

# SOCOTEC

PLANNING FIRE STATEMENT

## London Covent Garden

Project no. 165506

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# 1 INTRODUCTION

## 1.1 Description of Development

- 1.1.1 SOCOTEC UK Limited (herein referred in as SOCOTEC) has been appointed by QUARTZ (herein referred in as Client) to develop a Planning Fire Safety Statement (herein referred in as PFSS) in support of the planning application to be submitted for the proposed self-storage areas at an existing multi-storey car park located at Parker Mews, WC2B 5NT, London.
- 1.1.2 This is Issue 2 of the report, updated following the design team comments. All changes to the text have been highlighted as indicated here.
- 1.1.3 The carpark has 4 levels below ground and the vehicle entrance is at the lower ground level from Parker Mews (off Parker Street). The depth of the lowest level is not confirmed at this stage and is estimated to be approximately 12 m below the ground level. The carpark is staffed and operates 24/7 for public use.
- 1.1.4 There are two buildings above the carpark. One is a Residential Tower with 14 levels above the ground. The height of the tower is estimated to be approximately more than 40 m above the adjacent ground level. The other is the Theatre Building with 5 levels above the ground. The height of the building is estimated to be approximately more than 30 m above the adjacent ground level.
- 1.1.5 The entire carpark has approximately 330 car parking spaces over 4 floors with a total Gross Internal Area (GIA) of approximately 11,500 m<sup>2</sup> including the common stairs, plant rooms and car parking space.
- 1.1.6 The project involves conversion of three levels, level 4,5 and 6 of the carpark into self-storage areas.
- 1.1.7 SOCOTEC UK has previously prepared a retrospective fire safety strategy report for the car park (Doc. Ref. TX 165506) in order to benchmark the design against Part B (Fire Safety) requirements of the Building Regulations. The development of the fire strategy report and addressing specific challenges with the fire strategy is part of another work scheme (known as Project Chariot EV Chargers).
- 1.1.8 Following the assessments in the workstreams of EV chargers and conversion to self-storage areas, the fire strategy report will be updated to reflect the as-built use of the London Covent Garden carpark.
- 1.1.9 SOCOTEC will prepare a design note which includes a fire HAZID analysis in order to identify the fire risks associated with the introducing self-storage areas and mitigation measures in place.
- 1.1.10 It is intended that this report will assist the client and design team in securing planning permission and address fire safety matters during the planning stage to achieve a suitable standard of fire safety, reduce risk reduction to life and fire spread, and provide a suitable and convenient means of escape for all the building occupants.
- 1.1.11 This document is not intended to portray detailed design information. As a strategic document supporting and informing the wider design, it should be read in conjunction with the wider project design documentation.

## 1.2 Legislative Requirements

- 1.2.1 The fire strategy report will be developed in detail to satisfy the functional requirements of Regulation 7, and Parts B1 – B5 of Schedule 1 to the Building Regulations 2010 (as amended).
- 1.2.2 In addition to the minimum requirements of the Building Regulations, this fire safety strategy report will also be developed to meet the recommendations set out in London Plan Policy 2021.
- 1.2.3 In accordance with Regulation 4 of the Building Regulations, works must meet the functional requirements of the Building Regulations. The fire safety requirements mentioned in Schedule 1 of the Building Regulations are:
  - B1 – Means of warning and escape;
  - B2 – Internal fire spread (linings);
  - B3 – Internal fire spread (structure);
  - B4 – External fire spread; and
  - B5 – Access and facilities for the fire and rescue service.

### 1.3 Design Basis and Guidance

- 1.3.1 The requirements of Part B (Fire Safety) of the Building Regulations will be met by benchmarking the carpark design against the prescriptive guidance of the BS 9999:2017 - Fire safety in the design, management and use of buildings – Code of practice [1] (herein referred to as BS 9999).
- 1.3.2 Additionally, in accordance with the fire safety engineering principles detailed in the BS 7974 [2] codes of practice, all fire precautions are determined on the basis of there being one seat of fire.
- 1.3.3 Unless explicitly stated in this report, all design elements are expected to be in accordance with BS 9999 and the documents referenced herein.

