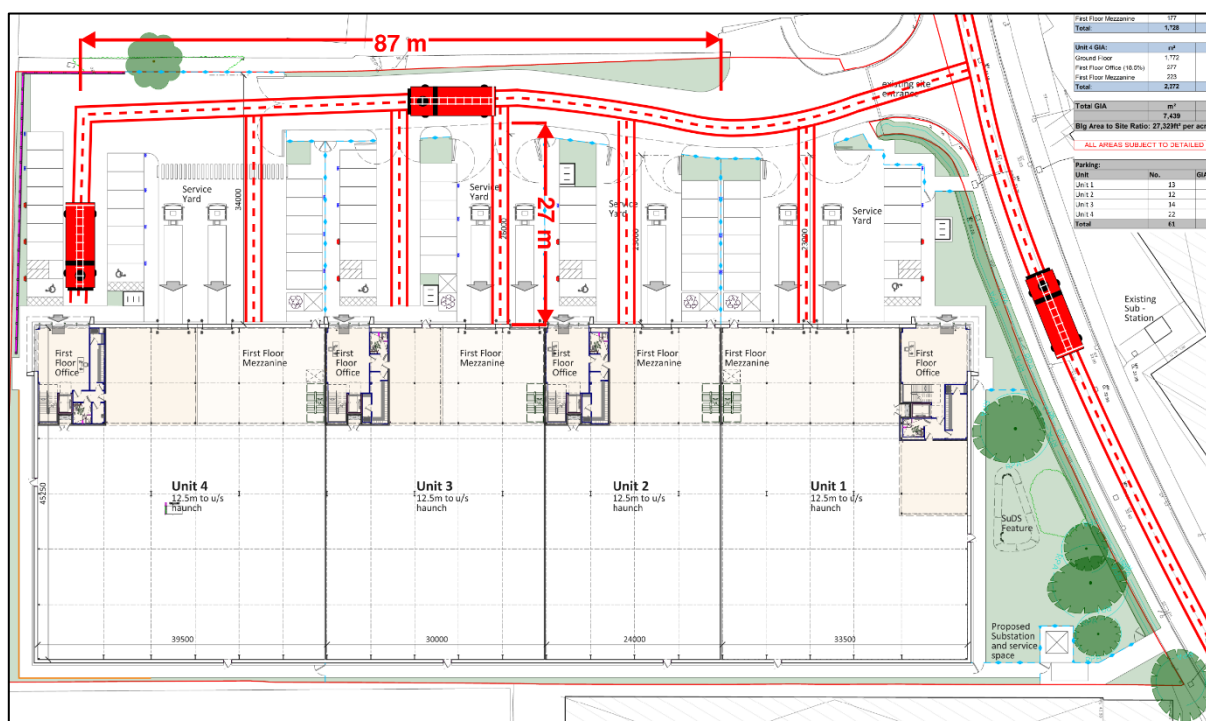


Figure 5: Fire Service Access

6.1.2 Fire Vehicle Dead End Access

Fire service access to the industrial site involves a dead end of 87m, as shown in Figure 5. ADB guidance therefore recommends that a turning facility is provided for fire vehicle access. However, a tracking study has been carried out by SLR which demonstrates that high reach fire vehicles can carry out a manoeuvre to turn around and exit the site from each parking area as proposed without designated turning facilities.

The distance from a reversing point for each individual unit is over 20m, extending up to 27m as shown in Figure 5. However, this extension is considered reasonable given the size of the units, the limitations / constraints of the site and that the access shown above will provide the fire service more than the minimum 15% perimeter access recommended by Building Regulations guidance; circa 30-50% of available perimeter respectively. In addition, the fire service can also access each unit via either the parking bays or the loading areas which will give greater operational flexibility for the fire service. Therefore, the access shown is considered to meet the functional requirements of the building regulations.

6.2 Fire Hydrants

The location of existing hydrants is currently unknown. If there is an existing fire hydrant within 100m of the entry points of each unit, then additional provisions will not be required. If there are no existing hydrants within 100m of each unit entry, then new hydrants shall be installed to be within 90m of each unit entry point.

7.0 ELEVATIONS

7.1 External Wall Build-up

The buildings are not relevant buildings and are therefore not subject to Regulation 7(2). As the buildings are below 18m in height and over 1m from the relevant boundaries, there are no specific Building Regulations restrictions on the materials used in the external wall build-up. However, for best practice, non-combustible materials are recommended to be used where appropriate.

