



Title: Beaches Yard - Fire Statement
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Marshall Fire Ltd.
Beaches Yard - Fire Statement

Revision	Description	Author	Approver	Date
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1. Introduction

1.1 Overview

Marshall Fire has been appointed by Anthony Horne, to provide a fire statement for the proposed works at Beaches Yard, Horton Road, West Drayton, Hillingdon, UB7 8HX. Our role is therefore to assist in steering the scheme towards compliance with Part B of the Building Regulations.

As of the 1st August 2021 The Town and Country Planning (Development Management Procedure and Section 62A Applications) (England) (Amendment) Order 2021 came into force which introduces changes as 'planning gateway one' into the planning system. At the planning stages of a development this requires completion of a Fire Statement Form or production of a Fire Statement that is produced in line with Fire Safety Gateway Guidance that will form part of the planning submission.

As the project is located within the Greater London Authority (GLA) region and therefore should support the design intent of the London Plan Policy D12 and part of Policy D5 where applicable to fire safety.

This Fire Statement will consider the evolution of the development and the principles of the golden thread concept and will form the basis of the developing Fire Strategy.

The 'Golden Thread' refers to a concept where the fire safety information of a building is to be updated and maintained through 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. The fire safety information provided at planning application stage should be developed to inform the overall fire strategy for the development. When passing fire safety information to subsequent development stages, consideration should be given to the accessibility, accuracy and relevance of the information to ensure the development is constructed as it has been designed and originally specified.

1.2 Purpose of this report

The purpose of this report is to review the proposals in terms of the Fire Safety Gateway Guidance and to demonstrate the development meets the highest standards of fire safety, proportionate to the size and nature of the development.

It is considered a planning requirement to provide a fire statement and best practice to follow the structure given in guidance to the London Plan requirements.

This Fire Statement also covers the following:

- Local plan for Hillingdon June 2020 – section on fire statements.
- Hillingdon validation checklist. (Points relating to Fire Safety on page 34)

It should be noted that the project will still need to comply with the requirements of the Building Regulations and therefore the information presented herein may be developed further such that compliance with the requirements of the Building Regulations is demonstrated.

The contents of this report should therefore not be considered sufficient to form a part of the Building Regulations submission for the project and Building Regulation approval should be considered a risk until such time that approval in principle has been granted by the appointed Building Control Body.

The findings of this statement are based on the information available at the time of review. Marshall Fire cannot be held responsible for any subsequent changes to the design that we are not made aware of.

1.3 Scheme description

The proposed scope of works relates to the construction of a warehouse building with 4,154sqm warehouse space and 717sqm yard at the Beaches Yard, Horton Road, West Drayton, Hillingdon, UB7 8HX (London Borough of Hillingdon).

The main access to the site is from the access road to the west of the site that leads onto Horton Road. The access road leads into a covered loading bay at ground floor and provides access to car lifts that lead to the basement car park.

The building will provide warehouse space with 2414sqm of area at ground floor and 875sqm at first floor. There is also office space at second floor of 480sqm. Both first and second floor levels access via two stair cores.

The stair to the west also includes a lift and serves directly up to the offices at second floor. The stair to the east serves up to second floor roof and is connected to the office area by an external walkway.

The basement level is about 2.5m below ground with second floor at about 13m above ground.



Figure 1: Site Location (Courtesy of Google)

2. Fire Statement

2.1 Section 1: Site address

The development is located at Beaches Yard, Horton Road, West Drayton, Hillingdon, UB7 8HX.

2.2 Section 2: Description of proposed development including any change of use

The project consists of construction of a new warehouse building, with 4,154sqm of warehouse space and 717sqm yard. There is also office space of 480sqm provided at second floor level.

In accordance with Approved Document B to the Building Regulations the building will be designated as Purpose Group 7(a) Storage and other non-residential.