### 1.4 The London Plan – Policy D5 & D12

- 1.4.1 As part of the planning submission, the London Plan (2021) [3] Policy D12(A/B) states that all major developments should be submitted with a Fire Statement, which is an independent Fire Strategy, produced by a third party, suitably qualified assessor. The Policy D12 (A) is applicable to the London Covent Garden site and the design will be developed and benchmarked against the requirements of the policy.
- 1.4.2 Within the London Plan Policy, the intent is to achieve the highest standard of fire safety, thereby reducing risk to life, minimizing the risk of fire spread, and ensuring all building users have access to safe and reliable escape routes.
- 1.4.3 London Plan Policy D12 states that the fire statement should detail how the proposal will function in terms of the requirements listed in Table 1. The sections of this fire statement specifically addressing the relevant requirements are also listed in the table below.

*Table 1: London Plan Policy 2021 Summary*

Policy Number	Description	Section(s)
Policy D12, Subsection A1(a)	Identify suitably positioned and unobstructed outside space for positioning of fire appliances	6
Policy D12, Subsection A1(b)	Identify suitably positioned and used unobstructed outside space appropriate for use as an assembly point	3.3
Policy D12, Subsection A2	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	2, 4.2
Policy D12, Subsection A3	The building must be constructed in an appropriate way to minimise the risk of fire spread	4.2
Policy D12, Subsection A4	Provide suitable and convenient means of escape, and an associated evacuation strategy for all building users	3
Policy D12, Subsection A5	Develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in.	2.1
Policy D12, Subsection A6	Provide suitable access and equipment for firefighting which is appropriate for the size and use of the development	6.2
Policy D12, Subsection B1	the building's construction: methods, products and materials used, including manufacturers' details	1.8.3
Policy D12, Subsection B2	the means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach	3.2
Policy D12, Subsection B3	features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans	2
Policy D12, Subsection B4	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	6
Policy D12, Subsection B5	how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building	6.2
Policy D12, Subsection B6	ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.	1.3
Policy D5	Development proposals should achieve the highest standards of accessible and inclusive design	3.4

- 1.4.4 This PFSS has been developed as a high-level strategic document providing guidance and assurance that the above requirements of the London Plan Policy will be met at a detailed design stage. Therefore, information such as methods of construction or specific product details are not included in this document. However, the minimum performance requirements are stated, which will be used as a basis for the design note, assessing the impact of introducing self-storage areas on the overall fire safety of the carpark, at later design stages.

## 1.5 Authors

Author	Position	Professional Qualification	Experience
Alperen Gürer	Fire Engineer	AlFireE	1.5 years
Humza Khan	Senior Fire Engineer	AlFireE	3 years
Ashish Kirori	Principal Fire Engineer	AlFireE	6 years

## 1.6 Relevant Project Documentation

- 1.6.1 This document is based on information provided to SOCOTEC, as listed in Table 2. Additional information or variations to that supplied may render the conclusions and recommendations within this report invalid.

*Table 2: Referenced Documents*

Description		Author	Reference	Rev.	Date
Proposed plans	Level D	Janus International Europe	C036422-No-01	-	19.02.2025
	Level D – C		C036422-No-02		
	Level C – B		C036422-No-03		
	Level B – A		C036422-No-04		
	Level A		C036422-No-05		
	Lower Ground Floor		C036422-No-06		
	Ground Floor Entrance		C036422-No-07		
Initial plans	Level D	Janus International Europe	C036422-No-01	-	31.10.2024
	Level D – C		C036422-No-02		
	Level C – B		C036422-No-03		
	Level B – A		C036422-No-04		
	Level A		C036422-No-05		
	Lower Ground Floor		C036422-No-06		
	Ground Floor Entrance		C036422-No-07		
Retrospective Fire Strategy Report		SOCOTEC	165506	1	18/03/2025
Proposed plans	Level D	Janus International Europe	C036422-No-E-00	E	08/05/2025
	Level D - C		C036422-No-E-01		
	Level C - B		C036422-No-E-02		

## 1.7 Material Change of Use

- 1.7.1 The Schedule 5 of the Building Regulations 2010 states that the 'Material Change of Use' is understood to occur when the use of a building or part of a building is altered in such a way that there are significant changes to its purpose, occupancy profile or the risks that were originally considered in its design.
- 1.7.2 For the proposed conversion of carpark levels into self-storage units, it is understood that the conversion will be classified as 'Material Change of Use' due to following reasons:
- There will be a change in the function/ purpose of these levels.
  - The expected occupancy and frequency of people accessing these levels will differ from its previous use.
  - The proposed change is expected to impact the performance of the building such as structural, mechanical, environmental which may require reassessment.
- 1.7.3 Based on the arguments above, it is understood that the conversion of carpark into self-storage units is a significant change from its previous use. Therefore, the proposed layout will need to be comprehensively assessed against the requirements of Part B (Fire Safety) of the Building Regulations.