7.2 External Fire Spread

The external elevations have been assessed using the BR187 enclosing rectangles method to determine the maximum unprotected area permitted on each elevation based on the site boundaries shown below. The results of this assessment are as follows: -

- The East elevation will be fully protected by construction achieving at least 60 minutes fire resistance for integrity and 15 minutes for insulation from the inside,
- The North elevation is permitted up to approximately 29% unprotected area (211m²), the remaining area will achieve at least 60 minutes fire resistance for integrity and 15 minutes for insulation from the inside,
- The West and South elevations are permitted to be fully unprotected.

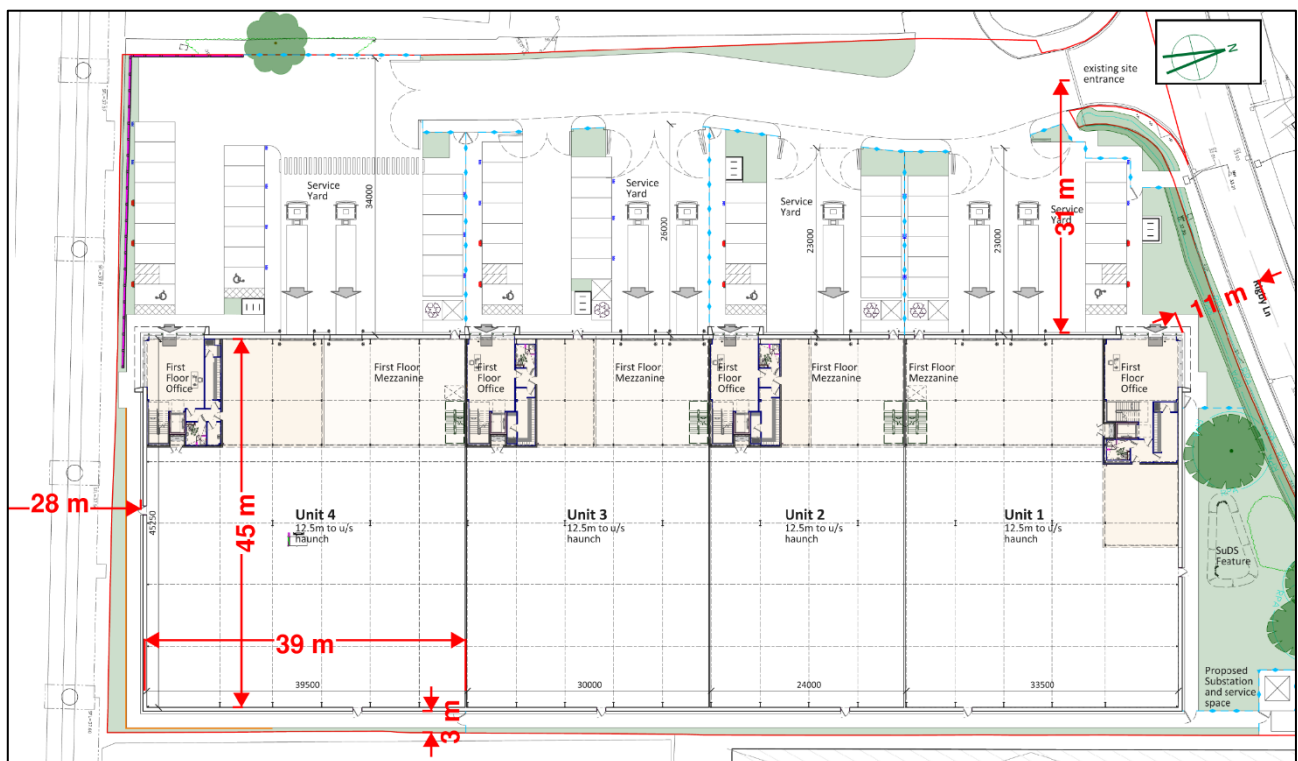


Figure 6: Site Boundaries

7.3 Roofs

Roof materials will achieve B_{roof} (t4) classification where parts of the roof are located within 6m of the relevant boundary.

Roof materials will achieve C_{roof} (t4) classification where parts of the roof are located at least 6m from the block relevant boundary.

8.0 MANAGEMENT

Management procedures have not been developed at this stage of the project. However, any areas requiring a level of management and a management strategy will be provided as necessary. This will be developed at a later stage.

