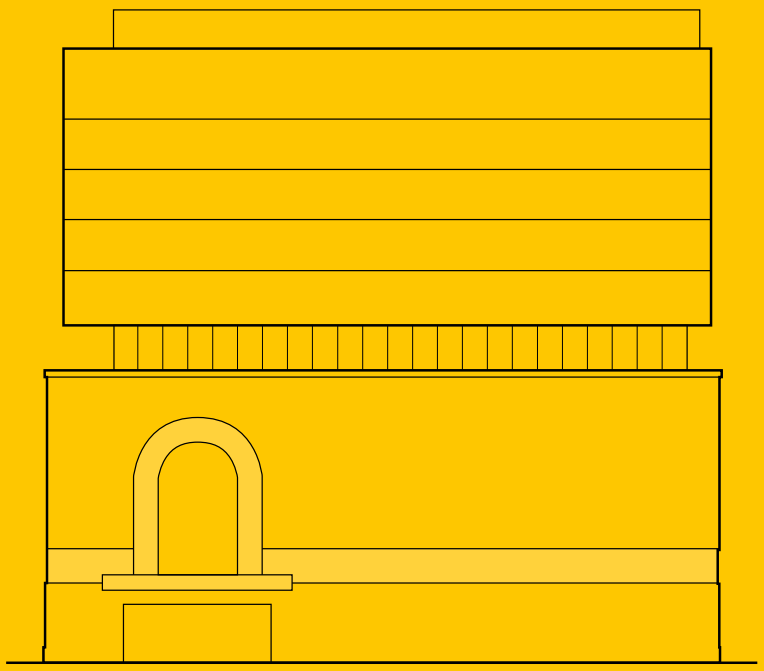

SAVILLE THEATRE

135 SHAFTESBURY AVENUE

London Plan Fire Statement

OFR Consultants Ltd

Saville Theatre, Shaftesbury Avenue

1 INTRODUCTION

1.1 Background and Document Purpose

OFR Consultants have been instructed by Yoo Capital to provide fire consulting services for the redevelopment of the Saville Theatre on Shaftesbury Avenue, London.

Saville Theatre is an existing grade II listed building undergoing extensive development, including demolition and building work. The proposed redevelopment aims to remove the structure and internals of the existing building whilst retaining the components of the existing façade. The retained facades will span from ground level to level 5. An additional 6 accommodation levels will be added on top of this, and 4 basement levels will also be provided. As a result, the final structure will consist of 11 storeys (ground plus 10), with 4 basement levels. The highest occupied level will reach a height of 31.6m above the Fire Service (London Fire Brigade, LFB) access level, which is the at Ground Floor.

The Proposed Development would become the first UK-based permanent home of Cirque du Soleil. At upper levels, the affordable luxury boutique hotel would be operated by citizenM.

The project is located within the London Borough of Camden and is therefore subject to the London Plan 2021 [1]; which is the statutory Spatial Development Strategy for Greater London prepared by the Mayor of London ("the Mayor") in accordance with the Greater London Authority Act 1999 (as amended) and associated regulations.

The London Plan was published in March 2021. The London Plan is part of the statutory spatial development strategy for London, meaning that the policies in the plan should inform decisions on planning applications across London. In support of the London Plan, the Greater London Authority (GLA) have published draft guidance documents outlining the details required to adhere to Policies D5 and D12 of the London Plan 2021. Three draft guidance documents have been released under the reference, 'Draft Fire Safety Guidance (pre-consultation, for information)', these can be referred to for specific guidance on these points as listed below:

- London Plan Guidance – Fire Safety Policy D12(A)
- Greater London Authority, London Plan Guidance Sheet, Policy D12(B)
- Greater London Authority, London Plan Guidance Sheet, Policy D5(B5)

Subsequently, in February 2022, a draft guidance document was released known as 'the Fire Safety London Plan Guidance (Fire Safety LPG)' which was made available for public consultation. This is the most recent guidance document on the London Plan 2021 and forms the basis upon which this Fire Statement has been prepared.

This Fire Statement aims to demonstrate that the relevant fire safety aspects of the design to date, and the approach that OFR Consultants (OFR) will adopt with regards to compliance with the Building Regulations, are appropriate.

The Fire Statement does not constitute the detailed Fire Strategy that already exists. The Fire Strategy represents the level of detail of the design in accordance with the RIBA Stages and will be concluded prior to construction at RIBA Stage 5. The Fire Strategy demonstrates compliance with Part B of The Building Regulations 2010 (Schedule 1). This statement has been prepared with reference to the level of design development undertaken at the date of submission. The level of detail is commensurate to the recommendations made by the RIBA Plan of Work 2020, for submission of a planning application.