## 1.8 Risk Profiles and Occupancy Numbers

- 1.8.1 To apply the guidance of BS 9999 requires that a risk profile is determined for the building to establish the appropriate fire safety provisions. The risk profile is based on assigning the occupancy characteristic and the fire growth rate.
- 1.8.2 As per the recommendations of Table 2 of the BS 9999, the car park levels will be assigned an occupancy characteristic of B as the occupants will be awake but unfamiliar with the building.
- 1.8.3 It is currently not known if the storage areas will be separated from each other by fire-resisting enclosures. However, in order to avoid Ultra-fast (4) fire growth rate, all units should be fire-separated from each other. By doing so, the fire growth rate will be reduced to Fast (3). Additionally, the building is provided with a sprinkler system which will be made functional. Therefore, the fire growth rate allocated to the storage areas will be Medium (2).
- 1.8.4 In summary, the risk profile assigned to the self-storage level is B2.

- 1.8.5 It should be noted that the above risk profile of 'B2' is only valid where the storage units are separated from each other through a 30-minutes fire-rated construction and the sprinklers are functional in the building. In the absence of any of these measures, the risk profile will become invalid and the fire strategy will need to be reviewed.

**Occupancy:**

- 1.8.6 The number of occupants has been estimated based on floor space factors given in Table 9 of BS 9999, supported by Table D1 of ADB Vol.2 [4]. The existing occupancy of each level are determined based on 2 persons per car parking space as recommended in Table D1 of the ADB. Based on this factor, the entire car park has a design occupancy of approximately 660 occupants on 4 levels.
- 1.8.7 The proposed works will decrease the existing occupancy as described in Section 1.1.6. The design occupancy of self-storage areas will be estimated by using floor space factor of 1 person per 30 m<sup>2</sup>. Detailed calculations will be made as the design progresses further in future.
- 1.8.8 The means of escape provisions will be based on the above-estimated occupancy.

## 2 ACTIVE FIRE SAFETY MEASURES

### 2.1 Evacuation Strategy

- 2.1.1 The entire car park will operate on a 'Simultaneous' evacuation strategy where all occupants will be signalled to evacuate upon activation of a fire alarm system.
- 2.1.2 At this stage, no interaction with the above ground accommodation is envisaged. However, the evacuation strategy will be further reviewed during the development of the design note at later design stages.

### 2.2 Fire Detection and Alarm System

- 2.2.1 As per the existing information, the carpark levels are provided with an L4 category fire detection and alarm system. However, no information regarding the zoning of the system is available at this stage.
- 2.2.2 Furthermore, the fire alarm system operates on a single-stage evacuation system and is linked throughout the building. The system is designed and installed in accordance with BS 5839-1 [5].
- 2.2.3 The BS 9999 guidance recommends that for B2 risk profile, a category 'M' manual fire detection and alarm system should be provided in accordance with BS 5839-1. However, for best practice, it is recommended that the entire car park should be installed with an automatic fire detection and alarm system to a minimum category 'L2'.
- 2.2.4 In addition to the fire detection and alarm system, BS 9999 recommends that in areas where people are unfamiliar with their surroundings, provision of voice and/ or visual alarm system should be considered in order to reduce the evacuation times.

### 2.3 Automatic Fire Suppression

- 2.3.1 According to the existing information, sprinklers are installed to cover each designated parking bay and building services. However, no testing was provided for the sprinkler system at this stage. It should be confirmed that the system is being regularly tested and inspected.
- 2.3.2 As per the existing information, the age of the existing sprinkler system is likely to be over 40 years old and in poor condition internally. The existing sprinkler system is designed as an alternate system, wet in the summer and dry in the colder winter months. This switching between wet and dry modes greatly accelerates the rate of corrosion within the system pipe network.
- 2.3.3 As part of the scope of the installation of self-storage areas, the existing system will be removed and a new system will be provided in accordance with BS EN 12845 [6] and Fire Protection Association (FPA) Loss Prevention Council (LPC) automatic fire suppression guidance.
- 2.3.4 The sprinkler system for the self-storage areas should be designed, operated and maintained as an Ordinary Hazard Group O3 (minimum requirement, similar to a furniture showroom) by a specialist contractor in accordance with the recommendations of BS EN 12845 [6].
- 2.3.5 The size of the pump and tank should be investigated in order to meet the performance objectives of the applicable guidance document.