The building fire strategy document will form part of the building regulations application. This will also be used to inform any future alterations to the building to ensure that the fire safety measures and strategy is not compromised.

The building owners will be responsible for implementing a management plan for the ongoing maintenance of fire safety installations and the provision of safe access routes to and within the buildings. These plans shall be in line with the requirements of the Regulatory Reform (Fire Safety) Order and relevant British Standards for the fire safety equipment.

9.0 FUTURE PROOFING – THE GOLDEN THREAD OF INFORMATION

In line with the recommendations for providing a 'golden thread' of information, digital records of the fire safety components during the design and construction phases will be recorded. Records will be initiated by the relevant duty holders during the design and construction phase. On completion of work the records will be handed over to the building owners to maintain for the life of the building.

A Fire and Emergency File (FEF) will be established for this development to record prevalent information throughout the design, construction and life of the building. The FEF will include this fire statement and subsequent fire strategies as outlines of the key fire safety design provisions of the building, including assumptions of fire loads, occupant characteristics, evacuation strategies, passive fire safety measures, active fire safety systems, fire safety equipment, key fire properties of building materials, access for fire and rescue services. As the design develops relevant documents shall be recorded including technical specifications and product datasheets, detailing specific information on the building materials, safety systems and equipment. On completion of construction the commissioning documents and the operation and maintenance manuals shall be recorded. Throughout the life of the building regular inspections and maintenance are required to ensure the fire strategy is upheld and fire safety systems are operational. Records of inspections, fire risk assessments and maintenance work shall be recorded.

The details of the information retention systems will be determined by the client.

Modification of the following elements of the building may adversely affect the original fire safety strategy:

- Fire detection and alarm systems
- Fire suppression systems
- Increasing population
- Changing the use of the areas
- Escape routes
- Number and dimension of escape stairs
- Refuge areas
- Wall and ceiling linings
- Fire protection of the building structures
- Changing fire and smoke doors
- Changing, penetrating fire compartments, cavity barriers
- Increasing fire load in certain areas
- Creating, changing openings on the external envelope
- Changes in the external envelope of the building
- Changes in the environment of the building related to the fire service access points and parking.

10.0 INFORMATION, LIMITATIONS AND ASSUMPTIONS

The information limitations and assumptions used in the preparation of this report are noted below: -

Drawings

This report is based on drawings issued to us. Dimensions have been taken from these drawings. The following drawings were used: -

- H067-CMP-SI-ZZ-DR-A-00100_P12_ Proposed Site Plan
- H067-CMP-SI-ZZ-DR-A-00200_p1_Proposed Elevations
- H067-CMP-U1-01-DR-A-00121_p1_ Unit 1 FFL Core Plan
- H067-CMP-U1-02-DR-A-00122_p1_ Unit 1 Plant Level Core Plan
- H067-CMP-U1-ZZ-DR-A-00250_p1_ Unit 1 Typ Cross Sections
- H067-CMP-U2-01-DR-A-00101_p1_ Units 2 and 3 FFL GA Plan
- H067-CMP-U4-01-DR-A-00121_p1_ Unit 4 FFL Core Plan
- H067-CMP-U4-02-DR-A-00122_p1_ Unit 4 Plant Core Plan
- H067-CMP-U4-ZZ-DR-A-00250_p1_ Unit 4 Typ Cross Sections

Building Regulations

This report considers building regulations, which deal with life safety. Property protection and insurance issues are not addressed in this report. Guidance on property protection and insurance requirements can be found in the document *Approved Document B: Fire Safety (Volume 2) – Buildings other than dwellinghouses Incorporating Insurers' Requirements for Property Protection*, RIBA Publishing 2015.

Other Limitations

Complying with the recommendations of this report will not guarantee that a fire will not occur.

Unless otherwise described in this report, the fire strategy assumes that the building design, the mechanical and electrical systems, construction methods and materials specifications will comply with current Building Regulations guidance, and relevant British Standards and Codes of Practice. The design of mechanical and electrical systems such as fire alarm and sprinklers is a specialist area. Fire Strategy recommendations are given in this report, however, the design and specifications need to be developed at the appropriate stage in consultation with the specialist designers of these systems.

This report has been prepared for the sole benefit, use and information of Wrenbridge (FRELD Hayes) LLP and the liability of Jeremy Gardner Associates Limited, its directors and employees in respect of the information contained in the report will not extend to any third party.

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