1.2 Competency and Quality Assurance Record

The London Plan Policy D12 notes that the fire statement should be produced by someone who is third-party and suitably qualified. This should be a qualified engineer with relevant experience in fire safety, such as a chartered engineer registered with the Engineering Council by the Institution of Fire Engineers. In line with Policy D12 of the London Plan, a suitably qualified Chartered Engineer, Stewart Dabin, has been involved in the production of this document.

The fire engineering design team responsible for the production of this document is shown below. The table below also demonstrates OFR's 3 tier quality assurance process.

Author	Reviewer	Approver
Lydia Booth. MEng(Hons), DIS, AIFireE	Matt Stallwood. BSc Eng(Hons), AIFireE	Stewart Dabin BEng CEng MIFireE

2 FIRE STATEMENT LAYOUT

Per the Fire Safety of London Plan Guidance, the fire statement should set out the following:

- How the proposed fire safety measures meet the requirements of London Plan Policy D12B (parts 1-6);
- How the evacuation of mobility impaired people (MIP) has been incorporated into the development (where required in line with London Plan Policy D5(B5));
- How the development meets the minimum fire safety regulations and standards;
- What additional fire safety measures are to be included beyond the minimum requirements of the Building Regulations; and

In addressing the above, the fire statement is laid out in sections that directly pertain to the requirements of the London Plan Policy D12B. Table 1 details the London Plan requirements and provides reference to where detail on each point can be found.

Since the Proposed Development will not contain any dwellings, it is not classified as a 'Relevant Building' as defined by The Building Regulations 2010, and therefore, the preparation of a separate Fire Statement under Gateway Planning One is not applicable.

Table 1: The London Plan requirements

Policy D12(B)	Reference
1) the building's construction: methods, products and materials used, including manufacturers' details	The limitations of materials to be used, and fire ratings which shall be achieved, are detailed in Section 6 The manufacturers details are not yet known and will be decided in due course.
2) the means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach	Detailed in Section 7
3) features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans	Detailed in Section 8 Management and maintenance plans are beyond the scope of a fire strategy.
4) access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these	Detailed in section 9 Management and maintenance plans are beyond the scope of a fire strategy.
5) how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building	Detailed in Section 9.1
6) ensuring that any potential future modifications to the building will take into account and not	Detailed in Section 10

Policy D12(B)	Reference
compromise the base build fire safety/protection measures.	
Policy D5(B5)	
1) be designed to incorporate safe and dignified emergency evacuation for all building users. In all developments where lifts are installed, as a minimum at least one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building.	Detailed in Section 7.6

3 BUILDING DESCRIPTION

Saville Theatre is an existing building located on Shaftesbury Avenue and bounded by New Compton Street, Stacey Street, and St Giles Passage. It is proposed the building undergo an extensive development, including demolition and building work. The intention of these works is to create a permanent residency for a theatre company as well as creating hotel accommodation above the theatre. For practical reasons the hotel and theatre share the space of ground floor but have separate entrances. Apart from the ground floor it is intended that the theatre and hotel are separated within the building. The development also includes new facilities such as a restaurant for the theatre, food and beverage area for the hotel and front of house provisions.

The existing structure comprises of a 4 screen cinema. The intent of the redevelopment is to partly demolition, restoration and refurbishment of the existing Grade II listed building, roof extension, and excavation of basement space, to provide a theatre at lower levels, with ancillary restaurant / bar space (Sui Generis) at ground floor level; and hotel (Class C1) at upper levels; provision of ancillary cycle parking, servicing and rooftop plant, and other associated works The existing and proposed developments are shown in Figure 2 and Figure 2 respectively.

The proposed redevelopment aims to remove the structure and internals of the existing building whilst retaining the historic facades of the existing building, as highlighted in . The existing facades include a stone construction on the lower portion with a decorative frieze, above which is brickwork.

The theatre will initially be designed as a shell and core and the internal layouts will be detailed with the tenant at a later stage. Indicative internal plans of the theatre have however been provided to give a representation of potential layouts. These will be considered as part of the fire strategy and will be further co-ordinated as the design progresses.

The building will have a height of ~31.9 m from the lowest part of the ground floor level to the highest occupied floor. The basement will have a depth of ~17.3 m. This is shown in Figure 3.

