SOCOTEC

PLANNING FIRE SAFETY STATEMENT (PFSS)

Heathrow Flightpath Car Park

Project no. TX 166083

Issue	Date	Drafted / Checked / Authorised	Notes
1	10/06/2025	JW / AK / HK	Initial issue for design team comments
2	17/06/225	JW / AK / AK	First update of RS2

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CONTENTS

1 SUMMARY

1.1 Background

1.1.1 SOCOTEC UK Limited has been appointed by Lysara to develop the planning fire safety statement for a new-built EV car parking facility called Heathrow Flightpath Car Park to be located at Bath Road, Sipson, UB7 0DU.

1.1.2 The site is proposed to comprise a parking area with a food and beverage unit to serve customers, as well as welfare and staff facilities. The site includes standard EV car parking bays, which are separate from regular parking bays, along with accessible bays to accommodate all future users. The southern part of the site, where the food and beverage unit is located, also contains standard and oversized parking bays.

1.1.3 The site is bounded by Bath Road to the south, with the main entrance leading toward Heathrow Airport. To the east and west, the site is bordered by Tunnel Road and Sipson Way, respectively. The northern boundary is adjacent to residential areas along Sipson Way and Douglas Web House.

1.1.4 This report is intended to support the design team and client in securing the planning permission and address fire safety matters during the planning stage to achieve a suitable standard of fire safety, reduce risk to life and fire spread, and provide a suitable and convenient means of escape for all building occupants.

1.1.5 This document is not intended to portray detailed design information. As a strategic document supporting and informing the wider design team, it should be read in conjunction with the wider project design documentation.

1.1.6 Changes made in Issue 2 of this planning fire safety strategy have been tracked with a vertical blue margin on the left paragraph.

1.2 Legislative requirements

The Building Regulations

1.2.1 The strategy has been developed to satisfy the functional requirements of The Building Regulations 2010 (as amended), namely:

- B1 – Means of warning and escape;
- B2 – Internal fire spread (linings);
- B3 – Internal fire spread (structure);
- B4 – External fire spread;
- B5 – Access and facilities for the fire and rescue service; and
- Regulation 7 – Materials and workmanship.

1.2.2 The fire statement will be developed to satisfy the requirements for fire safety as set out by the Building Regulations. The document has not been developed to address property protection. However, the features that are included for life safety will contribute to some extent to property protection. This document has also been developed with reference to local design expectations as set out within the London Plan.

1.2.3 This fire statement should form part of the information pack handed over to the building operators to meet the obligations of the design team under Regulation 38 (of the Building Regulations), to aid the Responsible Person in maintaining the fire risk assessment for the premises.

1.2.4 The strategy has not been developed to address property protection. However, the features that are included for life safety will contribute in some extent to business and property protection.

1.2.5 The fire statement has been developed in cognisance of the Construction (Design and Management) Regulations 2015 (CDM 2015), which sets out what designers are required to consider to protect anyone involved in the construction or ongoing use of a structure.

1.2.6 The fire statement does not address site fire safety during the building works, or the requirements of Dangerous Substances and Explosive Atmosphere Regulations 2002 (DSEAR), Health and Safety at Work etc Act 1974 (HASAWA), Control of Major Accident Hazards Regulations 2015 (COMAH), etc. which should be considered as a separate exercise.

1.2.7 This document does not provide a comprehensive assessment of site fire safety during the building works or the phasing of these works. The Fire Protection Association [1] and the Health and Safety Executive (HSE) [2] issue guidance on identifying and managing fire precautions during the works, which should be consulted by the contractor or their specialist advisor when developing their construction fire safety plan.

1.3 Guidance

1.3.1 The requirements of Section 1.2 should be met through compliance with the prescriptive recommendations of BS 9999 [3] and the codes of practice referenced therein.

1.3.2 In accordance with the fire safety engineering principles detailed in the BS 7974 [4] codes of practice, all fire precautions are determined on the basis of there being one seat of fire.

1.4 Context and suitability of BS 9999

1.4.1 BS 9999 is a British Standard published by BSI Standards Limited, and was prepared by Technical Committee FSH/14, 'Fire precautions in buildings'. BS 9999 is a technical guidance on fire safety at a level of complexity and flexibility that reflects the needs of the building to which it is applied.

1.4.2 BS 9999 is considered to provide an advanced approach to the development of fire safety design using a structured approach to risk-based design compared to the general approach applied to buildings using documents published by relevant government departments to support legislative requirements.

1.4.3 BS 9999 takes the form of design guidance and recommendations and should not be quoted as a specification. It is recognised that 'some variation from the recommendations might be necessary for certain special buildings or areas of buildings.' – BS 9999 Foreword p. xii.

1.4.4 The guidance and recommendations given within BS 9999 are developed on a risk-based approach whereby an appropriate risk profile is identified and utilised to identify the relevant guidance.

1.4.5 In addition to the general guidance based on the risk profiles, additional specific recommendations relevant to particular building types/occupancies are given in its annexes.

1.5 The London Plan – Policy D5 & D12

General

1.5.1 As part of the planning submission, the London Plan 2021 [5] also requests that a 'Fire Statement' be provided for the building. It is intended that this fire safety statement will also serve as the Fire Strategy for the scheme.

1.5.2 Within the London Plan Policy, the intent is to achieve the highest standard of fire safety, thereby reducing risk to life, minimising the risk of fire spread, and providing suitable and convenient means of escape which all building users can have confidence in. In addition to the expectations of The Building Regulations 2010 (as amended), the design of this development is developed to meet the fire safety expectations within Policy D12 of the London Plan as follows:

Policy D12 Fire Safety states:

(A) In the interest of fire safety and to ensure the safety of all building users, all development proposals must achieve the highest standards of fire safety and ensure that they:

i) Identify suitably positioned unobstructed outside space:

a. for fire appliances to be positioned on;

b. appropriate for use as an evacuation assembly point.

ii) Are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire, including appropriate fire alarm systems and passive and active fire safety measures;

iii) Are constructed in an appropriate way to minimise the risk of fire spread;

iv) Provide suitable and convenient means of escape, and associated evacuation strategy for all building users;

v) Develop a robust strategy for evacuation that can be periodically updated and published, and which all building users can have confidence in; and

vi) Provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.

(B) All major development proposals should be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party, suitably qualified assessor. The statement should detail how the development proposal will function in terms of:

i) The building's construction: methods, products and materials used, including manufacturers' details;

ii) The means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach;

iii) Features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans;

iv) Access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and position of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these;

v) How provisions will be made within the curtilage of the site to enable fire appliances to gain access to the building; and

vi) Ensuring that any potential future modification to the building will be taken into account and not compromise the base build fire safety / protection measures.

1.5.3 For the development of non-residential buildings, 'Major Developments' is defined in the London Plan 2021 as, developments where the floor space is 1,000 m^2 or more, or the site area is 1 hectare or more. As the latter criterion has been met (i.e., development of 1.4 hectares), policy D12(B) should be met.

1.5.4 As it is envisaged that there are no changes in elevation, wheelchair bound occupants should be able to evacuate independently without the need for an evacuation lift, thus negating the requirement to meet the recommendations of policy D5 of the London Plan 2021.

1.5.5 Table 1 summarises where the requirements of the London Plan 2021 policies have been specifically addressed in this report.

Table 1 - London Plan Policy 2021 Summary

Policy D12, Subsection B1	The building's construction: methods, products and materials used, including manufacturers' details	5
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	4
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	3
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	7
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	7
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.	8

1.5.6 This fire statement has been developed in accordance with the above items. This document is intended to serve as strategic guidance, therefore, detailed design information such as the methods of construction or the selection of specific products is not included within this document. However, the minimum performance requirements to be achieved by certain products or materials in the building are stated within this report, which will be used to inform the selection of products during RIBA Stages 3 – 6.

1.5.7 SOCOTEC confirms that reasonable skill and care have been taken in the development of this PFSS and that to the best of our knowledge sets out a proposal that, with appropriate development in the following design and construction stages, would offer a level of fire safety that meets the expectations of Policy D12(B) of the London Plan 2021.

1.6 Regulatory Approvals

1.6.1 This fire statement will be submitted to the local planning department to obtain planning permission for this proposed development.

1.7 Implementation

1.7.1 This report has been produced on the basis that:

- The project will be designed and constructed by competent persons in accordance with the recommendations of the guidance documents listed in Section 1.3 and the documents referenced therein;
- The certificates will be provided at each stage where appropriate, and all commissioning, witness testing, certification and 3rd party assessments are suitable and sufficient;
- It will be used to inform the fire risk assessments for the purposes of compliance with the Regulatory Reform (Fire Safety) Order 2005 (FSO), which is the duty of the 'Responsible Person' for the premises;
- It will form part of the information pack handed over to the building operators under Regulation 38 (of the Building Regulations) to aid the Responsible Person(s) in maintaining the fire risk assessment for the premises; and
- A suitable and sufficient management regime is implemented, ensuring immediate intervention and evacuation.

1.8 Authors

1.8.1 The authors of this project have been summarised in Table 2.

Table 2 – Authors

Name	Position	Professional qualification	Experience (years)
Joseph Wu	Fire Modelling Engineer	MSFPE, AMiMechE, AIFireE	2
Ashish Kirori	Principal Fire Engineer	AIFireE	6
Humza Khan	Senior Fire Engineer & Manchester Lead	AIFireE, GMICE	4

1.9 Information received

1.9.1 This strategy is based on information provided to SOCOTEC as provided by Smalley Marsey Rispin Architects, as listed in Table 3. Additional information or variations to that supplied may render the conclusions and recommendations within this report invalid.

Table 3 – Referenced documents

Description	Reference	Rev.	Date
Site location plan	7935-SMR-00-ZZ-DR-A-2004-S3-P7	P7	06/06/2025
Proposed site plan – phase 1	7935-SMR-00-ZZ-DR-A-2003-S3-P5	P5	23/05/2025
Proposed site plan – phase 2	7935-SMR-00-ZZ-DR-A-2004-S3-P6	P6	23/05/2025
Proposed boundary treatment & details	7935-SMR-00-ZZ-DR-A-2006-S3-P1	P1	23/05/2025
Solar canopy details	7935-SMR-00-ZZ-DR-A-2007-S3-P1	P1	23/05/2025
Height restrictors, cycle and smoking shelter details	7935-SMR-00-ZZ-DR-A-2008-S3-P1	P1	23/05/2025
Food and beverage GA floor plan	7935-SMR-01-ZZ-DR-A-2101-S3-P2	P2	06/06/2025
Food and beverage proposed elevations	7935-SMR-01-ZZ-DR-A-2102-S3-P1	P1	23/05/2025
Staff block GA plans & elevations	7935-SMR-02-ZZ-DR-A-2103-S3-P1	P1	23/05/2025
Welfare block GA floor plans	7935-SMR-03-ZZ-DR-A-2104-S3-P1	P1	22/05/2025
Welfare block proposed elevations	7935-SMR-03-ZZ-DR-A-2105-S3-P1	P1	22/05/2025

2 PROJECT OVERVIEW

2.1 Project Brief

2.1.1 As shown in the site plan of Figure 1, the site is bounded by Bath Road to the south, with the main entrance leading toward Heathrow Airport. To the east and west, the site is bordered by Tunnel Road and Sipson Way, respectively. The northern boundary is adjacent to residential areas along Sipson Way and Douglas Web House.

2.1.2 The site has been proposed to comprise various buildings and parking bays, as summarised in Table 4.

Table 4 – Space breakdown of the development

Qty.	Space	Configuration	Public access	Report reference
1	F&B unit	Ground Floor only	Y	GAs provided in Figure 2
1	Cycle shelter	--	Y	Shown in Figure 1 site plan
2	Substation building	Ground Floor only	N	Shown in Figure 1 site plan
1	Electrical plant	Ground Floor only	N	Shown in Figure 1 site plan
1	Staff block	Ground Floor only	N	GAs provided in Figure 3
1	Welfare block	Ground Floor only	N	GAs provided in Figure 4
6	Accessible non-EV parking bays	--	Y	Shown in Figure 1 site plan
8	Standard non-EV parking bays	--	Y	Shown in Figure 1 site plan
54	Standard EV parking bays	--	Y	Shown in Figure 1 site plan
3	Accessible EV parking bays	--	Y	Shown in Figure 1 site plan