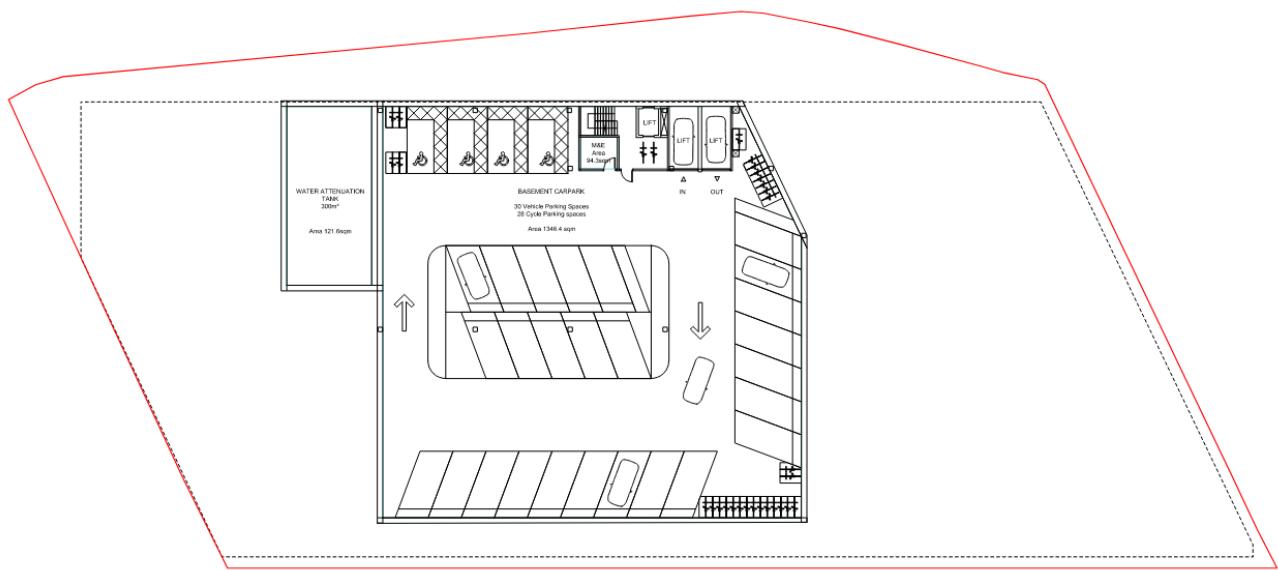


Figure 2: Proposed Works at Basement

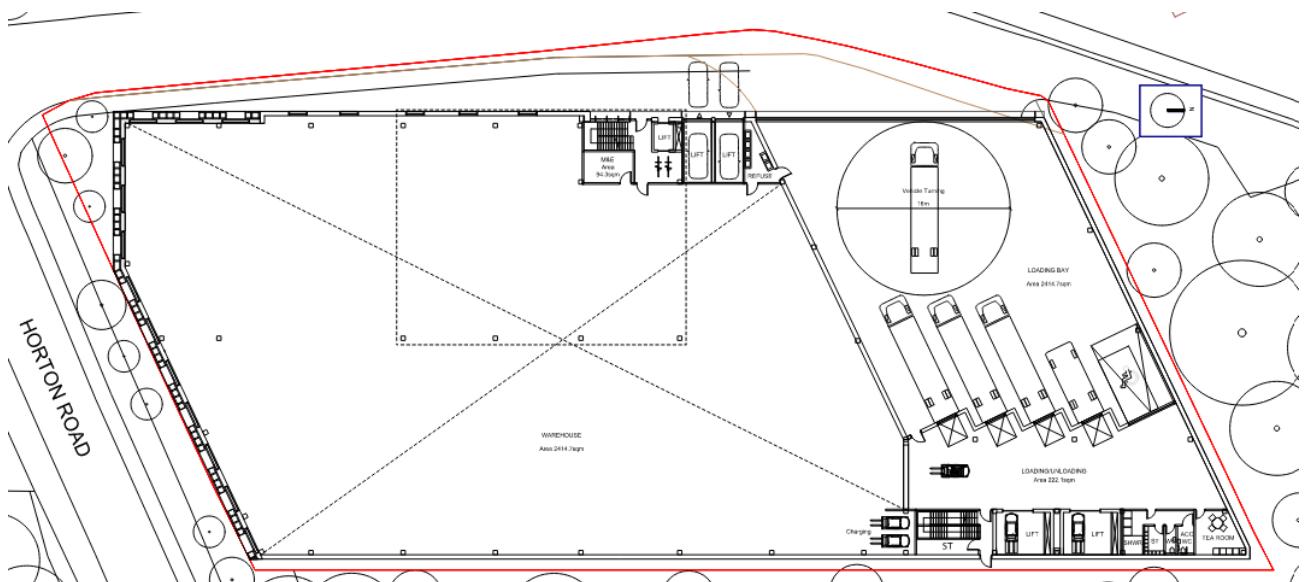


Figure 3: Proposed Works at Ground Floor

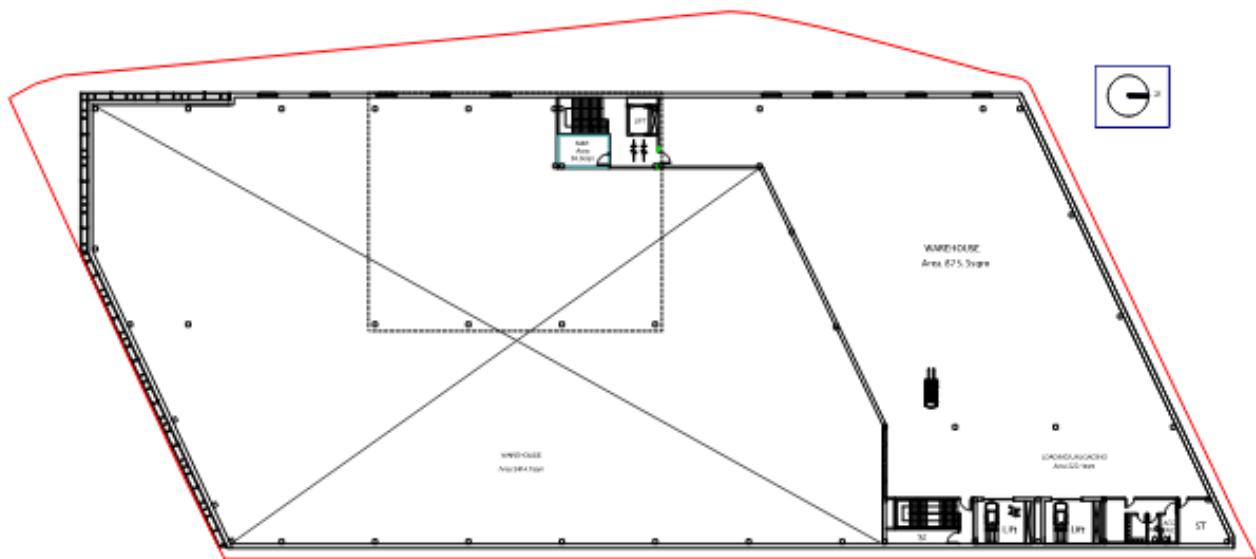


Figure 4: Proposed Works at First Floor



Figure 5: Proposed Works at Second Floor

The following tables provide a summary of the buildings fire strategy and key parameters.

Table 1: Building Fire Strategy Summary

Description	Provision
Design guidance	Design development will be based on guidance given in Approved Document B – Volume 2019 Edition incorporating 2020 amendments.
Purpose Group	Storage and other non-residential: 7(a).
Building height	Basement: -2.5m Second floor: +13m
Evacuation strategy	Simultaneous evacuation of warehouse, office and car park.