### 2.4 Emergency Lighting

- 2.4.1 The self-storage areas should be provided with emergency lighting in accordance with the recommendations of BS 5266 [7], BS EN 1838 [8], BS EN 60598-2-22 [9].

### 2.5 First-aid Firefighting

- 2.5.1 In general, fire points should be located at all storey exits, within specific areas presenting a significant fire risk and to ensure coverage of at least one fire point for every 200 m<sup>2</sup> of floor area. The type and size of extinguisher(s) at each fire point should be chosen in accordance with the guidance given in BS 5306-8 [10].
- 2.5.2 Portable extinguishers should comply with BS EN 3-7 [11] and BS EN 3-10 [12], to be inspected and maintained in accordance with BS 5306-3 [13].
- 2.5.3 Where practical, fire extinguishers are to be securely hung on wall brackets. Where this is impractical, extinguishers are to be placed on a suitable base plate (not on the floor). To assist in lifting, the carrying handle of larger, heavier extinguishers should be approximately 1 m from the floor, but smaller, lighter extinguishers may be mounted at a higher level.
- 2.5.4 First-aid firefighting provisions should be assessed and provided as part of the fire risk assessment for the building, including consideration for the day-to-day management of the provisions.



## **2.6 Fire Safety Signage**

- 2.6.1 Fire safety signs should be installed where necessary to provide clear identification of fire precautions, fire equipment and means of escape in the event of fire. All parts of the development should be fitted with appropriate fire safety signage to comply with The Health and Safety (Signs and Signals) Regulations 1996 (i.e., signage to be specified in accordance with BS ISO 3864-1 [14] and following the principles of the Safety signs and Signals: Guidance on Regulations Publication) [15].
- 2.6.2 Fire safety signs should also be provided in accordance with BS 5499-4 [16] and BS 5499-10 [17].

## **2.7 Smoke Control System**

- 2.7.1 BS 9999 states that the below ground levels without any natural means of ventilation should be provided with mechanical smoke extract systems. Additionally, the firefighting lobby in the firefighting shafts will also need to be smoke ventilated.
- 2.7.2 As per the existing information, there is a smoke ventilation system provided within the car park. However, it is stated that the existing ventilation system serving the car park is showing significant signs of wear and tear with noticeable rusting and corrosion on the system one would expect from a 40-year-old installation.
- 2.7.3 The new mechanical smoke ventilation system should be designed and installed in accordance with the recommendations of BS EN 12101-3 [18] or alternatively BS 7346-7 [19].

## **2.8 Back-up Power Supplies**

- 2.8.1 The following fire safety systems shall be provided with backup power supplies in accordance with BS 8519 [20]:
- Emergency lighting and/or signage in common areas; and
  - Automatic fire detection and alarm system.
  - Mechanical smoke extract systems
  - Sprinkler system

## 3 MEANS OF WARNING AND ESCAPE

### 3.1 Horizontal Evacuation

- 3.1.1 The general philosophy for means of escape is that the occupants of the building should be able to turn their back on a fire and escape via the nearest exit without additional assistance from other occupants (including the opening of secure doors) or firefighters. This is achieved by providing alternative escape routes where necessary, limiting travel distances, and providing sufficient exit width and escape routes that, depending upon the use of the building, should have specified periods of fire resistance.
- 3.1.2 The layout of each floor will be assessed for travel distance limits corresponding to the specific risk profile limits mentioned in Table 11 of BS 9999 as shown in Table 3.

Table 3: Travel Distance limits

Risk Profile	Single Direction (m)	Multiple Direction (m)
B2	20	50
Plant Rooms (A2) (Low risk plant rooms)	22	55
Plant Rooms (A3) (High risk plant rooms)	18	45

- 3.1.3 The occupants on the floors below ground will have to evacuate through the three stairs provided on all levels below ground.
- 3.1.4 The clear width of the doors providing access to these stairs will be evaluated in the later design stages to assess the means of escape capacity corresponding to the estimated occupancy.

### 3.2 Vertical Evacuation

- 3.2.1 The vertical evacuation will be provided by three stairs serving all the levels below ground. The stairs are not lobby-protected.
- 3.2.2 At this stage, it is envisaged that one of the stairs will be discounted for escape capacity calculations due to lack of lobby protection at all levels. Therefore, a detailed assessment of the vertical evacuation will be conducted at a later design stage.