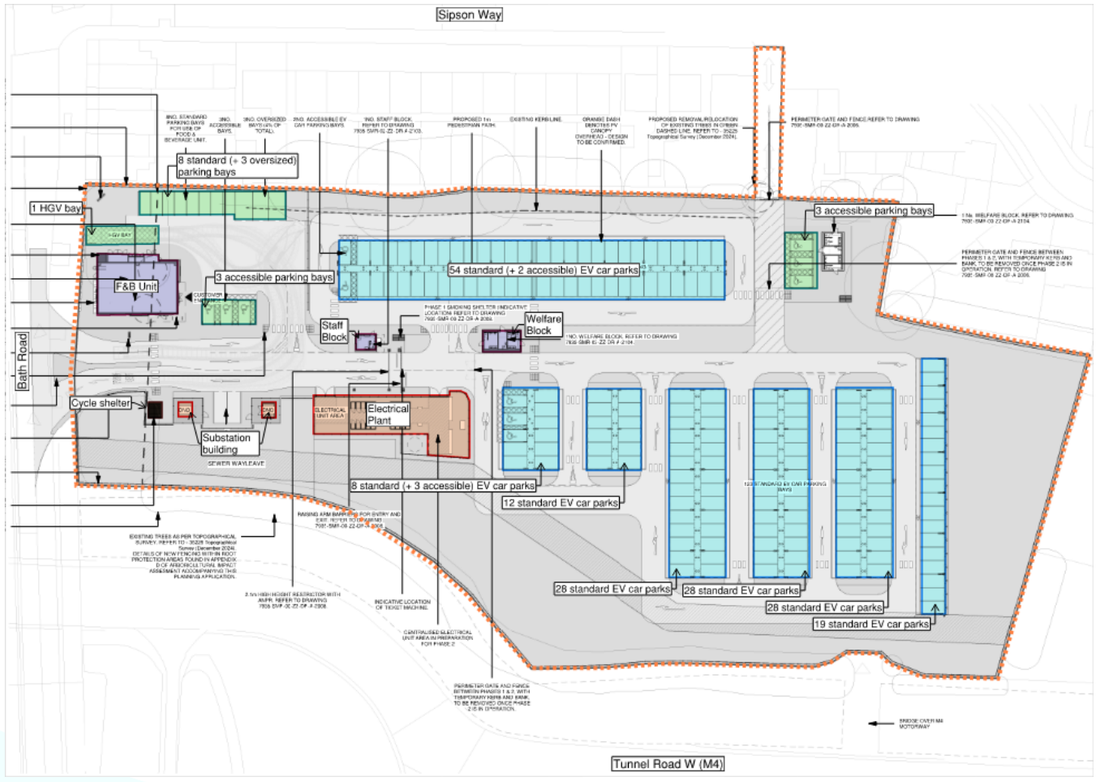


Figure 1 – Site plan

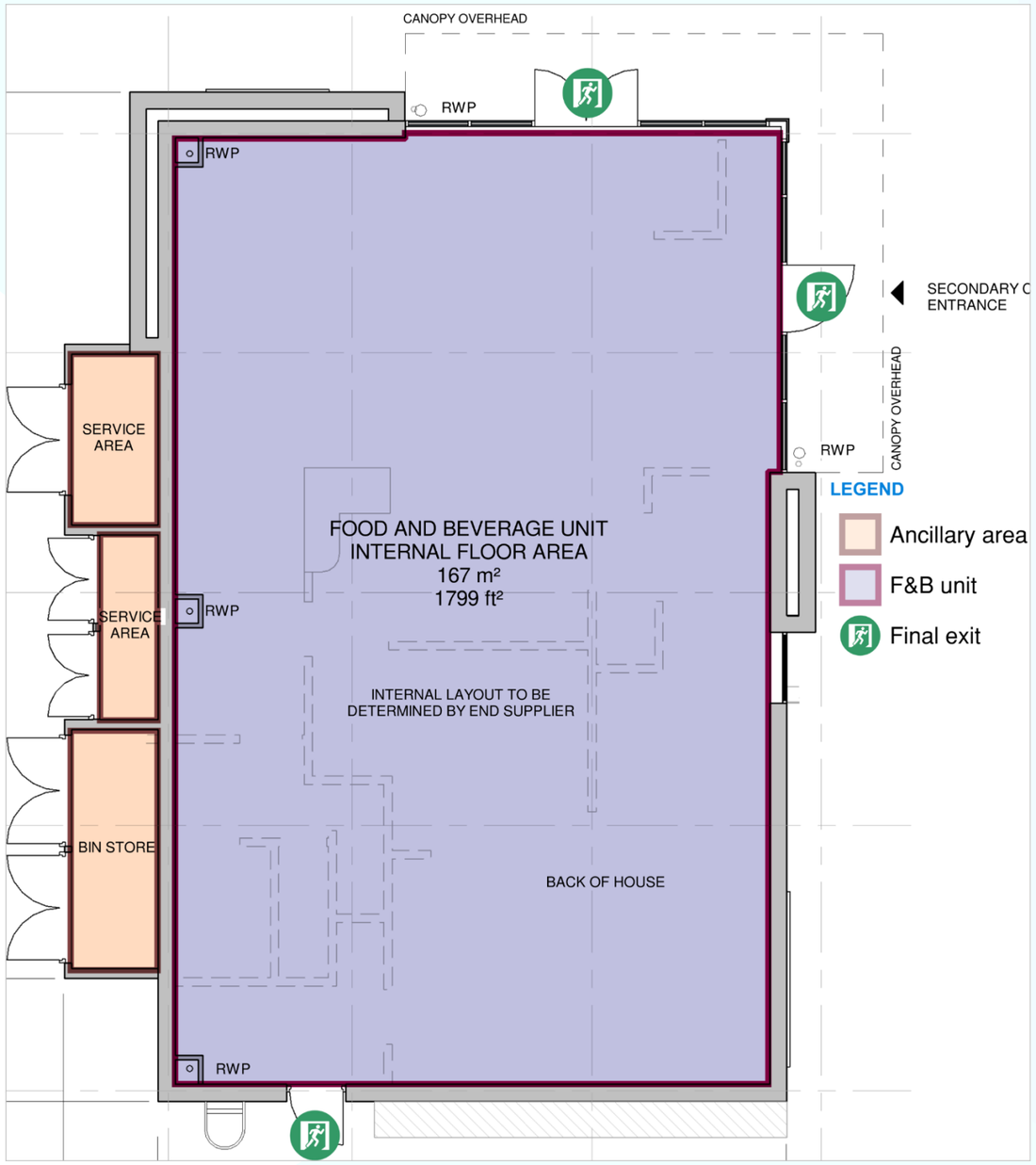


Figure 2 – F&B unit ground floor plan

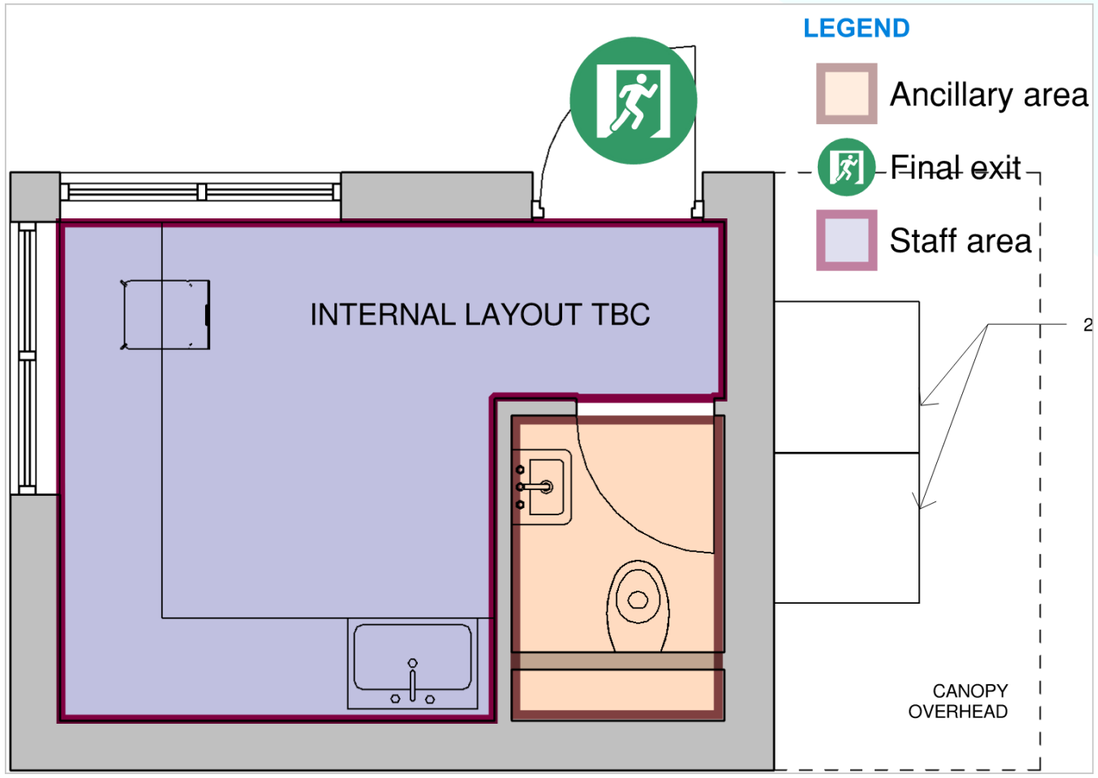


Figure 3 – Staff block ground floor plan

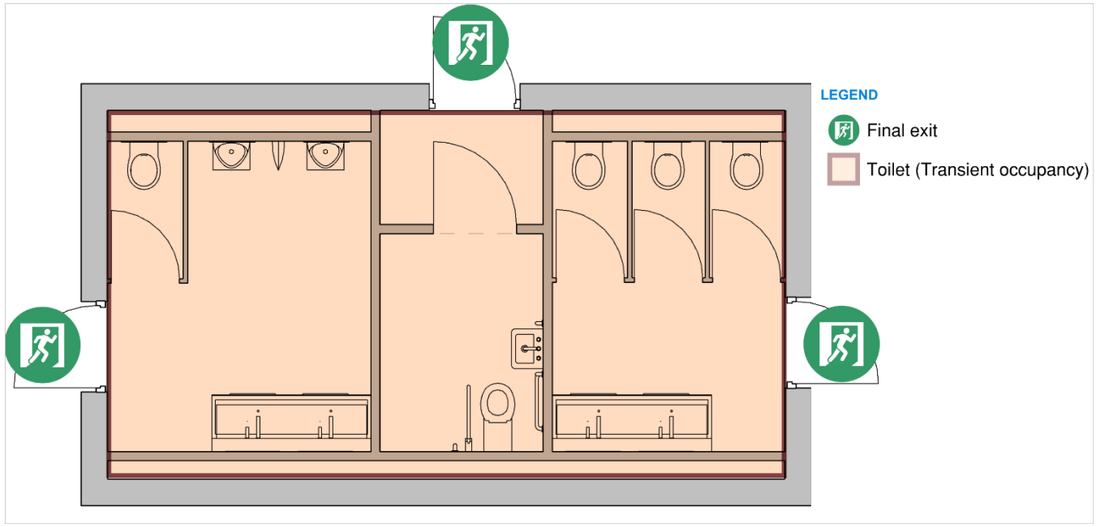


Figure 4 – Welfare block ground floor plan

2.2 Risk profile and occupant numbers

2.2.1 BS 9999 recommends that a risk profile be determined for each building (or separate parts of the building) to establish the appropriate fire safety provisions.

2.2.2 A risk profile is obtained by assigning an occupancy characteristic (Clause 6.2 and Table 2 of BS 9999) and a fire growth rate (Clause 6.3 and Table 3 of BS 9999), as detailed below:

Occupant characteristics

- A – Occupants who are awake and familiar with the building;
- B – Occupants who are awake and unfamiliar with the building;
- C – Occupants who are likely to be asleep; and
- D – Occupants receiving medical care.

Fire growth rate

- 1 – Slow (0.003 kJ/s^3);
- 2 – Medium (0.012 kJ/s^3);
- 3 – Fast (0.047 kJ/s^3); and
- 4 – Ultra-fast (0.188 kJ/s^3).

Table 5 – Risk profile

Space	Occupancy characteristics	Fire growth rate	Risk profile
F&B unit	Awake and unfamiliar (B)	Fast (3)	B3
Staff block and Welfare block	Awake and familiar (A)	Medium (2)	A2
Electrical plant and Substation building	Awake and familiar (A)	Fast (3)	A3

2.2.3 This design occupancy of the building is primarily based on the floor space factor, informed by Table 9 of BS 9999. The occupancy breakdown for the various spaces is shown in Table 6.

2.2.4 During the horizontal means of escape, the individual storey escape routes and exit widths will be based on the conservative assumption that all rooms on that storey are considered to be at maximum occupancy simultaneously.

Table 6 – Occupancy distribution

Space	Area (m^2)	Space factor (m^2/person)	Number of occupants
F&B unit	165.3	2.0 Note 1	83
Total number of occupants throughout the F&B unit:			**83**
Staff block	8.8	4.0 Note 2	3
Total number of occupants throughout the Staff block:			**3**
Welfare block	30.3	-- Note 3	--
Total number of occupants throughout the Welfare block:			**--**

Note 1 – Representing a normal density shop, e.g., clothing store.
Note 2 – Representing a high-density office, e.g., a call centre.
Note 3 – Toilets feature only transient occupants who have not been included.

3 FIRE SAFETY SYSTEMS

3.1 Means of detection and alarm

General

3.1.1 In support of the simultaneous evacuation regime, the fire detection and alarm (FDA) system for the proposed development should be provided in accordance with BS 5839-1 [6]. The system should also feature:

- Visual beacons should be provided in other areas where the background sound level could be louder than an audible fire alarm (e.g., mechanical plant rooms, accessible WCs, etc.). This would initiate evacuation in the event of an FDA activation;
- Visual beacons should also be provided along the open-air car park to warn occupants to move to the designated assembly point; and
- Type A ("single action") manual call points (MCPs) will be provided at every storey exit and every exit to a place of ultimate safety, irrespective of whether or not they are a designated fire exit, and such that no occupant need travel more than 45 m to the nearest call point (or 25 m where a significant proportion of occupants have limited mobility).

3.1.2 A fire alarm panel should be provided within the proposed development. A repeater fire alarm panel interlinked with the main fire alarm panel may be used, subject to confirmation with the specialist designer.

3.1.3 Fire alarm panels should be placed in a location that is visible and accessible to the fire and rescue service upon arrival at the building and from where they can be easily monitored by building maintenance. An automated message / alert could also be sent to building management via email, pager or SMS.

3.1.4 A summary of the proposed FDA systems has been provided in Table 7. The minimum level of the FDA system required is dependent on the risk profile and is based on the recommendations in Table 7 of BS 9999.

Table 7 – Summary of the proposed FDA systems

Space	Risk profile	Minimum required FDA system	Provided FDA system
F&B unit	B3	Category L2 to BS 5839-1	Category L2 to BS 5839-1
Staff block and Welfare block	A2	Category M to BS 5839-1	Category L2 to BS 5839-1
Electrical plant and Substation building	A3	Category L2 to BS 5839-1	Category L2 to BS 5839-1

3.2 Automatic suppression system

3.2.1 As all proposed buildings have a height of less than 30 m, in accordance with Clause 30.2.2 of BS 9999, sprinklers are not required to be provided for the purposes of life safety.

3.2.2 However, sprinklers may be considered by the client for the purposes of property protection and business continuity.

3.3 Photovoltaic (PV) panels

3.3.1 PV Panels have been proposed at the following locations:

- at the car park canopy, as shown in Figure 5; and
- at the roof of the F&B unit, as shown in Figure 6.

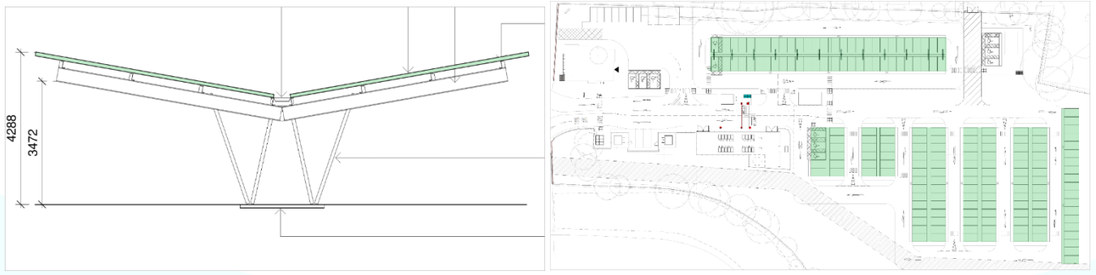


Figure 5 - PV panels located at the open car park (Right) at the top of the canopy (Left)

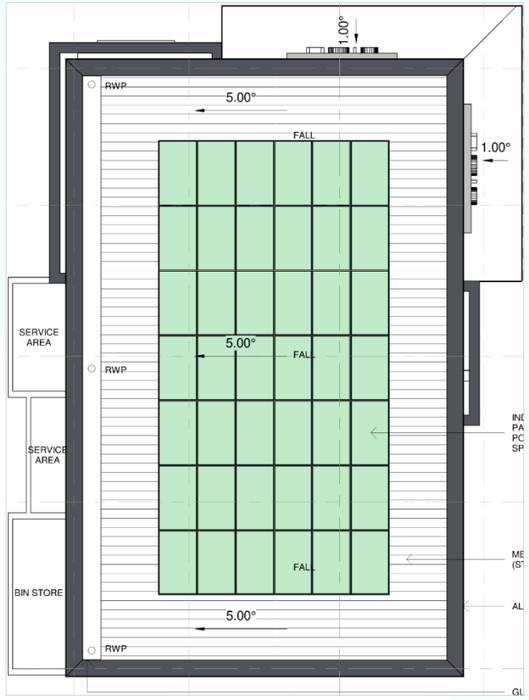


Figure 6 - PV panels located along the roof of the F&B unit

3.3.2 It should be noted that firefighting operations are challenging for PV panels due to the electrocution risk and the difficulty of reaching the roof safely.