Description	Provision
Fire detection	BS 5839-1 Category L1
Fire alarm notification	Sounders with visual alarm devices and capacity to provide tactile alarm devices such as vibrating pillows.
Structural fire resistance rating	60 minutes
Compartment floors	Second floor office to be arranged as separate compartment.
Sprinkler protected	Approved Document B permits Storage buildings with a maximum floor area of any storey in the building up to 20,000sqm without sprinklers providing there is no floor greater than 18m above ground. No sprinklers provided in shell and core.
	No
Mobility impaired evacuation	Lift will be arranged as an evacuation lift. Refuges with emergency voice communication systems provided in the other escape stair in accordance with BS 5839-9.
Dry/wet riser	Yes dry riser to main west core to serve second floor office.

Table 2: Building Key Parameters

Floor	Area	Floor space factor	Occupants	Escape Provision
Second - office	480m ²	6m ² /person	80	Two stair cores (one with lift)
First - warehouse	875m ²	30m ² /person	30	
Ground - warehouse	2414m ²	30m ² /person	81	Escape via cores and exits direct to outside.
Basement – car park	1346m ²	2 persons per space	60	Two cores both with stairs (one with lift)
Total			191 (car park occupants not included as already accounted for)	

2.3 Section 3: Name of person completing the fire statement and relevant qualifications and experience

This document was completed by Richard Baker. He has a BSc (Hons) in Fire Safety Engineering and has more than 25 years experience in Fire Safety Engineering and is a Technical Director at Marshall Fire Ltd.

Richard has a high level of understanding of the functional requirements to the Building Regulations and how to develop designs to achieve compliance. He has worked on a wide range of projects including commercial, mixed use and residential developments across the UK and internationally from project conception (RIBA Stage 2) through all design and construction phases to commissioning and completion.

This document was reviewed by Tony Hamilton. He has a BSc (Hons) in Building Surveying and is a Fellow of the Chartered Association of Building Engineers and has more than 18 years of experience in fire safety and is a Technical Director at Marshall Fire Ltd.

Tony has a high-level understanding of the functional requirements of the Building Regulations 2010 and has applied fire safety standards to a wide range of commercial, industrial and residential buildings across England and Wales.

2.4 Section 4: State what, if any, consultation has been undertaken on issues relating to the fire safety of the development; and what account has been taken of this

No pre-app has been undertaken on Fire Safety. We are not aware of any other consultation to date that have been undertaken.

2.5 Section 5: Site layout plan as per building schedule referred to in section 6

Refer to Figure 1 of this Fire Statement

2.6 Section 6: Building schedule

Table 3: Buildings Schedule Table

Notes: The principle guidance will follow that given in Approved Document B – Volume 2.

	Site Information			Building Information		Resident Safety Information		
Floors	Height (m)	Occupants	Proposed use	Construction	External Wall Systems	Evacuation approach	Sprinklers	Accessible housing provided
Second	+13m	80	Office	Steel frame with reinforced concrete floors.	External walls to be of insulated panel system.	Simultaneous	None provided under shell and core.	N/A Non residential
First	+5.5m	30	Storage			Simultaneous		N/A Non residential
Ground	0m	81	Storage			Simultaneous		N/A Non residential
Basement	-2.5m	60	Car park/plant	None	Basement level = no external walls.	Simultaneous		N/A Non residential

2.7 Section 7: Specific technical complexities

The Fire Strategy will be further developed using guidance from Approved Document B – Volume 2: Buildings other than dwellings: 2019 Edition incorporating 2020 amendments. The evacuation will be based on a simultaneous evacuation. An investigation delay period can be introduced by the operator providing there is a robust management plan in place to support such a strategy.

The automatic fire detection and alarm system will be designed and installed in accordance with BS 5839-1:2017 and arranged as a Category L1 system. With this type of system, automatic fire detectors are provided in all areas. Areas where the atmosphere could cause false activation of smoke detectors, such as loading bay and car park will be provided with heat detectors or combined heat and smoke detectors. The system will also be provided with manual call points generally located adjacent to each storey exit. A fire alarm signal will be broadcast via electronic sounders and visual alarm devices where audibly impaired occupants could be occupied in isolation. The system shall also have capacity to support tactile alarm devices such as pagers.