### 3.3 Escape Beyond the Final Exits

- 3.3.1 Travel beyond the buildings' final exits must be away from the building, towards a place of safety, and not be jeopardised by unprotected openings of the building. The buildings are provided with escape routes, upon exiting the building that is either directly away from the building to a distance of at least 1.8 m prior to passing in front of unprotected areas, and as such, additional fire resisting construction is not required to support onward escape.
- 3.3.2 A suitable assembly points will be located such that they are located remotely from access routes for the London Fire Brigade and evacuation from the building can be achieved without exposure to a hazard from a building fire. Defining the assembly point is an operator led exercise as part of the duties of the Responsible Person under the FSO.

### 3.4 Mobility of Impaired Occupants

- 3.4.1 As per the fire risk assessment report, there are two passenger lifts provided together within a stair core. However, none of the lifts are evacuation lifts. Therefore, none of the lifts would be used during evacuation. It remains the responsibility of the staff on-site to monitor and assist with the safe evacuation of the mobility-impaired occupants.
- 3.4.2 According to London Plan Policy D5(B5), buildings provided with lifts would need to consider an evacuation lift for mobility-impaired occupants.
- 3.4.3 The evacuation lift should be clearly signed at the final exit storey and relevant information should be available detailing the operation mode, rescue controls and machinery spaces.
- 3.4.4 The evacuation lift should always be available for evacuation purposes, and it should be designed, installed and operated in accordance with Annex G.2 of BS 9999 [1] and the standards referenced therein. The evacuation lift shall be provided with alternative power supplies as per Section G.2.2.2 of BS 9999.
- 3.4.5 A consideration should be given to the installation of an evacuation lift at later design stages.

- 3.4.6 It should be noted that under the Regulatory Reform (Fire Safety) Order 2005, it is the duty of the responsible persons along with their appointed safety assistants to assist everyone to a place of ultimate safety outside the building in the event of an emergency.
- 3.4.7 Any disabled occupant should have a Personal Emergency Evacuation Plan (PEEP) and the procedures should be practised. A Generic Emergency Evacuation Plan (GEEP) will need to be written for members of the public (e.g. visitors) who would need assistance to escape. Further information can be found in Approved Document M [21], BS 8300 [22] [23] and the DCLG Publication *Fire Safety Risk Assessment Supplementary Guide – Means of Escape for Disabled People*.

## 4 INTERNAL FIRE SPREAD

### 4.1 Internal Linings

- 4.1.1 Wall and ceiling linings should achieve the surface spread of flame and fire classifications outlined in Table 33 of BS 9999 as a minimum, as summarised in Table 4.

*Table 4: Internal Linings requirements*

Location	European Class (BS EN 13501-1:2018) <sup>Note 1</sup>
Small rooms $\leq 30 \text{ m}^2$	D-s3, d2
Other rooms	C-s3, d2
Circulation spaces	B-s3, d2

**Note 1** – Parts of the wall area in rooms may be of poorer performance than specified above, but not poorer than D-s3, d2. This variation is limited to a total area not exceeding one-half of the room floor area, subject to a maximum of 60 m<sup>2</sup> in non-residential rooms.

### 4.2 Structural Fire Resistance and Compartmentation

- 4.2.1 As per the existing information, the main structure of the car park is made up of reinforced concrete. However, no accurate structural information has been obtained for the buildings over the car park at this stage.
- 4.2.2 As per Table 23 of BS 9999, for risk profile B2 with a depth of lower basement greater than 10 m, should have a structural fire resistance of 60 minutes with the presence of sprinklers.
- 4.2.3 The structure above ground is a residential accommodation with a height greater than 30 m. BS 9991 requires a structural fire resistance of 120 minutes for the residential accommodation in the presence of sprinklers.
- 4.2.4 Therefore, given the higher fire resistance requirement for the residential accommodation, the structural fire resistance for the entire carpark should also be 120 minutes.
- 4.2.5 A brief outline of the fire-rated construction is shown in Table 5. A detailed evaluation of the carpark will be conducted at a later design stage, as part of a comprehensive retrospective fire strategy report.

*Table 5: Minimum fire resistance recommendations*

Element	Minimum fire resistance <sup>Note 1 &amp; 2</sup>	Method of Exposure	Fire Door <sup>Note 3</sup>
Structural frame, beam or column	R 120	Exposed Faces	--
Self-storage units	REI 30	Each side separately	FD30S
Storerooms / Cleaners cupboards	REI 30	Each side separately	FD30S
Firefighting Stair	REI 120	Each side separately	FD60S
Plant Rooms (Low risk)	REI 30	Each side separately	FD30S
Plant Rooms (High risk)	REI 60	Each side separately	FD60S
Plant Rooms (Life Safety Systems)	REI 120	Each side separately	FD60S

**Note 1** R = Load-bearing capacity, E = Integrity, I = Insulation

**Note 2** Where an element of construction could be regarded as more than one of the line items, the most onerous applies.