3.3.3 In general, the following recommendations should be considered:

- PV panels should be designed and installed in accordance with BS EN IEC 61730-1 [7];
- The Building Control Body and local Fire Service should be consulted at the earliest opportunity;
- Roof areas around and supporting PV panels should be formed of non-combustible surface materials;
- A safe means of access should be provided for responding firefighters, which should be coordinated and agreed upon with the local Fire Service;
- The cabling from the PV panels should be routed to the electrical board via a route that would ensure the live cables do not pose a hazard to firefighters conducting wet operations within the building; and
- A DC isolation switch should be provided in a location readily available to the responding firefighters to isolate the PV system and assure the safety of firefighting personnel. The isolation system should provide a safe means of discharge and an indication of status.

3.3.4 It is assumed that occupants accessing the roof level would only be suitably trained members of staff performing maintenance operations.

3.4 Life-safety power supplies

3.4.1 The following fire safety systems shall be provided with back-up power supplies in accordance with BS 8519 [8]:

- Automatic fire detection and alarm systems; and
- Emergency lighting and internally illuminated escape signage.

3.5 Discharge fighting emergency switch

3.5.1 A firefighter's emergency switch should be provided to any discharge lighting installation operating at a voltage exceeding low voltage, in accordance with BS 7671 [9] and the requirements of the fire authority.

3.6 Emergency Lighting

3.6.1 Emergency lighting should be installed in accordance with the recommendations of BS 5266 [10], BS EN 1838 [11], and BS EN 60598-2-22 [12].

3.6.2 Emergency lighting should illuminate all occupied areas, common evacuation routes (internal and external as necessary) and essential areas, including plant areas. It will also illuminate a safe exit route, including fire exits, fire alarm call points, changes in level or direction and firefighting equipment.

3.6.3 Primary and emergency lighting should be required for any external escape routes that will not be lit by surrounding street lighting.

3.7 Fire safety signage

3.7.1 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 [13] and following the principles of the Safety signs and Signals: Guidance on Regulations Publication) [14].

3.7.2 Fire safety signs should also be provided in accordance with BS 5499-4 [15] and BS 5499-10 [16]

3.7.3 All fire doors should be marked with the appropriate fire safety sign according to whether the door is:

- to be kept closed when not in use ('FIRE DOOR - KEEP SHUT');
- to be kept locked when not in use ('FIRE DOOR - KEEP LOCKED'); or
- held open by an automatic release mechanism ('AUTOMATIC FIRE DOOR - KEEP CLEAR').

3.7.4 Fire doors to cupboards and to service ducts should be marked on the outside at about eye level. All other fire doors should be marked on both sides at about eye level.

3.8 Actuation of release mechanisms for doors

3.8.1 Interface(s) between a fire detection and fire alarm system and door hardware should be provided in accordance with BS 7273-4 [17] where any such arrangements that are designed in the event of a fire to:

- Release fire-resisting doors that are normally held in the open position; and
- Unlock doors that are normally locked.

3.9 Electric vehicles (EV)

3.9.1 Electric vehicles (EVs) pose a different fire safety risk when compared to internal combustion engine (ICE) vehicles. The challenges includes but is not limited to a faster fire growth rate, longer combustion duration and a higher peak heat release rate [18].

3.9.2 Therefore, as EV car fires are a relatively new phenomenon, and in the absence of prescriptive recommendations in BS 9999, additional reference will be made to the following documents for the purposes of life-safety:

- Approved Document S: Infrastructure for charging electric vehicles [19];
- FPA RC 59: Fire Safety when charging electric vehicles [20];
- RCG033(EN): Electric vehicle charging and enclosed car parks [21];
- ARUP – T0194: Covered Carparks – fire safety guidance for electric vehicles [22]; and
- European Commission: Guideline for the fire safe deployment of recharging points in covered parking garages [23].

3.9.3 The recommendations for the proposed outdoor EV car charging stations have been grouped into 3 categories, as follows:

Preventing ignition

- Mode 3 and Mode 4 EV chargers featuring built-in fault monitors should be installed throughout the car park. EV chargers of Mode 1 and Mode 2 should not be used throughout the development, as per Section 6.2(e) of Approved Document S [19].
- E-bikes and e-scooters should be in a separate 60-minute fire resistant compartment and not be in the vicinity of EV charge points [20].
- Parking bays for EV charging should be signed and marked. Provided charging cables (if any) should not be too long as to allow cars to drive over them or people can step on them [22]. The charging cables should also not be too short to prevent stretching [20].
- EV charging points should meet the technical requirements of BS EN 61851 and be installed by a competent person registered with the Competent Persons Scheme.
- Speed limits within the car park should be controlled to reduce the likelihood of thermal runaway due to mechanical damage [21]
- Electrical installations should refer to the IET Code of Practice on electric vehicle charging equipment installation. Routine inspections and adherence to maintenance schedules by a responsible and certified organisation.
- Staff should be trained regularly so that they are aware of actions that should be taken (stated in the emergency action plan) in the event of an EV car fire [20].
- Staff should be trained to be able to visually identify damaged / faulty equipment, and to prevent further usage by isolating and placing warning signs.

Preventing fire spread

- EV car charging stations should be accessed directly from unenclosed spaces to prevent the accumulation of hot and toxic gases, e.g., hydrogen fluoride, hydrogen cyanide, carbon monoxide, heavy metals, etc. This also serves to prevent vapour cloud explosions [22].
- There should be increased spacing between EV cars to prevent the spread of fire to the neighbouring car(s). Experiments have shown EV cars producing horizontal jet-like flame characteristics [22] typically 2 to 3 metres in length [20]. An ideal albeit impractical separation distance is 5 m [21]. An alternative is to design EV charging parking sizes with a 1.2 m separation distance that is similar to parking bays for disabled persons [20].
- Combustible and flammable materials should not be kept within 6 m [20] of EV charging cars and 10 m [21] from EV chargers.

Firefighting

- An isolation switch (e.g., fireman's switch) for the electrical car chargers should be provided at a safe distance from the parking spaces and at a strategic location, to allow firefighters to cut power to these prior to conducting wet operations.
- Firefighters should be able to easily access the EV cars should they catch fire.
- Firefighting water should be available via direct hose laying from a fire appliance connected to a public / private fire hydrant. Hydrants should be capable of providing a volume flow rate of at least 1,900 L/min at 1.5 bar [21].
- It is recommended for the drainage of the car park to feature a gradient that directs water away from the EV charging locations [21]. This is to minimise the likelihood of stagnant water around the vehicles during or post firefighting that could pose an electrical hazard. Additionally, firefighting water run off contains high levels of lithium and other metals not suitable to discharge in storm / sewer systems [22].
- Firefighters should fight the EV car fire with respiratory equipment as water, as an extinguishing medium, when reacting with $LiPF_6$ can release a large quantity of toxic hydrogen fluoride and highly flammable hydrogen gas H_2 [24].
- The predicament of thermal runaway of EV cars causing reignition after hours or days should be addressed, as 13% of EV fires studied have been documented to reignite [22], especially when moving/dragging to another location. Relocating EV cars post-fire should be done on a flatbed [23].
- Early consultation with the London Fire Brigade should be made to determine additional requirements by the firefighting brigade, e.g., space required for submerging cars, fire blankets, specialised EV nozzles, etc.

3.10 Green roof

3.10.1 Where green, brown or sedum roofs are intended to be proposed, these should be specified based on recommendations provided in the GRO's green roof design code [25] and the DCLG guidance [26].

3.11 Maintenance

3.11.1 The maintenance of all active fire safety systems should be undertaken as per the relevant standards listed within this section. A maintenance schedule should be developed during the design of the building.

3.12 Housekeeping

3.12.1 The management should ensure that ignition sources and easily ignitable materials are suitably controlled and segregated.

3.12.2 Circulation routes should be maintained as fire sterile, meaning free from combustibles.

3.13 Security

3.13.1 To reduce the likelihood of arson and to mitigate its effects if it does occur, the building should have suitable and sufficient security provisions.

3.13.2 Security arrangements must not prevent occupants from reaching a place of relative or ultimate safety and should not hinder the entry of the fire and rescue service to fight the fire or affect the rescue of trapped persons.

3.14 First-aid firefighting

3.14.1 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 m² 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 [27].

3.14.2 Portable extinguishers should comply with BS EN 3-7 [28] and BS EN 3-10 [29], to be inspected and maintained in accordance with BS 5306-3 [30].

3.14.3 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

3.14.4 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.

3.14.5 The type and size of extinguisher(s) should be chosen in accordance with the guidance given in BS 5306-8 [27], as summarised by Table 8 and the classification of fire fuel hazards summarised as follows:

- Class A – fires involving solid materials, usually of an organic nature (general hazards)
- Class B – fires involving liquid or liquefiable solids (such as liquid fuels, lubricants, paints, etc.)
- Class C – fires involving gases
- Class D – fire involving metals
- Class F – fires involving cooking media (vegetable or animal oils or fats).

3.14.6 Fire blankets are typically provided for extinguishing small cooking fires. Should suitable extinguishers for commercial cooking or metal fires be required, it would be recommended that advice from a specialist be sought.

Table 8 – Fire extinguisher types and application guidance

Medium	Colour code	Application	Do NOT use for
Water	White	Class A fires	Liquid, electrical, metal or cooking fires
Powder	Blue	Class A, B or C fires	Metal or cooking fires
Foam	Cream	Class A or B fires	Electrical [Note 1], metal or cooking fires
CO_2	Black	Class B fires	Metal or cooking fires

Note 1 – AFFF Foam extinguishers may be used for electrical fires up to 35 kV (dielectric test) and where operated from a distance of at least 1 m.

4 MEANS OF WARNING AND ESCAPE

The Building Regulations 2010 (as amended) functional requirement B1 states:

"The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of fire from the building to a place of safety outside the building capable of being safely and effectively used at all material times."

4.1 Evacuation regime

4.1.1 All buildings within the premises will operate on a simultaneous evacuation strategy where all occupants will evacuate upon activation of the fire detection and alarm system.

4.2 Horizontal evacuation

Overview

4.2.1 The general philosophy for means of escape is that the occupants of a building should be able to turn their back on a fire and escape via the nearest exit without additional assistance from other occupants (unless assisting disabled occupants) or firefighters. In the first instance, this is achieved through alternative escape routes and escape routes with a specified period of fire resistance.

4.2.2 The horizontal evacuation should be designed in accordance with the recommendations of BS 9999, as follows:

- Doors that do not open in the direction of escape may serve no more than 60 persons.
- Exits serving 60 people or less should achieve a clear effective width of 850 mm where unassisted wheelchair access is necessary, see Clause 16.6.1.b of BS 9999. Approved Document M may require additional width.
- All escape routes should achieve a minimum headroom of 2 m, except in doorways.
- Where double doors are provided, the width of one of the leaves should be not less than 800 mm

Number of exits

4.2.3 The minimum number of room and storey exits should be in accordance with Table 10 of BS 9999, herein replicated as Table 9.

Table 9 - Minimum number of exits from a room or storey

Occupancy Capacity	Minimum number of exits
Not more than 60	1
61 – 600	2
More than 600	3

Travel distance within ancillary areas

4.2.4 In the proposed layout, travel distances are within the limits prescribed in Table 10. Should the fit-out plans change in future, the travel distances will need to be reassessed.

Table 10 –Travel distance and escape width limitations

Description	F&B unit	Staff Block and Welfare Block	Electrical plant and Substation building
Risk profile	B3	A2	A3
Min. door width (mm/person) Note 1	6.0	3.6	4.6
Max. single direction actual travel distance (m) Note 1 & 2	16	22	18
Max. multiple direction actual travel distance (m) Note 1 & 2	40	55	45

Note 1 – No variations have been applied throughout this development.
Note 2 – Actual travel applies to where the furniture layout is known. Where the layout is unknown, direct travel distances will apply (see Table 11 of BS 9999).

Horizontal evacuation capacity

4.2.5 In the event of a fire, the largest exit(s) should be discounted where more than one door has been provided. This has been summarised in Table 11.

4.2.6 It is observed that with regard to the proposed doors, in view of their position, widths and opening direction, they are sufficient to cater for the expected building occupancy.

Table 11 – Horizontal evacuation capacity

Building	Door ID	Door width (mm)	Door capacity (persons)	Total horizontal evacuation capacity (persons)	Expected occupancy (persons)	Findings
F&B unit	FB.01	1,700	~~283~~ Note 1	266	83	Sufficient
	FB.02	1,100	183			
	FB.03	850	83			
Staff block	SB.01	850	60 Note 3	60	3	Sufficient
Welfare block	WB.01	850	60 Note 3	60	-- Note 4	Sufficient
	WB.02	850	60 Note 3	60	-- Note 4	Sufficient
	WB.03	850	60 Note 3	60	-- Note 4	Sufficient

Note 1 – The exit having the largest escape capacity has been discounted.
Note 2 – The door swing is against the direction of escape.
Note 3 – There is only one exit provided; thus, the maximum occupancy is 60 persons.
Note 4 – Occupants are transient in nature.

4.3 Escape beyond the final exits

4.3.1 Travel beyond the building's final exits will be away from the building, towards a place of safety, and will not be jeopardised by unprotected openings of the building. This is to be achieved through a combination of the following (relevant to each location):

- external fire-rated construction provided to a minimum height of 1,100 mm above ground level where people are required to pass within 1,800 mm of an external wall;
- where final exits discharge within 1,800 mm of an external wall at 90° or less to the plane of the final exit, fire-rated construction will be provided to external walls within 1,800 mm of the final exit; and
- exit paths lead away from the building towards a secure location.

4.3.2 Escape beyond the final exits should be available via level paved routes, being appropriate for users with mobility aids, and being the normal means of entering and exiting the building. Egress routes should also meet the accessibility recommendations of Approved Document M [31], as appropriate.

4.3.3 Assembly areas should be located such that they are remote from access routes for the FRS and evacuation from the building can be achieved without exposure to a hazard from a building fire. Defining the assembly area is an operator-led exercise as part of the duties of the Responsible Person under the FSO.

5 INTERNAL FIRE SPREAD

The Building Regulations 2010 (as amended) functional requirement B2 states:

"(1) To inhibit the spread of fire within the building, the internal lining shall:

(a) Adequately resist the spread of flame over their surfaces; and

(b) Have, if ignited, a rate of heat release or a rate of fire growth, which is reasonable in the circumstances.

(2) In this paragraph 'internal linings' mean the materials or products used in lining any partition, wall, ceiling or other internal structure."

The Building Regulations 2010 (as amended) functional requirement B3 states:

"(1) The building shall be designed and constructed so that, in the event of fire, its stability will be maintained for a reasonable period.

(2) A wall common to two or more buildings shall be designed and constructed so that it adequately resists the spread of fire between those buildings. For the purposes of this sub paragraph a house in a terrace and a semi-detached house are each to be treated as a separate building.

(3) Where reasonably necessary to inhibit the spread of fire within the building, measures shall be taken, to an extend appropriate to the size and intended use of the building, comprising either or both of the following:

(a) sub-division of the building with fire resisting construction;

(b) installation of suitable automatic fire suppression systems.

(4) The building shall be designed and constructed so that the unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited."

5.1 Internal linings

5.1.1 Wall and ceiling linings should achieve the surface spread of flame and fire classifications outlined in Table 12 at a minimum. This is in accordance with the prescriptive recommendations of Clause 34.1.1 and Table 33 of BS 9999.