Approved Document B permits Storage buildings with a maximum floor area of any storey in the building up to 20,000sqm without sprinklers providing there is no floor greater than 18m above ground. No sprinklers provided as part of the shell and core.

The elements of structure including beams, columns, loadbearing walls and floors will be protected to provide not less than 60 minutes resistance to fire.

The second floor office area will be arranged as a compartment floor, having a fire resistance achieving not less than 60 minutes fire resistance as equal to the elements of structure. The stair cores will be arranged as protected shafts and will be fire separated with 60 minutes fire resistant construction including fire doors rated as FD30S with self-closers.

There is an alternative escape route from the office area at second floor via an external walkway across the roof to the stair core to the east of the building. The external escape route will be provided with emergency lighting, non-slip surface and guarding. The escape route will be protected from below with a fire resistant floor that extends 1800mm either side of the walkway. All elements supporting the roof and protected zone will be suitably fire rated.

Travel distances to the nearest storey escape within the building will be in accordance with limits set out in Table 4 below and are based on storage of 'normal hazard' goods. Where travel within dead end areas of corridors is greater than 2m the corridor will be arranged as a protected corridor. Any corridor connecting two storey exits will be provided with a cross corridor door set, with a FD30S within a 30 minute fire rated division .

Table 4: Limits on Escape Travel Distances

Location	Maximum permitted travel distance	
	One-way travel	Two-way travel
Warehouse	25m	45m
Car park	25m	45m
Office	18m	45m

Fire service access to the building is in accordance with AD B for a building with a total floor area less than 8000m² and a floor greater than 11m should have fire service vehicle access suitable for a high reach appliance available to 50% of the building perimeter. The west and south elevations will have suitable hardstanding not less than 4.9m from the external façade and so provide the necessary 50%. If this is not achieved the building will require dry rising mains within protected stair/cores so that every part of the floor can be reached within 45m along a route suitable for laying fire hose. Given the office is above 11m from ground a dry riser system serving the second floor would be of benefit for undertaking firefighting operations at this floor.

The basement will provide car parking. All areas will be provided with 60 minutes fire resistant construction and FD30S fire doors. The basement car park will need to be served two storey exits.

Smoke clearance to the basement car park will be provided by a mechanical extract system designed to provide 10 air changes per hour and operate at a temperature of 300°C for a period of not less than 1 hour.

Any ventilation services to or crossing protected escape routes will have smoke detector operated Type ES fire dampers.

The lift serving first and second floors, will be arranged as an evacuation lift for assisted evacuation operation as given in BS EN 81-20, and BS EN 81-76. This is based on the building characteristics as having onsite management to assist with the evacuation.

Ongoing maintenance and management of the lift will be in line with BS EN 81-20, BS EN 81-76, and any other applicable codes of practice and manufacturer's recommendations. A backup power supply will be provided to all life safety systems in accordance with guidance.

A muster point is to be identified so that in the event of a fire the occupants can escape to a safe place away from the building. This will need to be outside of the building and lead to an ultimate place of safety. The pavement/forecourt in front of the adjacent unit at 241A Horton Road would be suitable, and exact location will be developed by the operator by considering safe locations to cross the road and further directions to the location.

The external wall construction will be an insulated panel type system with the south elevation and part of the west elevation having a 'green wall'. Given the use and size of the building this is considered with regards to extent and orientation of combustible materials. The building will operate a simultaneous evacuation with ground and first floor as a single compartment. As no floor is greater than 18m above ground and the use of combustible insulation would not extend across internal compartments the use of insulated panels in this instance is deemed as acceptable.

All fire safety features, both passive and active, that have been introduced to reduce the risk to life in event of fire will be subject to ongoing management plan for the premises. This will set out the details of operations and maintenance plans as well as ongoing monitoring activities.

2.8 Section 8: Issues which might affect the fire safety of the development

Provision of a suitable hardstanding to allow aerial fire appliance access within 4.9m of the south faced will be required in detail design.