**Note 3** In accordance with BS 476-22 [24] or BS EN 1634-2 for fire resistance; and where applicable BS 476-31 [25] or BS EN 1634-3 for smoke leakage.

## 5 EXTERNAL FIRE SPREAD

### 5.1 External Walls

- 5.1.1 In order to limit the spread of flame across the surface of a building that may pose threat to a life, the guidance recommends that the materials forming the external cladding of the building should be of limited combustibility.
- 5.1.2 The above requirement regarding the external surface is not relevant in this project as the car park is located entirely in the basement below ground level.

### 5.2 Space Separation

- 5.2.1 Should a fire occur in a building, heat would radiate through non-fire resisting openings in the external walls. This heat can be enough to set fire to nearby buildings. In order to reduce the chance of this occurring, the Building Regulations place limits on the area of the external elevation with no fire resistance. This area is known as the unprotected area. The distance of the building from other buildings, the use of the building and the compartment size are all factors in determining the acceptable degree of unprotected area for each elevation.
- 5.2.2 The requirement for the space separation is not relevant in this project as the car park is located entirely in the basement below ground level. Therefore, this assessment has not been conducted.

## **6 ACCESS AND FACILITIES FOR FIRE SERVICE**

### **6.1 Overview**

- 6.1.1 In the event of a fire, initial firefighting operations may be attempted by a suitably trained member of staff. The London Fire Brigade will be notified by an authorised member of staff or bystander.
- 6.1.2 As per the existing information, the fire alarm panel is located adjacent to the attendant's office at the entrance barrier.

### **6.2 Firefighting facilities**

- 6.2.1 The guidance recommends that a building over 18 m in height and a building with a basement deeper than 10 m from ground level should be provided with a firefighting shaft including a firefighting stair, a firefighting lobby and a firefighting lift.
- 6.2.2 The guidance recommends that where the sprinklers are provided, each part of the floor plate should be located within the hose laying distance of a maximum of 60 m from the fire main outlet.
- 6.2.3 A detailed assessment regarding the firefighting facilities and hose laying distance will be conducted at a later design stage when a design note will be prepared.

### **6.3 Fire vehicle access to and around the site**

- 6.3.1 The fire vehicle access to and around the car park will remain unchanged and will be through the Parker Mews (off Parker Street).

### **6.4 Water Supply**

- 6.4.1 The water supply within the car park recommended to be at least 1,500 litres/minute.
- 6.4.2 It is also important that consideration should be given to the drainage system to disperse this volume of water.

## **7 FIRE SAFETY MANAGEMENT**

### **7.1 Overview**

- 7.1.1 Management procedures have a pivotal role to play in fire prevention, control and evacuation of occupants should a fire incident occur.
- 7.1.2 The Regulatory Reform (Fire Safety) Order 2005 (FSO) places legal obligations on building owners and management. This section is intended to introduce the FSO, its obligations and provide initial guidance in fulfilling these duties.
- 7.1.3 It is important that management are aware of their responsibilities detailed in this document and agree that they are sufficiently capable of adequately performing them.
- 7.1.4 Appropriate fire safety design considers the way in which a building will be managed. Any reliance on an unrealistic or unsustainable management regime cannot be considered to have met the requirements of the regulations.
- 7.1.5 Once the building is in use, the management regime should be maintained, and a suitable risk assessment undertaken for any variation in that regime. Failure to take proper management responsibility may result in the prosecution of an employer, building owner or occupier under legislation such as the Regulatory Reform (Fire Safety) Order 2005.

### **7.2 Regulatory Reform (Fire Safety) Order 2005**

- 7.2.1 The FSO came into effect in October 2006 and replaced over 70 pieces of fire safety law. The Order applies to all non-domestic premises in England and Wales, including the common parts of blocks of flats or houses in multiple occupation. The Order removed the legal status of fire certificates, which are no longer enforceable by the Fire Authorities. The 'responsible person' has a duty to make the premises safe and must undertake regular fire risk assessments. Under the new legislation, it is the responsible person who will be held accountable for any breaches in fire safety.
- 7.2.2 In workplaces, the responsible person is the employer. In other cases, the owner or person in control of the premises is the responsible person.
- 7.2.3 Under the Order, the 'responsible person' must carry out a fire safety risk assessment and implement and maintain a fire management plan. The assessment should be kept under regular review and reassessed if the use of the building has been varied or a material alteration has been made. The significant findings must then be recorded, along with the measures taken to address the risks identified. A competent person should carry out the fire risk assessment.
- 7.2.4 The act extends the duties and obligations of the responsible person to anyone who has any extent of control over the premises. Some examples include a branch manager, building supervisor, the facilities management company and the head teacher of a school.