5.1.2 Thermoplastic materials, which do not comply with Table 12 (e.g., windows, roof-lights, lighting diffusers, etc.), should comply with the recommendations of Clause 34.1.2 of BS 9999.

5.1.3 Parts of the wall area in a room may be of poorer performance than that specified in Table 12, but not poorer than European Class 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 m² in non-residential areas. This is in accordance with Clause 34.1.1 of BS 9999.

Table 12 – Internal lining requirements

Location	European Class (BS EN 13501-1:2018 *[32]*) Note 1
Small rooms in non-residential areas ≤ 30 m²	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 m² in non-residential rooms.

5.2 Structural fire resistance, compartmentation and fire-resisting separation

Structural fire resistance

5.2.1 When tested in accordance with the relevant part of BS 476, BS EN 1363, BS EN 1364, BS EN 1365 or BS EN 1366[1], the relevant elements of structure should have a fire resistance not less than the minimum values provided in Clause 30.2, Table 22 and Table 23 of BS 9999.

5.2.2 The minimum recommended fire resistance period is based on uppermost storey height and the risk profile as noted in Table 23 of BS 9999. Given that all buildings feature height of top-occupied floor less than 5 m, the structural fire resistance would be varied based on the risk profile, as follows:

- **Risk profile B3 and A3 (F&B unit and Electrical plant only):** Table 13; and
- **Risk profile A3 (Substation building only):** Table 14
- **Risk profile A2 (Staff block and Welfare block):** Table 15.

5.2.3 UKPN substations should be provided with fire resisting for up to 240 minutes, as informed by Section 8 of EDS 07-0116 [33].

Compartmentation

5.2.4 Compartment walls should be taken up to meet the underside of the floor slab, roof covering or deck, with fire-stopping where necessary at the wall and floor/roof junction to maintain the continuity of fire resistance.

5.2.5 The junction between compartment wall(s) and/or compartment floor(s) should maintain the fire resistance of the compartmentation. Compartment walls should be able to accommodate the predicted deflection of the floor above through the provision of deflection heads.

5.2.6 The continuity of compartmentation should be maintained at the junctions of the fire-resisting elements and at the junctions of external walls with compartment walls and floors.

Roof plant

5.2.7 If a rooftop plant is proposed, then elements of structure that support the roof require to be fire resistant. The structure is considered to support more than only a roof if it supports a load other than the roof itself (e.g., rooftop plant), forms an escape route (e.g., podium or roof amenity terrace) or is essential to the stability of the structural design within the 'fire' accidental loading combination.

5.2.8 Photovoltaic (PV) panels will be provided on the roof. PV panels should be installed correctly according to the manufacturer's recommendations and guidance.

5.2.9 Any PV panels installed at the building should include a firefighter's switch provided at the ground floor level that would remotely isolate the PV panels. The cabling from the PV panels should be routed to the electrical board via a route that would ensure the live cables do not pose a hazard to firefighting conducting wet operations within the building.

Maximum compartment area

5.2.10 In accordance with Clause 31.2 and Table 28 of BS 9999, the maximum dimensions for a single compartment should be limited based on the compartment's risk profile, as summarised below:

- **Risk profile A2 compartment (Single storey):** No limit on compartment sizes;
- **Risk profile A3 compartment (Single storey):** No limit on compartment sizes; and
- **Risk profile B3 compartment (Single storey):** Maximum compartment size of 2,000 m².

Life-safety plant rooms

5.2.11 If a plant room providing secondary power supply is proposed, this building would be classified as a life-safety room. The structure supporting the life safety room should be fire rated to achieve 120 minutes, as per Clause 30.2.7 of BS 9999. Additionally, the construction should be made up of non-combustible material, i.e., Class A2-s3, d2 or better.

5.2.12 Be that as it may, the FDA system and emergency lighting may feature their own backup batteries and would therefore not require a life safety room. This will be confirmed in the subsequent RIBA stages by the specialist designer.

[1] The national classifications do not automatically equate with the equivalent European classifications, therefore, products cannot typically assume a European class unless they have been tested accordingly.

Table 13 – Fire resistance for the F&B unit and Electrical plant only

Element	Fire resisting construction		Fire doors Notes 4 & 5
	Minimum fire resistance Notes 1 & 2	Method of exposure	
Structural frame, beam or column	R60	Exposed faces	--
Compartment walls	REI60	Each side separately	FD60S
Subdivision of corridors (if any)	REI30	Each side separately	FD30S
External walls Note 3: (where required in Section 6.3): > 1,000 mm from the relevant boundary	RE60 I15	From inside	--
Cavity barriers / closers	E30 I15	Each side separately	--
Refuse store	REI60	Each side separately	FD60 / FD60S
Plant rooms	REI60	Each side separately	FD30 / FD30S
Life-safety plant rooms (if any), e.g., UPS, LS switch room, etc.	REI120	Each side separately	FD120S

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 – Relative to any part that needs to be fire resisting as a result of space separation requirements, i.e., parts of, or all of the elevation may be permitted to be non-fire resisting depending on the available distance to the boundary.
Note 4 – In accordance with BS 476-22 or BS EN 1634-2 for fire resistance; and where applicable BS 476-31 or BS EN 1634-3 for smoke leakage.
Note 5 – Fire doors should be self-closing except for doors to service risers or small stores that are normally locked shut and provided with appropriate signage. The ratings shown for fire doors are for integrity only. The suffix 'S' is required in all doors if they are located along a common protected escape route.

Table 14 – Fire resistance for the Substation building only

Element	Fire resisting construction		Fire doors Notes 4 & 5
	Minimum fire resistance Notes 1, 2 and 6	Method of exposure	
Structural frame, beam or column	R240	Exposed faces	--
Compartment walls	REI240	Each side separately	FD240
External walls Note 3: (where required in Section 6.3): > 1,000 mm from the relevant boundary	RE240 I15	From inside	-- --
Cavity barriers / closers	E30 I15	Each side separately	--

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 – Relative to any part that needs to be fire resisting as a result of space separation requirements, i.e., parts of, or all of the elevation may be permitted to be non-fire resisting depending on the available distance to the boundary.
Note 4 – In accordance with BS 476-22 or BS EN 1634-2 for fire resistance; and where applicable BS 476-31 or BS EN 1634-3 for smoke leakage.
Note 5 – Fire doors should be self-closing except for doors to service risers or small stores that are normally locked shut and provided with appropriate signage. The ratings shown for fire doors are for integrity only. The suffix 'S' is required in all doors if they are located along a common protected escape route.
Note 6 – For all UKPN substations as informed by Section 8 of EDS 07-0116 [33].

Table 15 – Fire resistance for the Staff block and Welfare block only

Element	Fire resisting construction		Fire doors Notes 4 & 5
	Minimum fire resistance Notes 1 & 2	Method of exposure	
Structural frame, beam or column	R30	Exposed faces	--
Compartment walls	REI30	Each side separately	FD30S
External walls Note 3: (where required in Section 6.3): > 1,000 mm from the relevant boundary	RE30 I15	From inside	--
Cavity barriers / closers	E30 I15	Each side separately	--

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 – Relative to any part that needs to be fire resisting as a result of space separation requirements, i.e., parts of, or all of the elevation may be permitted to be non-fire resisting depending on the available distance to the boundary.
Note 4 – In accordance with BS 476-22 or BS EN 1634-2 for fire resistance; and where applicable BS 476-31 or BS EN 1634-3 for smoke leakage.
Note 5 – Fire doors should be self-closing except for doors to service risers or small stores that are normally locked shut and provided with appropriate signage. The ratings shown for fire doors are for integrity only. The suffix 'S' is required in all doors if they are located along a common protected escape route.

5.3 Fire doors and escape doors

5.3.1 Doors on escape routes should:

- open in the direction of egress (except those that serve fewer than 60 persons);
- open not less than 90°; and
- have a swing which is clear of any change in level, other than a threshold or single step on the line of a doorway.

5.3.2 Fire doors should be provided in accordance with Table 13 and Table 15. Fire door assemblies should comply with:

- BS 476-22 [34] or BS EN 1634-2 [35] for fire resistance; and, where applicable
- BS 476-31 [36] or BS EN 1634-3 [37] for smoke leakage.

5.3.3 Any fire doors fitted with hold-open devices including cross-corridor doors, should be in accordance with Clause 32.1.6.2 of BS 9999 and should release on:

- activation of the fire alarm system;
- manual operation or operation of a hand-operated switch fitted in a suitable position; and/or
- failure of the electricity supplies.

5.3.4 All doors on escape routes should either (i) not be provided with a securing device or (ii) be provided with a securing device that is easily openable without the use of a key and without having to manipulate more than one mechanism. The escape provisions should be coordinated with the security / access design.

5.3.5 Doors opening onto corridors should be sited not to encroach on the effective width of any corridor.

5.3.6 Revolving doors, turnstiles and/or electronically secured doors should be easily openable in an emergency or should fail safely into the open position upon power failure or activation of the fire alarm system and should be in accordance with BS EN 16005 and BS 7036-0. If this is not deemed practicable, then doors of an appropriate width should be provided immediately adjacent to such doors or turnstiles.

5.3.7 Vision panels should be provided in doors that swing in both directions, in doors subdividing corridors on escape routes, and where otherwise required as part of accessibility considerations.

5.4 Fire-stopping and penetrations through fire-separating elements

5.4.1 Every joint, imperfect fit and opening for services through a fire-separating element should be sealed with fire-stopping to ensure that the fire resistance of the element is not impaired.

5.4.2 Fire-stopping should be provided at the junction of fire-separating walls and external walls to maintain the fire resistance period of fire-separating walls.

5.4.3 All pipes, ductwork and services passing through fire-resisting barriers should be penetration-sealed with an appropriate system and / or fire damper which has been shown by test or assessment to maintain the period of the fire-resistance of the barrier.

Ductwork

5.4.4 Where air handling ducts pass through fire-separating elements, then the integrity of those elements should be maintained using one (or a combination of) the acceptable methods for the situation, summarised in Table 16.

5.4.5 Where ducts cross protected escape routes (e.g., common corridors), dampers on fusible links are not sufficient. Either combined fire-and-smoke dampers activated upon smoke detection (ES type dampers) are provided, or the duct should be fire-resisting / enclosed within a fire-resisting enclosure. Fire dampers are not suitable for common escape stairs, and fire resisting ductwork should be employed instead.

Table 16 – Acceptable methods of maintaining the integrity of ductwork penetrations

Method	Kitchen extract Note 1	Protected escape routes	Elsewhere
Method 1 thermally actuated fire dampers	No	No Note 3	Yes
Method 2 fire-resisting enclosures	Yes	Yes Note 2	Yes
Method 3 protection using fire-resisting ductwork	Yes	Yes Note 2	Yes
Method 4 automatically actuated fire and smoke dampers triggered by smoke detectors	No	Yes	Yes

Note 1 – Guidance on kitchen extraction systems is provided in BESA TR 19.
Note 2 – Should be used only where ductwork does not serve the escape route it passes through (see also Figure 31 of BS 9999).

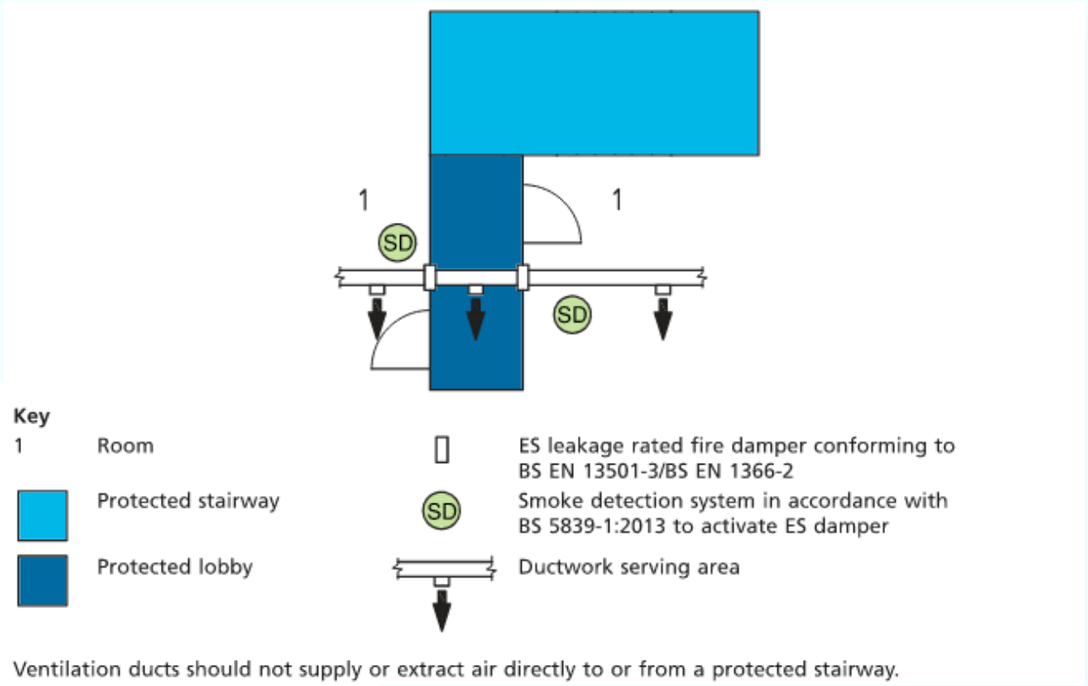


Figure 7 – Ductwork passing through protected route (Method 4)

Pipes

5.4.6 To maintain the fire resistance of separating construction, pipe penetrations through lines of fire-resisting separation should be either:

- restricted in diameter as per Table 17, with the opening kept as small as possible and gaps fire-stopped; or
- provided with a proprietary seal that has been tested in accordance with BS 476-20, BS 476-21 and BS 476-22 or BS EN 1366-3, and shown by test to maintain the fire resistance of the wall, floor or cavity barrier.

Table 17 – Limitations for pipes of restricted diameter

Situation	Maximum internal diameter (mm)		
	Non-combustible Note 1	Lead, Aluminium Alloy, uPVC Note 2, Fibre Cement	Any other material
Structure enclosing a protected shaft which is not a stairway or lift shaft	160	110	40
Compartment wall	160	160 (Stack pipe) Note 3 110 (Branch pipe) Note 3	40
Any other situation	160	160	40

Note 1 – Any non-combustible material which, if exposed to a temperature of 800˚C, will not soften or fracture to the extent that flame or hot gas will pass through the wall of the pipe.
Note 2 – uPVC pipes conforming to BS 4514 or BS EN 1329-1 and products of any diameter that fall within the scope of BS EN 1366-3 should be provided with fire stopping.
Note 3 – These diameters are only in relation to pipes forming part of an above-ground drainage system and enclosed, as shown in Figure 34 of BS 9999.

5.5 Cavity barriers

5.5.1 Extensive concealed cavities (e.g., roof voids or the void between suspended ceilings and the soffit of the floor above) require cavity barriers to sub-divide them. If internal sub-divisions and all internal walls are proposed to extend up to soffit level (i.e., underside of the slab overhead), then there should be limited extensive internal cavities.