There are no significant other departures from guidance and so no issues affecting the approving authorities sign off.

2.9 Section 9: Local development document policies relating to fire safety

The project is located within the Greater London Authority (GLA) region and therefore should support the design intent of the London Plan Policy D12 and part of Policy D5 where applicable to fire safety.

To this, the appendices of the draft Fire Safety, London Plan Guidance contain template forms for Fire Statements. The forms serve as checklists for compliance for the GLA's fire safety policies (D5 and D12). To check whether compliance with D5 has been achieved, these forms state:

"Where a lift core is provided, at least one lift is an evacuation lift" (pages 29 and 30).

This clarifies the meaning of "as a minimum at least one lift per lift core...should be a suitably sized fire evacuation lift" – i.e. it confirms to the requirements for evacuation lifts and applies only to lift core and would not apply to the core containing only an escape stair that does not include a lift.

The proposed development will meet London Plan Policy D5 Part B5 for safe and dignified emergency evacuation, through provision of a evacuation lift that can be deployed for managed evacuation. The Lift Core within proximity to the office, will be provided with a disabled refuge including an emergency voice communication outstation on the main landing.

Dignified escape from basement is available via the lift that connects to ground floor entrance to Basement. Should there be a fire event in the basement, disabled occupants would proceed to the evacuation lift in the Lift Core and with assistance from management will be able to make their escape.

Based on an 8 to 13 person lift a single wheelchair user and assistant can be accommodated at one time. With approximately 15 second travel time and 7 second door open/close cycle each person will take 30 seconds to evacuate. With assistant/management returning to floor and repeating cycle, we would estimate evacuation of up to 4 disabled occupants at either basement or second floor to take about 7 minutes. The management plan will adopt a Personal Emergency Evacuation Plan (PEEP) for all occupants who may require assistance in evacuation so their likely location can be identified, and assistance can be deployed at the earliest opportunity. This would reduce the pre-movement time, from detection and movement time to the refuge with occupants being assisted to assemble at the lift lobby. With an evacuation time to the protected escape route of not more 2-3 minutes and then evacuation of disabled occupants from the fire floor should be completed in 10 to 15

minutes. With Fire Service response, arrival and set-up time expected to be greater than 15 minutes then the building should be evacuated and clear for firefighting operations to commence.

Wayfinding signage which will benefit occupants and firefighters will be provided at all main landings and lobbies to stairs.

As part of a planning request, a London Plan Fire Statement is required to identify the fire safety preliminary design. As part of planning request, a London Plan Planning Fire Statement Strategy is sought by draft fire safety guidance to identify compliance with Policy D12 Part A. This is set out below:

- “1) identify suitably positioned unobstructed outside space:*
- a) for fire appliances to be positioned on*
- b) appropriate for use as an evacuation assembly point”*

The fire appliance will approach the main entrance on the access road off Horton Road. As demonstrated in Figure 4.

An evacuation assembly point will be identified at a safe place at the front of the building as noted in Section 7 above. The pavement/forecourt in front of the adjacent unit at 241A Horton Road would be suitable, the exact location will be developed by the operator by considering safe locations to cross the road and further directions to the location.

“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”

The fire strategy for the site will incorporate the appropriate features to reduce risk in the event of a fire. Detail on fire detection and alarm systems, other active fire safety systems and passive fire safety provisions are set out in Section 7 and are sufficient to meet this policy requirement.

“3) are constructed in an appropriate way to minimise the risk of fire spread”

The building is to be constructed to have 60 minutes fire resistance and corridors are to have 30 minutes fire resistance. Section 7 sets out further details of how fire spread is minimised by compartmentation.

“4) provide suitable and convenient means of escape, and associated evacuation strategy for all building users”

A simultaneous evacuation strategy is proposed for the Building. . The means of escape routes are shown on Planning issue drawings by Nick Wilson Architects as:

- 0203-008 - Basement Car Park
- 0203-004 – Ground Floor Plan
- 0203-005 – First Floor Plan
- 0203-006 – Second Floor Plan

“5) develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in.”