### **7.3 Maintenance of fire safety systems**

- 7.3.1 The fire safety systems provided within the building will require ongoing maintenance in accordance with the manufacturer's specification for each of the systems. These may include, but are not limited to:
  - Alarm and detection systems;
  - Fire doors, including door closers and smoke seals;
  - Emergency lighting and any illuminated signage;
  - Fire dampers, whether automatic or intumescent;
  - Back-up power supplies; and
  - Fire extinguishers.
  - Sprinkler system
  - Smoke extracts
  - Evacuation and Firefighting lifts
  - Fire Mains
- 7.3.2 It is recommended that an inspection and maintenance schedule be developed for the fire safety systems within the building, and the records of this be available as required when undertaking a fire risk assessment, or at the request of the local fire and rescue service.

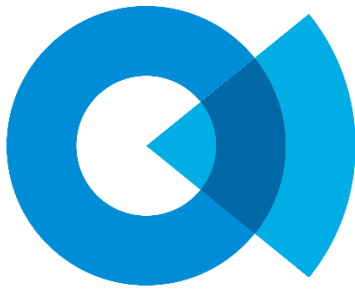
## 7.4 Management of safety

- 7.4.1 Management will be responsible for ensuring that fire safety provisions and assumptions for these areas are maintained and enforced. The appointed person should have the necessary authority and powers of sanction to ensure that standards of fire safety are maintained. The main duties of the Fire Safety Manager include:
- Managing the building to minimise the incidence of fire (fire prevention); e.g. good housekeeping and security;
  - Producing an Emergency Fire Plan;
  - Being aware of all of the fire safety features provided and their purpose;
  - Being aware of any particular risks on the premises (e.g. issues relating to hot work or unusual Construction materials such as sandwich panels);
  - Being in attendance on the premises whenever members of the public are present or when the building is occupied. It is acceptable for a competent person other than the fire safety manager to be in attendance at such times, provided that this person has been delegated in writing and that cover is not interrupted;
  - Liaising with, and where necessary seek the advice of, the fire authority, the licensing authority and other relevant enforcing authorities;
  - Having powers to deal with individuals who sabotage or tamper with safety systems, who ignore any smoking policy or who block exits;
  - Liaising with other fire safety managers where necessary;
  - Ensuring that public areas are suitably controlled;
  - Ensuring that all necessary and appropriate communication systems are in place to deal with any fire incident;
  - Checking the adequacy of fire-fighting equipment and ensuring its regular maintenance;
  - Ensuring fire escape routes and fire exit doors/passageways are kept unobstructed and doors operate correctly and are not propped open. Should it become apparent that common fire doors are regularly propped open, management should consider installing hold-open devices which release automatically upon activation of a local smoke detector head;
  - Ensuring that fire detection and protection systems are maintained and tested and proper records are kept;
  - Ensuring any close down procedures are followed;
  - Ensuring that storage areas accessed from corridors are locked shut when not in use; and
  - Building management will be responsible to assist disabled occupants outside the building and implement the evacuation strategy to the designated assembly point.
- 7.4.2 Good housekeeping is encouraged to ensure that the effectiveness of the fire safety provisions is not adversely affected. This should include adequate provision for the disposal of waste and/or rubbish in the external bin stores.
- 7.4.3 Where appropriate, these facilities will be emptied on a daily basis, and the rubbish will be stored in a suitable area outside the building. Maintenance procedures will be developed to ensure that all equipment and services are able to operate effectively. Maintenance staff will be trained in the importance of the fire safety systems and planned maintenance programmes developed.
- 7.4.4 It is recommended that all held-open doors should be released overnight to reduce the risk of the doors distorting. They should also be checked regularly to ensure they close correctly upon activation of the fire alarm.
- 7.4.5 Suitable assembly points outside the building should be identified. These should be remote from the access routes used by the fire and rescue service.
- 7.4.6 Escape routes should generally have wall and ceiling linings achieving a Class B-s3, d2 surface spread of flame standard, apart from permitted exceptions noted in Section 4.1. These finishes must be maintained for the life of the building and manufacturer's guidelines should be followed with respect to maintenance and replacement of their products. Display features or items such as posters, artwork pieces, etc., may be included with appropriate consideration, justification and ongoing control.