5.5.2 Unseen fire spread should be restricted by providing cavity barriers as follows and summarised in Figure 8:

- At the junction between an external cavity wall and every compartment floor and compartment wall and to seal around any openings (windows or doors) in the external wall and to close the top of the cavity.
- At the junction between an internal cavity wall (except where the cavity wall conforms to Figure 35 of BS 9999) and every compartment floor, compartment wall, or other wall or door assembly which forms a fire-resisting barrier.
- For a protected escape route, a cavity that exists above or below any fire-resisting construction because the construction is not carried to full storey height or, in the case of a top storey, to the underside of the roof covering, should be either:
  - fitted with cavity barriers on the line of the enclosure(s) to the protected escape route; or
  - for cavities above the fire-resisting construction, enclosed on the lower side by a fire-resisting ceiling which extends throughout the compartment or separated part.
- To subdivide any cavity, including any roof space, so that undivided spaces and the distance between cavity barriers do not exceed the dimensions given in Table 18.

5.5.3 Cavity barriers should be installed in accordance with Clause 33 in BS 9999. All cavity barriers should have a fire resistance rating of at least 30 minutes for integrity (E) and 15 minutes for insulation (I).

5.5.4 Cavity barriers should be tightly fitted to rigid construction and mechanically fixed in position. If this is not possible (e.g., where a cavity barrier joins to slates, tiles, or corrugated sheeting) the junction should be closed using a suitable fire-stopping material.

5.5.5 Cavity barriers provided around an opening (e.g., windows, door frames, etc.), as per Clause 33.3 of BS 9999, should achieve the same fire rating as the cavity barriers (E30 I15) or alternatively may be formed of either:

- steel at least 0.5 mm thick;
- timber at least 38 mm thick (should not be used in the external walls);
- polythene-sleeved mineral wool, or mineral wool slab under compression when installed cavity; or
- calcium silicate, cement-based or gypsum-based boards at least 12 mm thick.

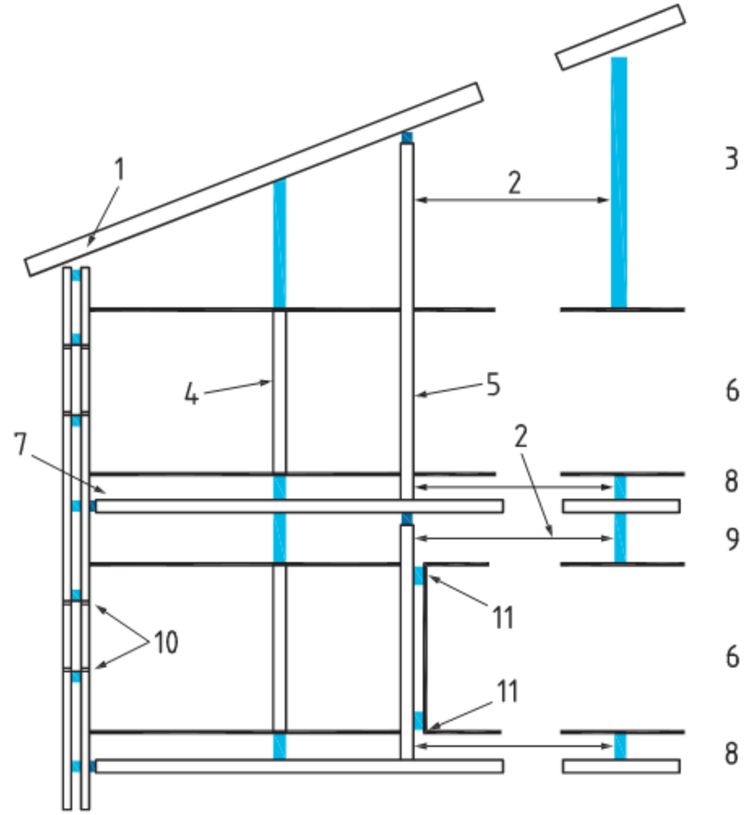
5.5.6 For external cavity walls which conform to Figure 9, combustible materials may be placed within the cavity, and cupboards for switch boards, service boxes, service panels, etc., may be installed provided that:

- There are no more than two cupboards per compartment;
- The openings in the outer wall leaf are not more than 800 mm × 500 mm for each cupboard; and
- The inner leaf is not penetrated except by a sleeve not more than 80 mm × 80 mm, which is fire-stopped.

Table 18 – Maximum dimensions of cavities

Location	European classification [Note 2]	Maximum dimensions (m)
Between a roof and a ceiling	Any	20
Any other cavity [Note 1]	Class A1; Class A2-s3, d2; Class B-s3, d2; or Class C-s3, d2.	20
	Not any of the above classes	10

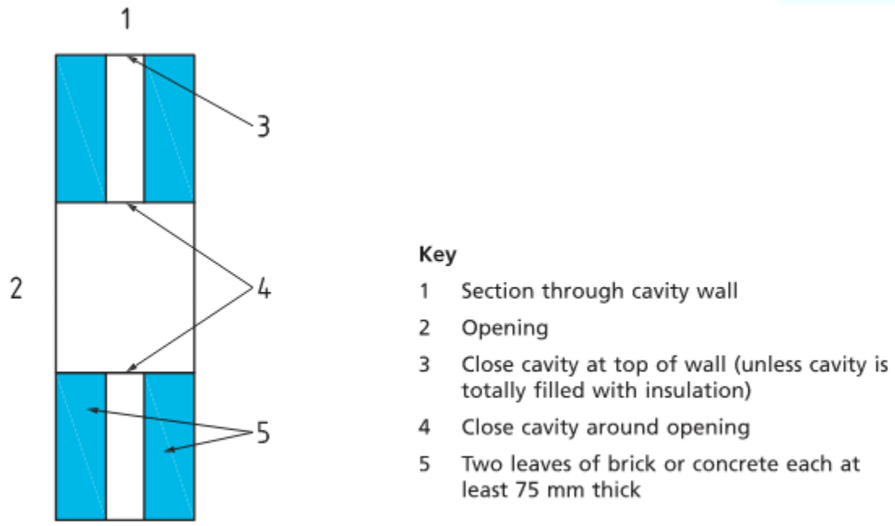
Note 1 – Extended to 40 m where any single room with a ceiling cavity or underfloor service void in which the surface of the material/product exposed in the cavity is Class C-s3, d2 or better.
Note 2 – When a classification includes "-s3, d2", this means that there is no limit set for smoke production and/or flaming droplets/particles.



Key

1 Close top of cavity
2 Subdivide extensive cavities
3 Roof space
4 Wall forming bedroom or protected escape routes
5 Compartment wall
6 Accommodation
7 Compartment floor
8 Floor space
9 Ceiling space
10 Close around openings
11 Close around edges
Cavity barrier (30 min integrity/ 15 min insulation as in Table 22)
Fire-stopping (same fire resistance as compartment – not cavity barrier)

Figure 8 - Cavity barrier locations. Image adapted from Figure 35 of BS 9999



Key

1 Section through cavity wall

2 Opening

3 Close cavity at top of wall (unless cavity is totally filled with insulation)

4 Close cavity around opening

5 Two leaves of brick or concrete each at least 75 mm thick

Figure 9 – Cavity wall excluded from provisions for cavity barriers. Image adapted from Figure 36 of BS 9999

6 EXTERNAL FIRE SPREAD

The Building Regulations 2010 (as amended) functional requirement B4 states:

"(1) The external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of the building.

(2) The roof of the building shall adequately resist the spread of fire over the roof and from one building to another, having regards to the use and position of the building".

6.1 External surfaces and wall materials

6.1.1 External walls should be constructed such that they will not support fire spread at a speed that is likely to threaten people in or around the building.

6.1.2 External wall surfaces near other buildings should not be readily ignitable, to avoid fire spread between buildings.

6.1.3 Thermal breaks (thermal bridging elements) should not span two compartments. There is no minimum performance for the materials used, however, the minimum amount of material required to restrict thermal bridging should be used.

6.1.4 As all buildings in this proposed development are located on a single storey, Figure 47 and Clause 35.5 of BS 9999 do not provide limitations on the external wall fire spread classification.

6.1.5 Additionally, as the building height falls below the threshold of 18 m, Regulation 7(2) of the Building Regulations 2010 (as amended) does not apply to this proposed development.

6.1.6 External wall linings that do not achieve Class B-s3, d2 are considered combustible and will constitute an additional unprotected area of 50% of the actual area of combustible material in accordance with Clause 35.2.1(b) of BS 9999.

6.2 Roof coverings

6.2.1 Roof coverings should be designated in accordance with the prescriptive recommendations of BS 9999, as summarised in Table 19. Recommendations given in this table are not exhaustive as dispensations are provided in Clause 35.4 of BS 9999.

6.2.2 No thermoplastic roof lights have been proposed within the buildings.

6.2.3 In order to reduce the risk of fire penetrating the roof near a compartment wall, a zone of roof 1.5 m wide should have a covering of European class Broof(t4) on a substrate or deck of Class A2 materials to both sides above compartment walls, as detailed in Figure 30 of BS 9999 (herein reproduced as Figure 10).

Table 19 – Limitations on roof coverings

Designation of roof or part of roof covering [Note 1]	Distance from relevant boundary [Note 2]			
	<6 m	≥6 m	≥12 m	≥20 m
B_{ROOF}(T4)	Acceptable	Acceptable	Acceptable	Acceptable
C_{ROOF}(T4)	Not Acceptable	Acceptable	Acceptable	Acceptable
D_{ROOF}(T4)	Not Acceptable	Acceptable [Notes 3 & 4]	Acceptable [Note 3]	Acceptable
E_{ROOF}(T4)	Not Acceptable	Acceptable [Note 4]	Acceptable	Acceptable
F_{ROOF}(T4)	Not Acceptable	Not Acceptable	Not Acceptable	Acceptable [Note 4]

Note 1 – This class is in accordance with Commission Decision 2055/823/EC amending Decision 2001/671/EC in accordance with BS EN 13501-5. Test 4 within BS EN 13501-5 is to be used in determining the classification.
Note 2 – Recommendations given in this table are not exhaustive as dispensations are provided in BS 9999, including for roof lights.
Note 3 – Not acceptable on any of the following buildings:
i) occupancy characteristic A; or
ii) buildings with a volume of more than 1,500 m^3.
Note 4 – Acceptable on buildings not listed in Note 3 above if:
i) part of the roof is no more than 3 m^2 in area and is at least 1.5 m from any similar part; and
ii) the roof between the parts is covered with a material of Class A2-s3, d2 or better.

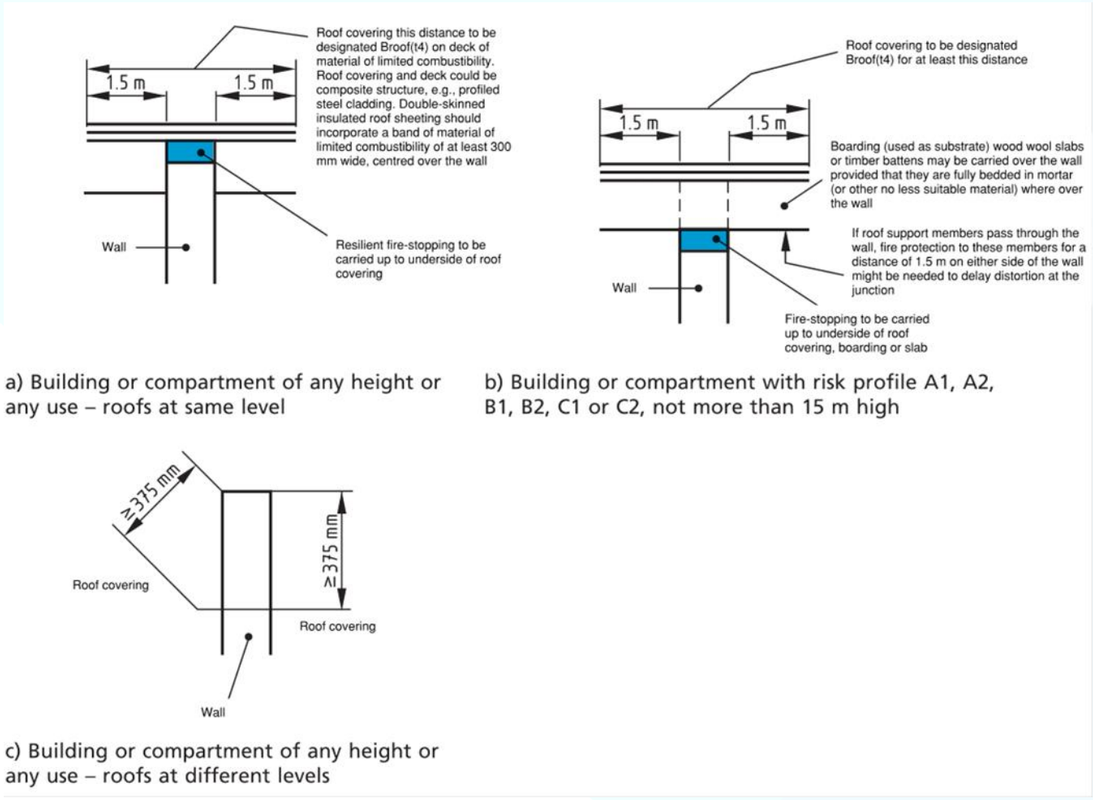


Figure 10 – Junction of a fire-rated / compartment wall with a roof. Image adapted from Figure 30 of BS 9999

6.3 Space separation and unprotected areas of the external walls

6.3.1 Should a fire occur in a building, heat will 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 likelihood 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.

6.3.2 Clause 35.1.2 of BS 9999 states that space separation for buildings on the same site having occupancy characteristic A does not need to be performed among buildings that are operated or managed by the same organisation. Therefore, the functional requirement B4 of the Building Regulations 2010 (as amended) would be met without explicitly performing the space separation calculation for the following buildings:

- Staff block; and
- Welfare block.

6.3.3 The relevant site boundaries are taken as indicated in Figure 12, utilising the notional site boundaries (e.g., half distance between buildings on the same site), centreline of the surrounding roads and public spaces, where each of these are suitably unlikely to be developed.

6.3.4 Using the calculation process outlined in BR 187 [38] an analysis of the distance between the building and the adjacent roads or notional boundaries has been undertaken. For all areas, the radiation intensity value of 168 kW/m^2 recommended by BR 187 has been utilised.

6.3.5 The fire spread calculations undertaken in Table 20 are for the most onerous compartments within the buildings of the proposed development.

Table 20 – Space separation calculation

Building	Elevation	Relevant boundary (m)	Heat flux (kW/m²)	Width (m)	Height (m)	Allowable unprotected area (%)	Required distance for 100% allowable unprotected area (m)
F&B Unit	1	3.1	168	12.6	5.5	23%	8.1
	2	14.4	168	17.3	5.5	100%	--
	3	10.8	168	17.3	5.5	100%	--
Substation (West)	1	1.80	168	3.1	3.0 Note 1	41%	3.0
	2	7.80	168	3.1	3.0 Note 1	100%	--
Substation (East)	1	7.80	168	3.1	3.0 Note 1	100%	--
	2	4.00	168	3.1	3.0 Note 1	100%	--
Electrical plant	1	4.00	168	8.2	3.0 Note 1	73%	4.8
	2	4.50	168	32.4	3.0 Note 1	48%	8.1

Note 1 – In the absence of elevation details for these layouts, a typical building height of 3.0 m has been taken for the assessment, subject to confirmation in the subsequent RIBA stages.