The evacuation strategy set out in the fire strategy drawings will be periodically updated and published.

“6) provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.”

The provision firefighting access will be in accordance with guidance given in ADB that is suitable for the size and use of the development. Figure 4 demonstrates the hydrant locations and fire service vehicle siting. Further detail on firefighting access and equipment is set out in Section 10 to 12.

Policy D12 Part B requires that all major development proposals should be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party, suitably qualified assessor. This statement details how the development proposal will function in terms of:

“1) the building’s construction: methods, products and materials used, including manufacturers’ details”

Construction methods, products and materials used will be developed by the design team in strict accordance with guidance to the Building Regulations. Manufacturer's details and installations will be continually monitored through the procurement.

"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"

The building design has suitably located and sized escape stairs to accommodate safe escape routes from the building along with a Lift Core that will accommodate disabled users with assistance from management.

"3) features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans"

The building is to be fitted out with a suite of fire safety systems including, detection and alarm system, emergency lighting, and signage. These together with the passive measures (fire rated walls and doors) and ongoing management and maintenance plans will provide a robust life safety strategy for the occupation of the building.

"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"

Sections 2.10 – 2.14 set out the strategy with regards to firefighting access and equipment to undertake firefighting operations.

"5) how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building"

Access to and around the site is available directly by public highways with the main access point into the west core from the access road off Horton Road providing access directly into the escape stair, which will be provided with a dry rising main.

"6) ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures"

A robust management operation plan will be put in place to ensure that the building is maintained during its use and that any future modifications are assessed against existing provisions prior to being undertaken.

2.10 Section 10: Fire service site plan

Fire service access to the building is from Horton Road to the main entrance on the access road. providing access to the main entrance.

The mechanical and electrical engineers will develop the detailed design, providing a site plan with the hydrant locations for the site/area and will identify the dry riser inlet/outlet locations as part of Section 12 and Section 14. Figure 4 indicates the main firefighting access point.