## 8 BIBLIOGRAPHY

- [1] BSI, "BS 9999:2017 Code of practice for fire safety in the design, management and use of buildings," British Standards Institution, London, 2017.
- [2] BSI, "BS 7974:2019 Application of fire safety engineering principles to the design of buildings. Code of practice," British Standards Institution, London, 2019.
- [3] Mayor of London, The London Plan - The Spatial Development Strategy for Greater London, London: Greater London Authority, 2021.
- [4] DCLG, "Approved Document B, Volume 2 - Buildings other than dwellinghouses," NBS for the Department for Communities and Local Government, London, 2006.
- [5] BSI, "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," British Standards Institution, London, 2017.
- [6] BSI, "BS EN 12845: 2015 +A1:2019 Fixed firefighting systems. Automatic sprinkler systems: Design, installation and maintenance".
- [7] BSI, "BS 5266-1:2016 Emergency lighting. Code of practice for the emergency lighting of premises," British Standards Institution, London, 2016.
- [8] BSI, "BS EN 1838:1999 Lighting applications. Emergency lighting," British Standards Institution, London, 1999.
- [9] BSI, "BS EN 60598-2-22:1999 Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting," British Standards Institution, London, 1999.
- [10] BSI, "BS 5306-8:2012 Fire extinguisher installations and equipment on premises. Selection and positioning of portable fire extinguishers. Code of practice," British Standards Institution, London, 2012.
- [11] BSI, "BS EN 3.-7:2004+A1:2007. Portable fire extinguishers. Characteristics, performance requirements and test methods," British Standards Institution, London, 2004.
- [12] BSI, "BS EN 3-10:2009. Portable fire extinguishers. Provisions for evaluating the conformity of a portable fire extinguisher to BS EN 3-7," British Standards Institution, London, 2009.
- [13] BSI, "BS 5306-3:2017 Fire extinguishing installations and equipment on premises. Commissioning and maintenance of portable fire extinguishers. Code of practice," British Standards Institution, London, 2017.
- [14] BSI, "BS ISO 3864-1:2011 Graphical Symbols - Safety colours and safety signs - Part 1: Design principles for safety signs and safety markings," British Standards Institution, London, 2011.
- [15] HSE, "Safety signs and signals. The Health and Safety (Safety Signs and Signals) Regulations 1996. Guidance on Regulations," The Stationary Office, Norwich, 2015.
- [16] BSI, "BS 5499-4:2013 Safety signs. Code of practice for escape route signing," British Standards Institution, London, 2013.
- [17] BSI, "BS 5499-10:2014 Guidance for the selection and use of safety signs and fire safety notices," British Standards Institution, London, 2014.
- [18] BSI, "BS EN 12101-3:2015: Smoke and Heat Control Systems - Specification for powered smoke and heat control ventilators (Fans)," 30 Sep 2015.
- [19] B. Knowledge, "BSI BS 7346-7: Components for smoke and heat control systems - Code of practice on functional recommendations and calculation methods for smoke and heat control systems for covered car parks," 31 Aug 2013.
- [20] BSI, "BS 8519:2020 Selection and installation of fire-resistant power and control cable systems for life safety and fire-fighting applications - Code of practice," British Standards Institution, London, 2020.
- [21] DCLG, "Approved Document M: Volume 2 - Buildings other than dwellings," NBS for the Department for Communities and Local Government, London, 2015.
- [22] BSI, "BS 8300-1:2018 - Design of an accessible and inclusive built environment. External environment - code of practice," British Standards Institution, London, 2018.
- [23] BSI, "BS 8300-2:2018 - Design of an accessible and inclusive built environment. Buildings - code of practice," BSI, London, 2018.
- [24] BSI, "BS 476-22:1987 Fire tests on building materials and structures. - Part 22: Methods for determination of the fire resistance of non-loadbearing elements of construction," British Standards Institution, London, 1987.
- [25] BSI, "BS 476-31-1:1983 Fire tests on building materials and structures. - Part 31: Methods for measuring smoke penetration through doorsets and shutter assemblies. Section 31.1 Method of measurement under ambient temperature conditions.," British Standards Institution, London, 1983.



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