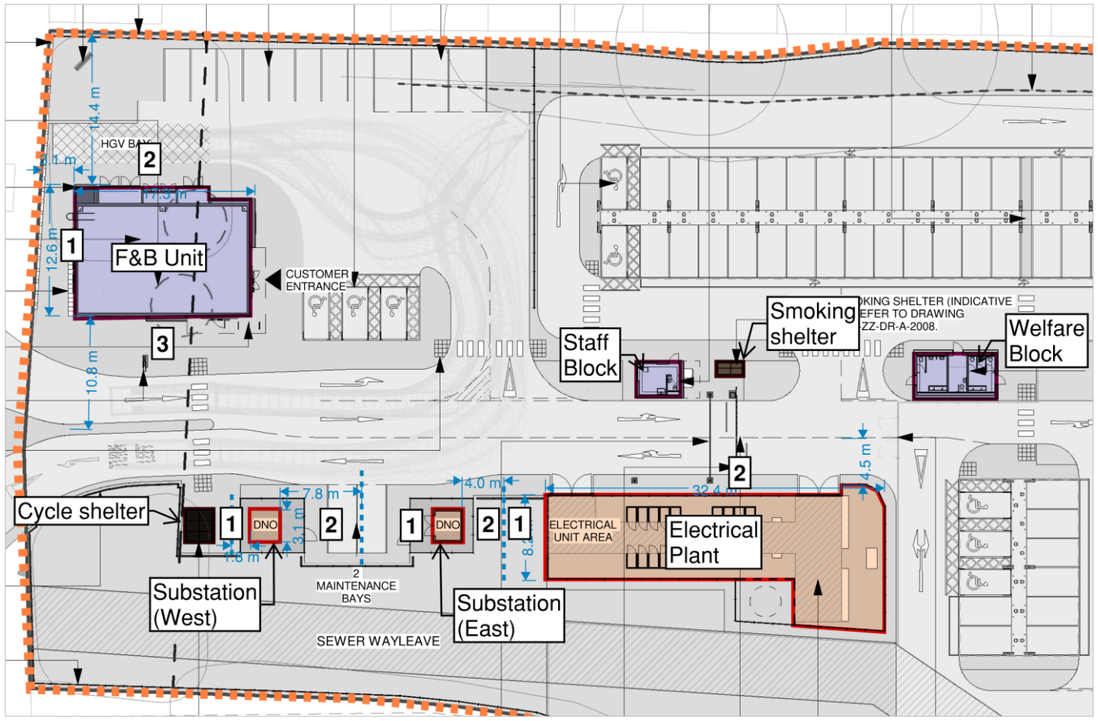


Figure 11 – Relevant boundary distance and building widths

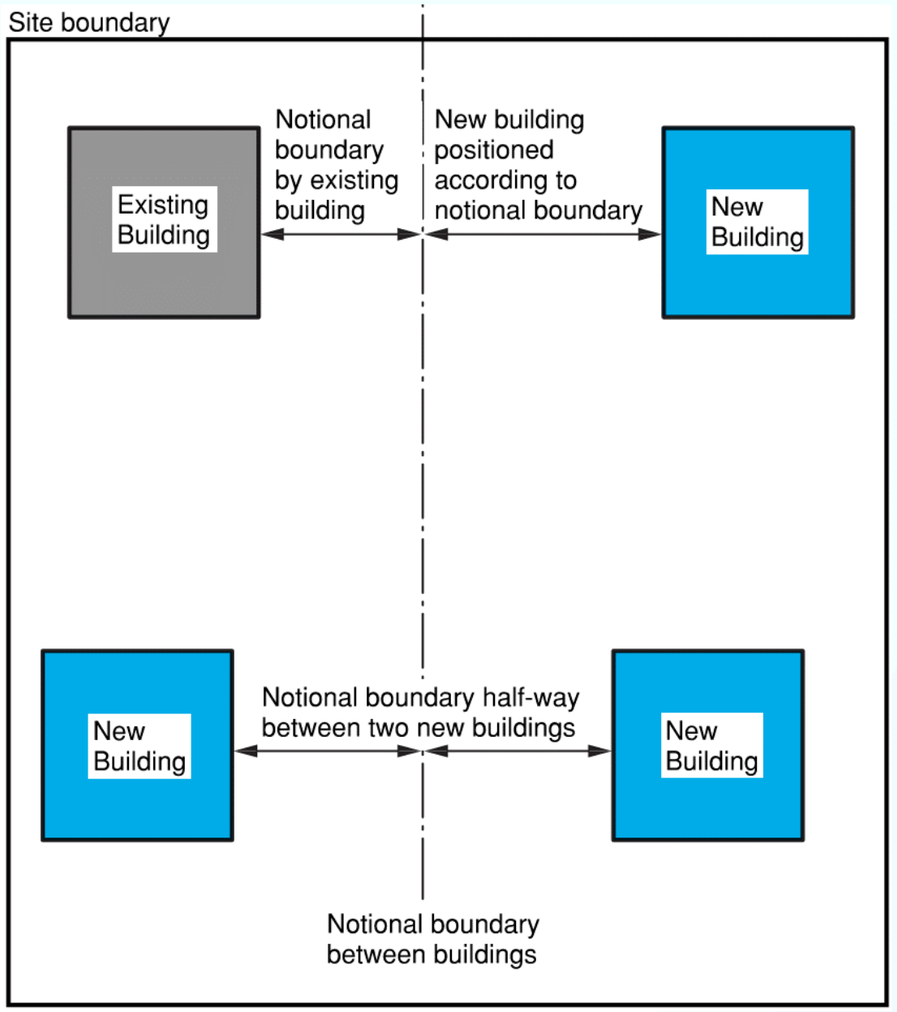


Figure 12 – Notional boundary among new and existing buildings. Image adapted from Figure 43 of BS 9999

7 ACCESS AND FACILITIES FOR FIREFIGHTING

The Building Regulations 2010 (as amended) functional requirement B5 states:

"(1) The building shall be designed and constructed so as to provide reasonable facilities to assist firefighters in the protection of life.

(2) Reasonable provision shall be made within the site of the building to enable fire appliances to gain access to the building."

7.1 Overview

7.1.1 In the event of fire, the fire and rescue service (FRS) may be notified by the FDA system within the building(s).

7.1.2 A fire alarm panel should be provided within the proposed development. A repeater fire alarm panel interlinked with the main fire alarm panel may be used, subject to confirmation with the specialist designer (see also Section 3.1).

7.2 Vehicle access to and around the site

7.2.1 Fire and rescue service access to and around the site is understood to be via the adjacent roads. The route to the building should be appropriate for the appliance access requirements, including sufficient turning facilities, typical values noted in Table 20.

7.2.2 In accordance with Clause 21.3 of BS 9999, turning facilities (e.g., hammerhead or turning circle) should be provided in any dead-ends exceeding 20 m. Based on the site plan provided, it is observed that no additional turning facilities are required in this proposed development.

7.2.3 It must be ensured that a fire service vehicle may enter this location (i.e., no locked gates, bollards or height restrictions).

7.2.4 The building has a total floor area of less than 2,000 m^2, a topmost floor below 11 m and is not fitted with a fire main. As per Clause 21.2 of BS 9999, the building should be provided with access to a pump appliance to whichever is the less onerous of the following:

- Access to 15% of the building perimeter; or
- Access to within 45 m of every point of the footprint of the building.

7.2.5 Whereby, the terms 'perimeter' and 'footprint' are defined in Figure 26 of BS 9999. With that in mind, all buildings will achieve the latter requirement, that is, access will be provided within 45 m of every point of the footprint of the building.

7.2.6 Each elevation to which vehicle access is provided should have a door, a minimum of 750 mm wide, to give access into the building. The maximum distance between doors, or between a door and the end of the elevation, is 60 m, as per Clause 21.2 of BS 9999.

7.2.7 Fire and rescue service access should be sized in accordance with the recommendations given in Table 20 of BS 9999 and GN29 [39], as summarised in this report as Table 21.

Table 21 – Typical FRS vehicle access route specification

Element	Minimum recommended for pump appliances
Width between kerbs	3.7 m
Width between gateways	3.1 m
Turning circle between kerbs	16.8 m
Turning circle between walls	19.2 m
Clearance height	3.7 m
Carrying capacity	14.0 tonnes

7.3 Water supplies

7.3.1 Water should be supplied for firefighting use via a fire hydrant. The location of existing operational fire hydrants has been provided by the London Fire Brigade via email correspondence with SOCOTEC dated 5th June 2025. This has been reflected in Figure 13.

7.3.2 Hydrants should be required in the vicinity of the building to support firefighting operations. Hydrants should be provided within 90 m of an entry point to the building and be located no more than 90 m apart, in accordance with Clause 22.2(b) of BS 9999.

7.3.3 It is, however, observed in Figure 14 that the existing operational public hydrants are not located within 90 m of the entrance of the Welfare Block.

7.3.4 Due to the envisaged high volume of water required to extinguish EV cars (see Section 3.9), consideration should be made for hydrants to be located within 90 m of every EV car park. Therefore, private fire hydrants may be required to be included in this development. This consideration should be further investigated in the subsequent RIBA stages.

7.3.5 An operational status check and a pressure test of the nearby public hydrant(s) should be undertaken on site prior to the construction stage.

7.3.6 A water supply capable of providing a minimum of 1,500 litres per minute at all times is recommended. Water supplies should be designed and installed in accordance with BS 9990 [40].

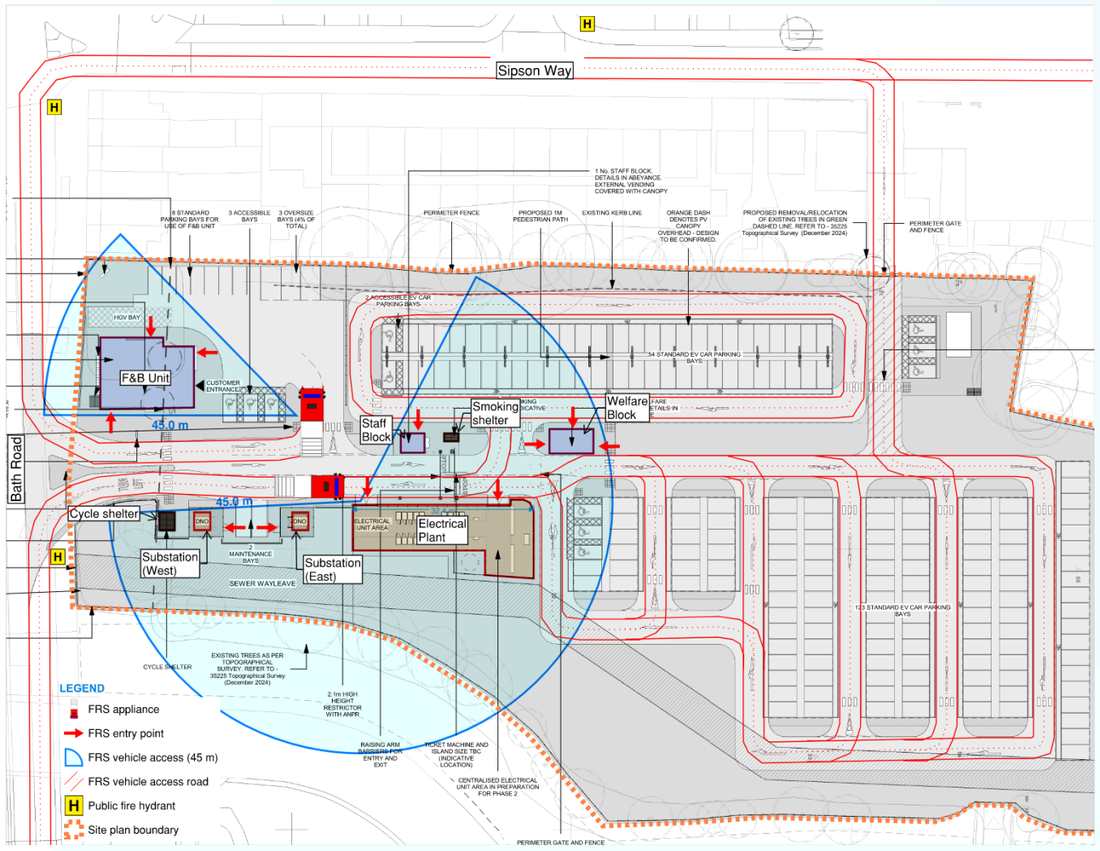


Figure 13 – Firefighting access around and to the building

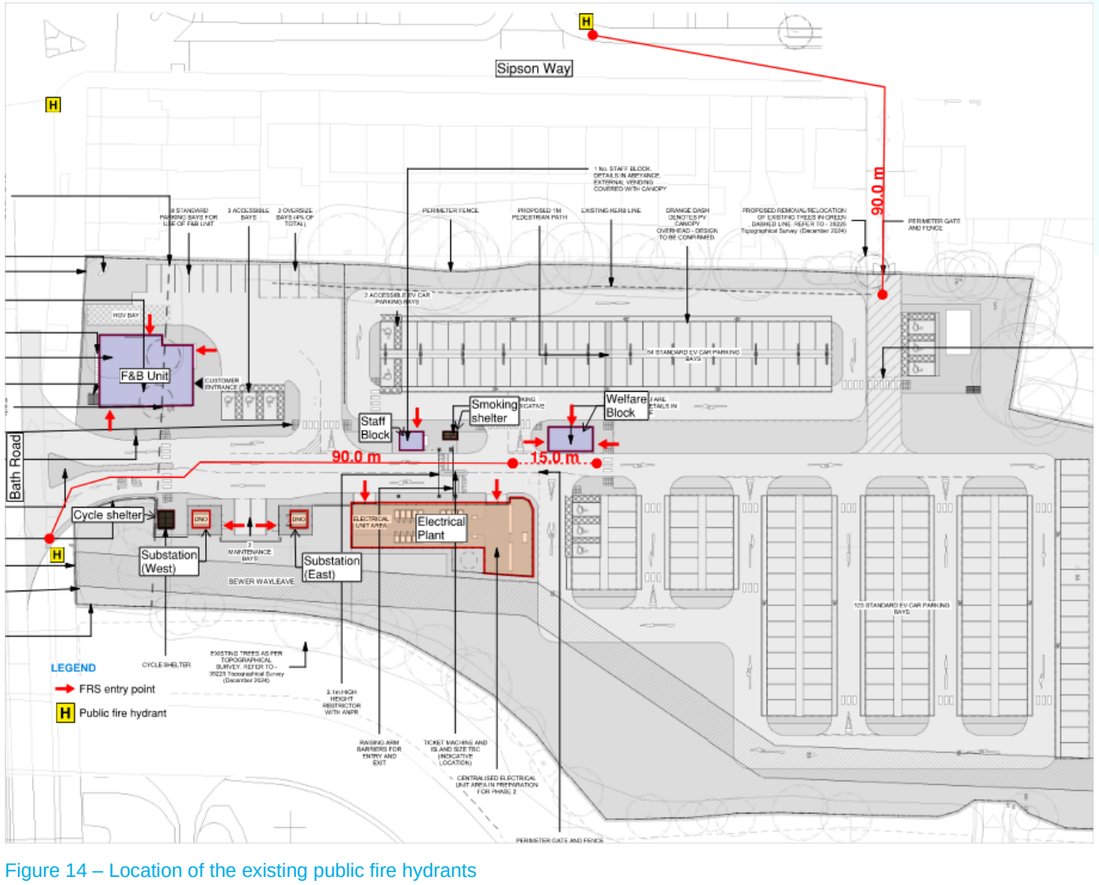


Figure 14 – Location of the existing public fire hydrants

8 FIRE SAFETY MANAGEMENT

8.1 Fire Safety Act 2021

8.1.1 On 16th May 2022, the Fire Safety Act 2021 (FSA) was introduced and this clarified the scope of the Regulatory Reform (Fire Safety) Order (RRO) 2005 to ensure the RRO applies to the structure, external walls (including cladding and balconies).