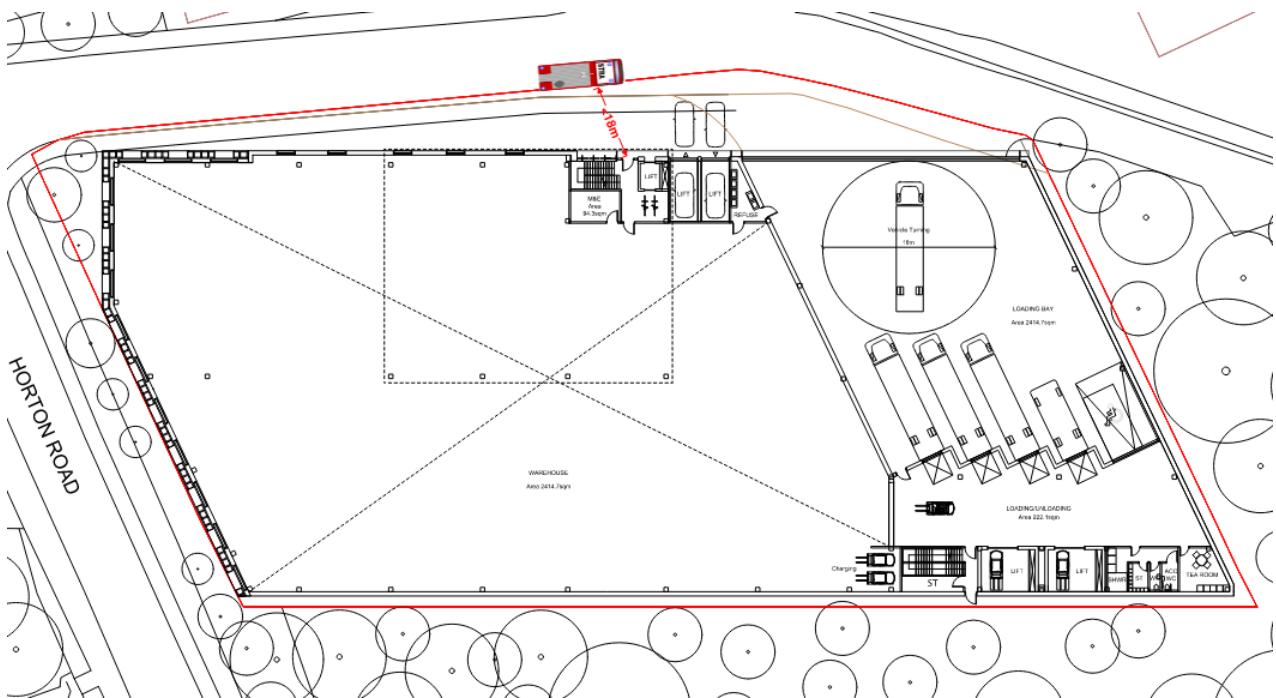


Figure 4: Indicative Fire Service Vehicle Access and Hydrants

2.11 Section 11: Emergency road vehicle access

Firefighting access is key for successful firefighting and therefore the appropriate provisions must be made regarding site access.

The main entrance on the access road of Horton Road provides access into the main Lift Core entrance and is within 18m of the fire service vehicle access.

Firefighting vehicle access is available directly from adjacent roads with no dead-end conditions or access gates imposed.

Table 5: Pump appliance access route requirements

Appliance Type	Min. width of road between kerbs	Min. width of gateways	Min. turning circle between kerbs	Min. turning circle between walls	Min. clearance height	Min. carrying capacity
Pump	3.7	3.1	16.8	19.2	3.7	12.5*
High Reach	3.7	3.1	26.0	29.0	4.0	17.0*

Note: * The minimum carrying capacity should be checked with the local fire brigade.

2.12 Section 12: Siting of fire appliances

Siting of the fire appliances will be in front of each buildings main entrance. This has been illustrated in Figure 4.

The design team (Mechanical and Electrical Engineers) will provide a site plan with the above items which will support the design intent, this is part illustrated in Section 10.

2.13 Section 13: Suitability of water supply for the scale of development proposed

Existing hydrant locations around the site will be checked to ensure hydrants are located within 100m of each entry point to the building and not more than 90m apart. The water supplies will be via the towns mains.

2.14 Section 14: Fire service site plan

The design team will provide a site plan as stated in Section 12. See also Figure 4.

2.15 Section 15: Signature

The following overview has been produced by Richard Baker.



2.16 Section 16: Date

The following fire safety statement is dated **21/09/2022**.

2.17 Conclusion

Having reviewed the documentation issued to Marshall Fire Ltd, we agree with the overall design proposals and conclusion presented in the drawings for the works at Beaches Yard, Horton Road are deemed to satisfy the preliminary fire safety design.

It is considered the scheme meets London Plan Policy D12 and part of Policy D5 where applicable to fire safety. The evolution of the design development and the principles of the golden thread concept and will form the basis of the developing Fire Strategy through further design, construction and operating of the building.

We would however reiterate that the findings are limited to the information reviewed and subject to further findings/investigations to the existing as built conditions.

3. References

- i.** Approved Document B – Volume 2: Buildings other than dwellings, 2006 Edition incorporating 2010 and 2013 amendments.
- ii.** Approved Document B – Volume 2: Buildings other than dwellings, 2019 Edition incorporating 2020 amendments.
- iii.** BS 9999: 2017, Fire safety in the design, management and use of buildings – Code of practice.
- iv.** Fire Statement Guidance, Annex D Gov.co.uk
- v.** BS 5839-1:2017, Fire detection and fire alarm systems for buildings. Part 1: Code of practice for design, installation, commissioning, and maintenance of systems in non-domestic premises.
- vi.** BS EN 12845: 2015 Fixed Fire Protection Systems – Automatic sprinkler systems – Design, installation and maintenance.