8.1.2 Responsible persons should ensure that all below measures are considered during the building operation:

- Display fire safety instructions in a visible part of the building. The instructions must be in a comprehensible form that residents can reasonably be expected to understand.
- All fire doors in communal areas of the building must be checked at least every three months.
- Undertake checks of all fire doors at periods not exceeding 12 months.
- Prepare a record of the design of the external walls of the building, including details of the materials from which they are constructed. Provide this record to the local fire and rescue service by electronic means.
- Responsible person(s) must undertake monthly routine checks of essential firefighting system, for example:
    - fire suppression systems (if any), fire detection and fire alarm systems

8.1.3 Responsible persons should keep records of all of these monthly checks. The records of these checks must be accessible to residents of the building.

8.2 Regulatory Reform (Fire Safety Order 2005)

8.2.1 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.

8.2.2 In workplaces, the responsible person is the employer. In other cases, the owner or person in control of the premises is the responsible person.

8.2.3 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.

8.2.4 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, a building supervisor, the facilities management company and the head teacher of a school.

8.3 Fire safety management documentation

8.3.1 The Fire Safety (England) Regulations 2022 introduce new duties under the FSO for building owners or managers (responsible persons). These regulations make it a requirement in law for responsible persons of high-rise blocks of flats to provide information to Fire and Rescue Services to assist them to plan and, if needed, provide an effective operational response.

8.3.2 Under the FSO, the landlord or building management company is responsible for developing a fire safety plan. To achieve the required level of information dissemination and availability, a fire safety manual should be produced specific to the site. Annex H of BS 9999 provides guidance on the preparation of fire safety manuals.

8.3.3 It is recommended that adequate premises information for the fire and rescue service is provided on site in a suitable manner, e.g., premises information box or similar. Further guidance relating to the format of this information can be obtained from the London Fire Brigade Fire Safety Team.

8.3.4 The responsible person(s) for the premises should ensure that all fire safety arrangements being maintained are accounted for as part of their fire risk assessment(s).

8.3.5 The remainder of this section provides guidance regarding management issues identified during the strategic development of the fire safety strategy for this building. This may be utilised to inform the ongoing fire risk assessment for the building, which should monitor the degree to which these items are being upheld in practice.

8.4 Maintenance of fire safety systems

8.4.1 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;
- Emergency communication devices (if any);
- Fire doors, including door closers and smoke seals;
- Emergency lighting and any illuminated signage;
- Automatic fire suppression systems (if any);
- Fire dampers, whether automatic or intumescent (if any);
- Back-up power supplies; and
- Fire extinguishers provided in non-domestic areas.

8.4.2 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.

8.5 Management of safety

8.5.1 In the common and non-residential areas, management will be responsible for ensuring that fire safety provisions and assumptions for these areas are maintained and enforced. These include, but are not limited to:

- Ensuring that the common entrance lobbies, corridors, etc. remain suitably fire sterile (no stored combustible goods or refuse) and are free of obstacles which may hinder escape.
- Ensuring that fire doors in common areas may operate effectively 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.
- Management should ensure that service risers and storage areas accessed from common corridors are locked shut when not in use.
- In non-residential areas, the building management will be responsible to assist disabled occupants outside the building and implement the evacuation strategy to designated assembly point.

9 DECLARATIONS AND RECOMMENDATIONS

9.1 Declarations

9.1.1 As long as the requirements listed in this fire statement are achieved, the fire safety of the proposed development and the fire safety information satisfy the requirements of London Plan Policy D12B.

9.1.2 This assessment has been performed based on the recommendations of BS 9999: 2017 Fire safety in the design, management and use of buildings – Code of practice.

9.2 Design recommendations

9.2.1 The high-level requirements described within the current report shall be fully reviewed and confirmed by the design team during the design process and are expected to be fully incorporated as part of a formal fire safety strategy document.

9.2.2 The space separation calculation show that certain elevations for the F&B unit, Substation (West) building and the Electrical plant may need to be fire resisting (see Table 20) due to proximity with the site boundary and/or other buildings.

9.2.3 Consideration should be made for the provision of additional public or private fire hydrants (see Section 7.3).

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APPENDIX A. COMPARTMENTATION DRAWINGS

SITE INFORMATION

TOTAL SITE AREA: 4.0 ACRES / 16390m²

SITE ACCOMMODATION

FLEXI COMMERCIAL EV STANDARD BAYS - 177 BAYS (SUBJECT TO NETWORK CAPACITY AVAILABILITY)
ACCESSIBLE EV PARKING BAYS - 8 BAYS
F&B STANDARD PARKING - 8 BAYS
F&B ACCESSIBLE PARKING - 3 BAYS
F&B OVERSIZE PARKING - 3 BAYS

TOTAL PUBLIC PARKING BAYS ON SITE: 199

HGV WASTE / DELIVERY BAY: 1
DNO MAINTENANCE BAYS: 2

F&B UNIT - 184m²
WELFARE BUILDING - 35m² x 2
ELECTRIC UNIT AREA - 414m²
STAFF UNIT - 15m²

SIPSON WAY

BLUE LINE DENOTES EXISTING BOUNDARY FENCE AS PER TOPOGRAPHICAL SURVEY. REFER TO - 35225 Topographical Survey (December 2024)

8 STANDARD PARKING BAYS FOR USE OF F...

3 ACCESSIBLE BAYS

3 OVERSIZE BAYS (4% OF

8 standard (+ 3 oversized) parking bays

1 No. STAFF BLOCK. DETAILS IN ABEYANCE. EXTERNAL VENDING COVERED WITH CANOPY

PERIMETER FENCE

PROPOSED 1M PEDESTRIAN PATH

EXISTING KERB LINE

ORANGE DASH DENOTES PV CANOPY OVERHEAD - DESIGN TO BE CONFIRMED.

PROPOSED REMOVAL/RELOCATION OF EXISTING TREES IN GREEN DASHED LINE. REFER TO - 35225 Topographical Survey (December 2024)

PERIMETER GATE AND FENCE

INDICATIVE LOCATION OF HIGH TOTEM SIGNAGE

1.1m BRICK WALL

PROPOSED REMOVAL/RELOCATION OF EXISTING TREES IN GREEN DASHED LINE. REFER TO - 35225 Topographical Survey (December 2024)

HGV Bay

HGV BAY

2 ACCESSIBLE EV CAR PARKING BAYS

3 accessible parking bays

E-COMMERCE PICK UP / DROP OFF SMART LOCKER - 95 OPENINGS

F&B UNIT. DESIGN SUBJECT TO OCCUPIER SPEC TBC.

F&B Unit

CUSTOMER ENTRANCE

3 accessible parking bays

54 standard (+ 2 accessible) EV car parks

PERIMETER GATE AND FENCE BETWEEN PHASES 1 & 2, WITH TEMPORARY KERB AND BANK, TO BE REMOVED ONCE PHASE 2 IS IN OPERATION.

2 LONG STAY CYCLE PARKING SECURE LOCKERS

3 SHEFFIELD STANDS FOR CUSTOMER PARKING & E-BIKE BATTERY CHARGING UNIT

PHASE 1 SMOKING SHELTER (INDICATIVE LOCATION)

1 No. WELFARE BLOCK. DETAILS IN ABEYANCE

Staff Block

Welfare Block

DROPPED KERBS

INDICATIVE LOCATION OF WAYFINDING SIGNAGE

BATH RD

ACCESS JUNCTION AS PER S278 WORKS. DRWG. REFERENCE: 0001 Rev P6 - FOR CONSTRUCTION

Cycle shelter

DNO

DNO

ELECTRICAL UNIT AREA

Electrical Plant (GAs TBC)

Substation building (GAs TBC)

KNEE RAIL FENCE

1.1m BRICK WALL

MAGENTA DENOTES TREE ROOT PROTECTION AREA

EXISTING FENCE TO BE REMOVED AND NEW FENCE TO BE ERECTED TO PERIMETER.

8 standard (+ 3 accessible) EV car parks

12 standard EV car parks

123 STANDARD EV CAR PARKING BAYS

28 standard EV car parks

28 standard EV car parks

28 standard EV car parks

19 standard EV car parks

CYCLE SHELTER

EXISTING TREES AS PER TOPOGRAPHICAL SURVEY. REFER TO - 35225 Topographical Survey (December 2024)

2.1m HIGH HEIGHT RESTRICTOR WITH ANPR

RAISING ARM BARRIERS FOR ENTRY AND EXIT

TICKET MACHINE AND ISLAND SIZE TBC (INDICATIVE LOCATION)

CENTRALISED ELECTRICAL UNIT AREA IN PREPARATION FOR PHASE 2

PERIMETER GATE AND FENCE BETWEEN PHASES 1 & 2, WITH TEMPORARY KERB AND BANK, TO BE REMOVED ONCE PHASE 2 IS IN OPERATION.

BRIDGE OVER M4 MOTORWAY

TUNNEL ROAD W (M4)

NOTES

This drawing should be read in conjunction with associated report(s) and supporting detailed information.

The fire resistance illustrated on this drawing are for separating or enclosing areas of the building. The performance of the load-bearing structure, external walls and floors should be in accordance with the building fire safety report.

Unless otherwise shown, fire resistance provisions and method of exposure should be in accordance with the fire strategy and associated references.

Unless otherwise shown, fire doors should be in accordance with the fire strategy and associated references.

LEGEND

- EV parking bay charge points
- Non-EV parking bay
- Site plan boundary

REVISIONS

1	10/06/25	Initial issue	JW AK
2	17/06/25	First update RS2	JW AK

SOCOTEC UK LTD.
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firesafety@.socotec.co.uk

PROJECT

HEATHROW FLIGHTPATH CAR PARK

HEATHROW FLIGHTPATH CAR PARK, UB7 0DU

SOCOTEC

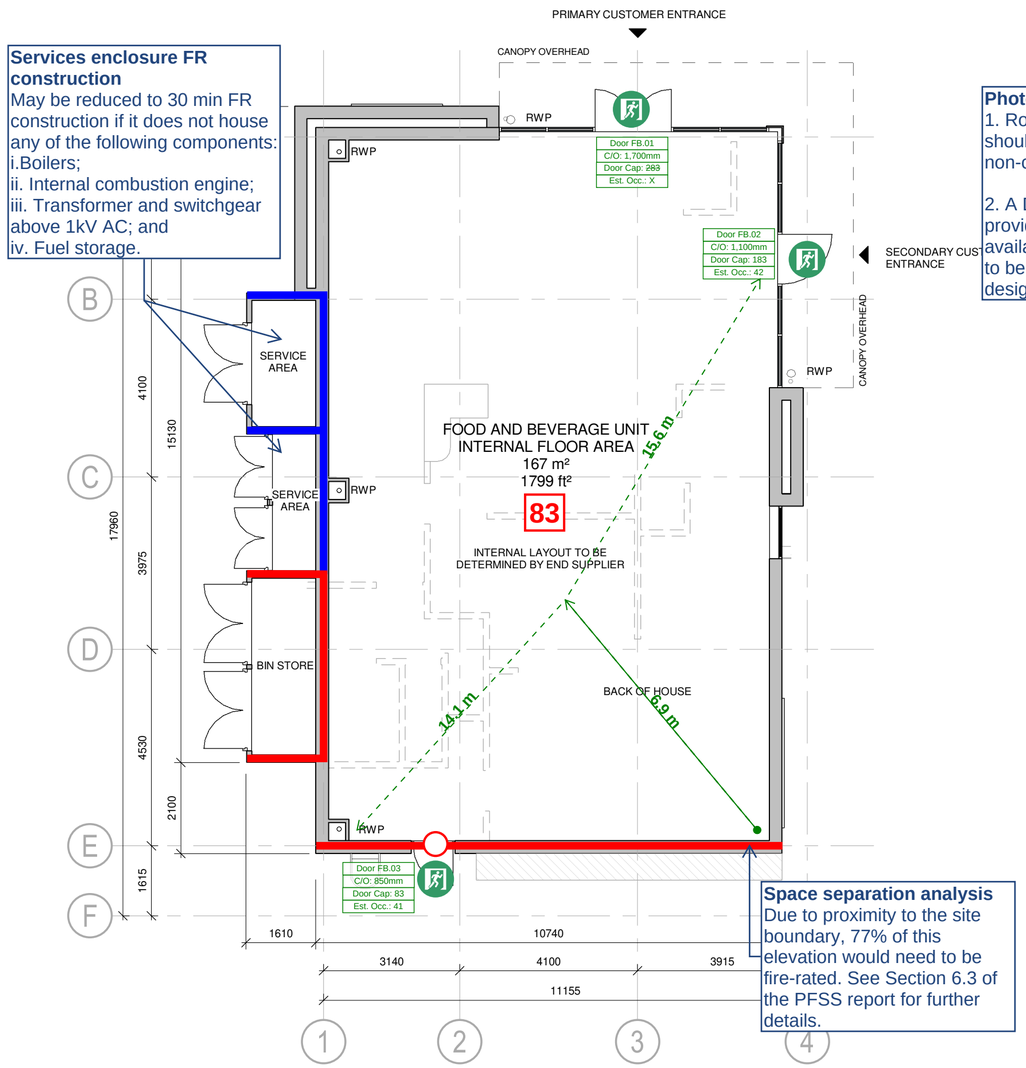
PROPOSED FIRE STRATEGY

SITE PLAN

SCALE	DRAWN	REVIEWED	CREATED
1:500@A2	JW	AK	05/06/25

PROJECT NO	DRAWING NO	REVISION
TX 166083	10100	2

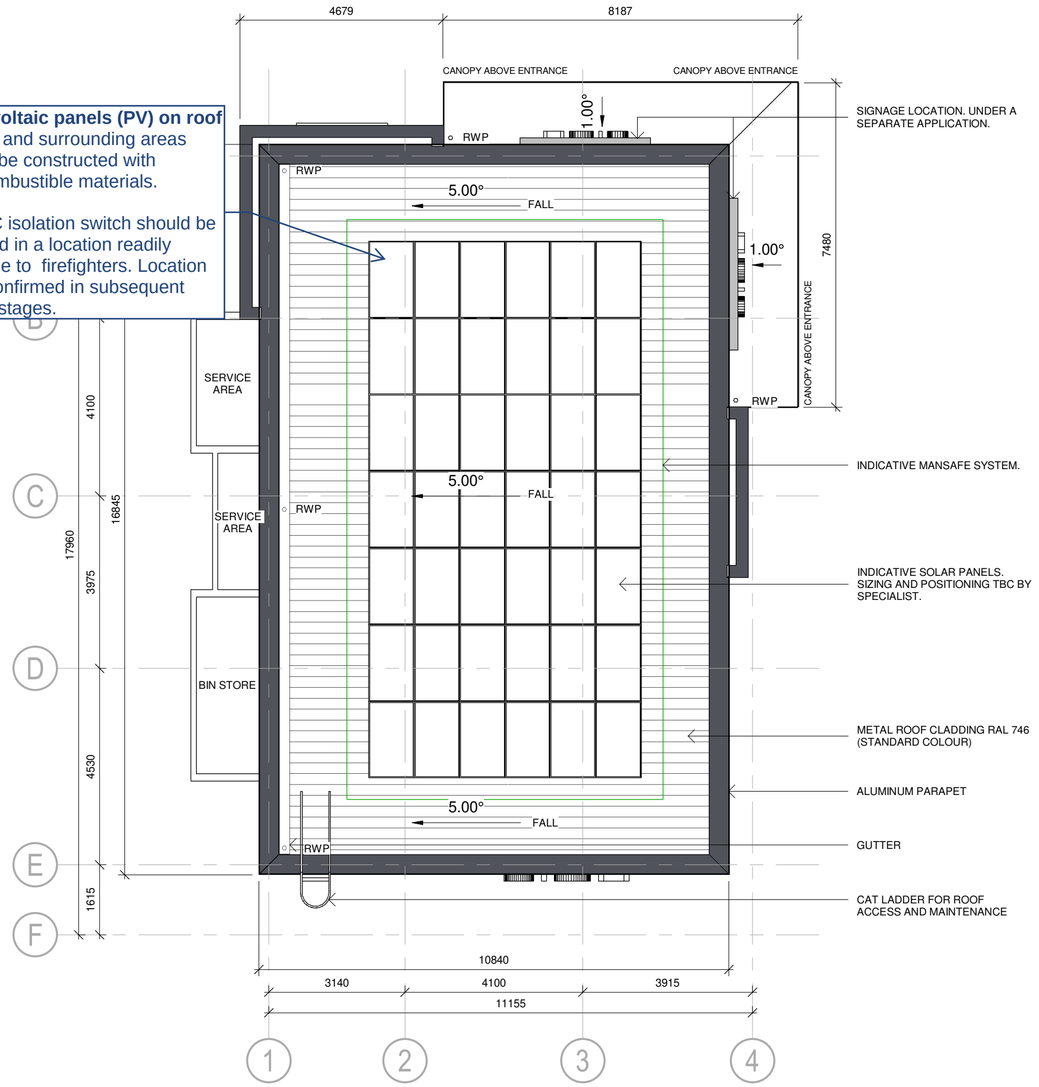
NOTE: FOR ELEVATIONS REFER TO DRAWING 7935-SMR-01-ZZ-DR-A-2102



Services enclosure FR construction
May be reduced to 30 min FR construction if it does not house any of the following components:
i.Boilers;
ii. Internal combustion engine;
iii. Transformer and switchgear above 1kV AC; and
iv. Fuel storage.

Space separation analysis
Due to proximity to the site boundary, 77% of this elevation would need to be fire-rated. See Section 6.3 of the PFSS report for further details.

PROPOSED FOOD AND BEVERAGE GA FLOOR PLAN
1 : 100



Photovoltaic panels (PV) on roof
1. Roof and surrounding areas should be constructed with non-combustible materials.

2. A DC isolation switch should be provided in a location readily available to firefighters. Location to be confirmed in subsequent design stages.

PROPOSED FOOD AND BEVERAGE GA ROOF PLAN
1 : 100

NOTES
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Unless otherwise shown, fire doors should be in accordance with the fire strategy and associated references.

LEGEND
- Door width & Occ limit
- Final exit
- 83 Occupancy
- One-way travel distance
- Two-way travel distance

REVISIONS
1	10/06/25 Initial issue	JW	AK
2	17/06/25 First update RS2	JW	AK

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PROJECT

HEATHROW FLIGHTPATH CAR PARK

HEATHROW FLIGHTPATH CAR PARK, UB7 0DU

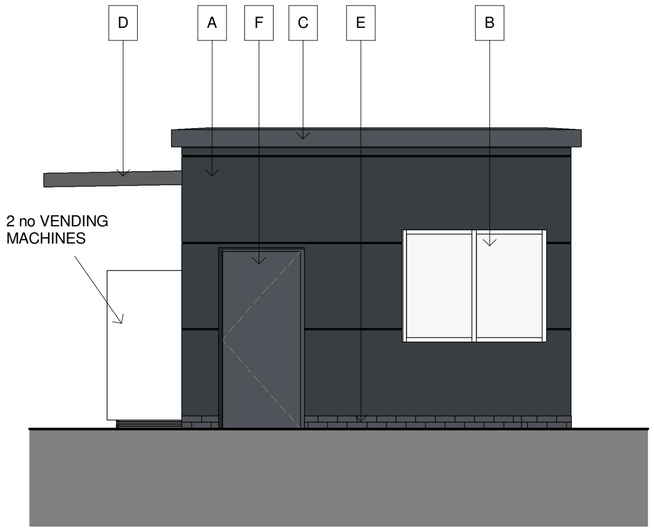
SOCOTEC

PROPOSED FIRE STRATEGY

F&B FLOOR PLAN

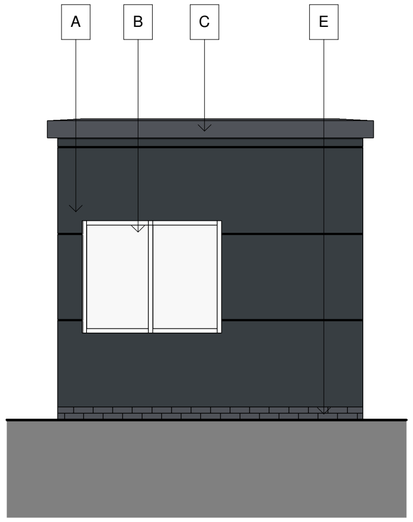
SCALE	DRAWN	REVIEWED	CREATED
1:100@A2	JW	AK	05/06/25

PROJECT NO	DRAWING NO	REVISION
TX 166083	10101	2



E01 - FRONT ELEVATION
1 : 50

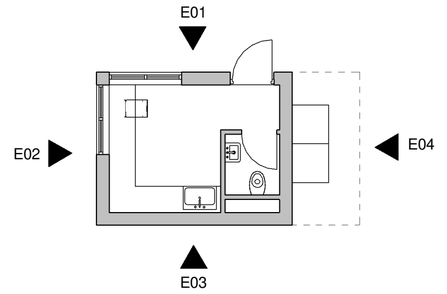
E04 - SIDE ELEVATION
1 : 50



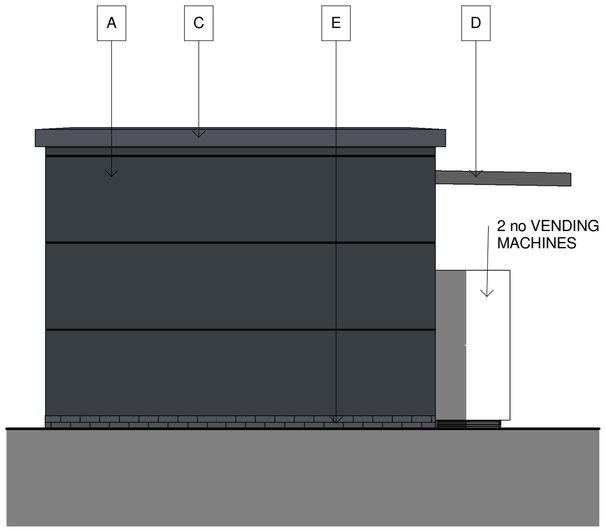
E02 - SIDE ELEVATION
1 : 50

PROPOSED MATERIALS SCHEDULE

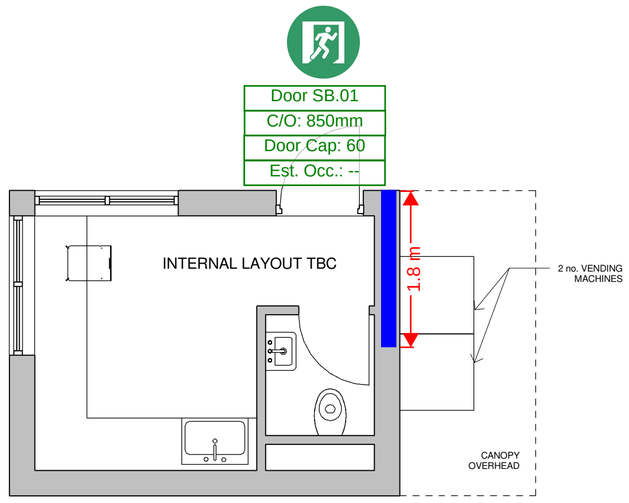
A	HORIZONTALLY LAID MIRCRORIB PROFILED COMPOSITE CLADDING PANELS. COLOUR: ANTHRACITE GREY, RAL 7016
B	GLAZING, SOLAR REFLECTIVE WITH INTERNALLY BEADED ANTI-BANDIT GLAZING. ALUMINIUM FRAMING COLOUR: ANTHRACITE GREY, RAL 7016.
C	ALUMINUM PARAPET. COLOUR: SLATE GREY, RAL 7015
D	STEEL FLASHINGS & FASCIA, RAL 7015 TO MATCH PARAPET
E	BRICK PLINTH. ALL BRICK LAID STRETCHER BOND. COLOUR: SLATE GREY, RAL 7015
F	STEEL-FACED SECURE DOOR SLATE GREY, RAL 7015



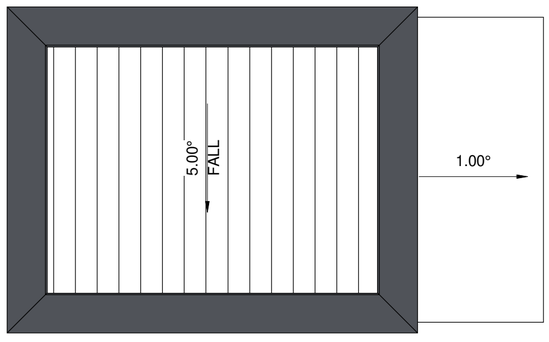
REFERENCE PLAN
1 : 100



E03 - REAR ELEVATION
1 : 50



GROUND FLOOR PLAN
1 : 50



ROOF PLAN
1 : 50

NOTES

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Unless otherwise shown, fire doors should be in accordance with the fire strategy and associated references.

LEGEND

Final exit

REVISIONS

1	10/06/25	Initial issue	JW AK
2	17/06/25	First update RS2	JW AK

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PROJECT

HEATHROW FLIGHTPATH CAR PARK

HEATHROW FLIGHTPATH CAR PARK, UB7 0DU

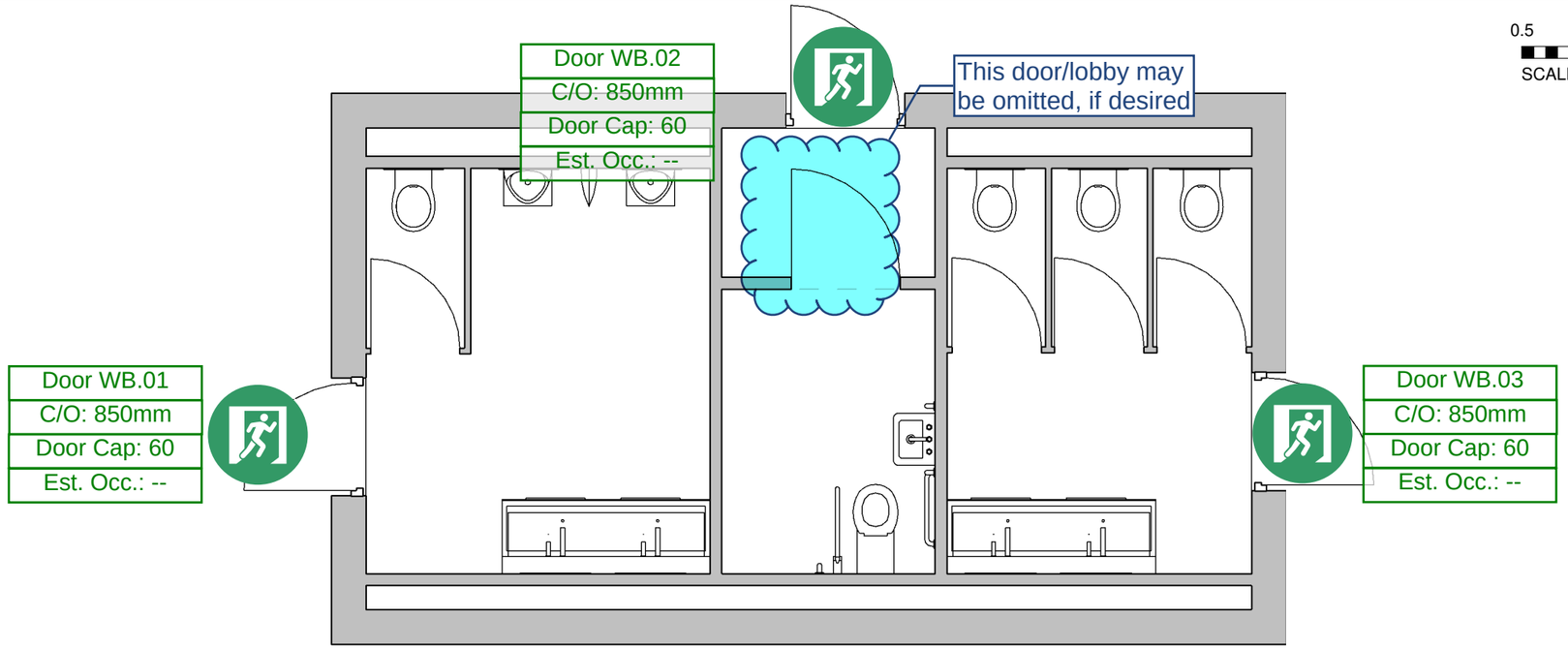
SOCOTEC

PROPOSED FIRE STRATEGY

STAFF BLOCK FLOOR PLAN

SCALE	DRAWN	REVIEWED	CREATED
1:50@A2	JW	AK	05/06/25

PROJECT NO	DRAWING NO	REVISION
TX 166083	10102	2



0.5 0 0.5 1 1.5 2 2.5

SCALE 1:50 m

GROUND FLOOR PLAN

1 : 50

NOTES

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Unless otherwise shown, fire doors should be in accordance with the fire strategy and associated references.

LEGEND

Final exit

REVISIONS

1	10/06/25	Initial issue	JW	AK
2	17/06/25	First update RS2	JW	AK

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PROJECT

HEATHROW FLIGHTPATH CAR PARK

HEATHROW FLIGHTPATH CAR PARK, UB7 0DU

SOCOTEC

PROPOSED FIRE STRATEGY

WELFARE BLOCK FLOOR PLAN

SCALE	DRAWN	REVIEWED	CREATED
1:50@A3	JW	AK	05/06/25

PROJECT NO	DRAWING NO	REVISION
TX 166083	10103	2

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