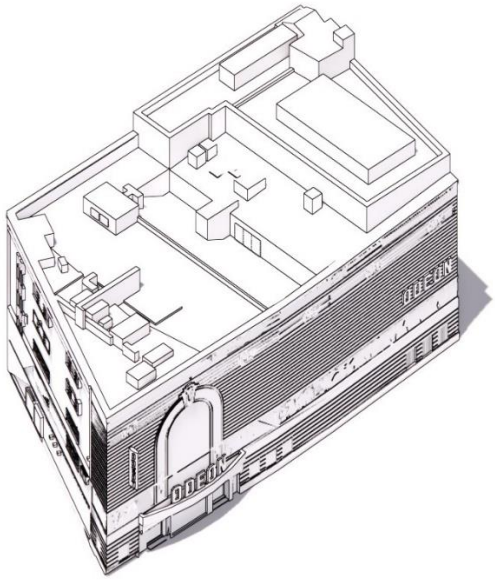

Figure 1: 3D Visual of the existing Saville Theatre (Source Images from Cityscape)

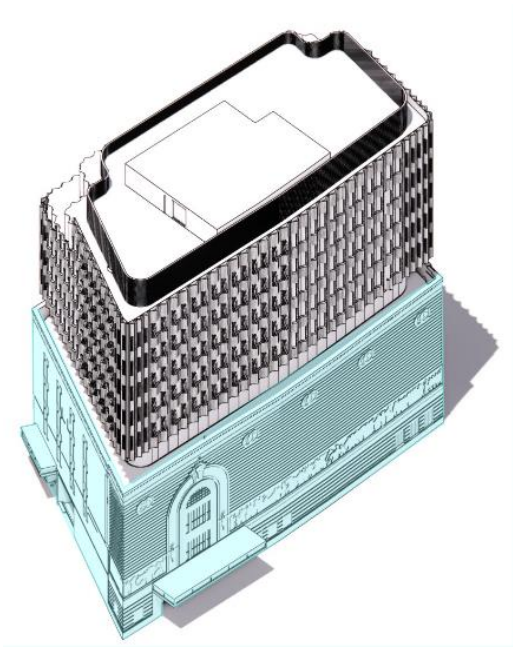

Figure 2:The proposed redevelopment, Retained facades for the Saville Theatre, highlighted light blue. (Source Images from Cityscape)

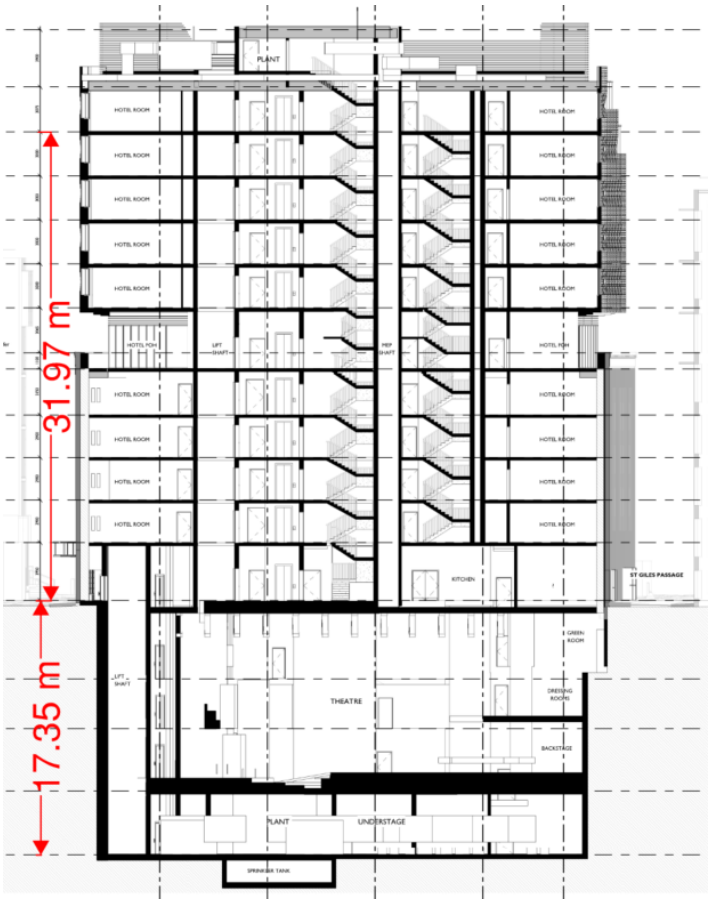

Figure 3 Long section through the Saville Theatre redevelopment showing the height from fire service access level (ground)to the top occupied storey and depth of Basement 4.

A summary of the proposed accommodation at each level at the redevelopment of Saville Theatre is provided on Table 2.

Table 2: Summary of accommodation at each level

Level	Theatre Accommodation	Hotel Accommodation
Basement 4	Plant, Theatre BOH	-
Basement 3	Auditorium, Backstage, Kitchen	-
Basement 2	Auditorium, Dressing rooms, Kitchen	-
Basement 1	Auditorium, Theatre kitchen, Plant, Green room, Offices	-
Ground Floor	Theatre front of house, Foyer, Plant, Ancillary Spaces	Hotel entrance, Plant, Ancillary Spaces
Level 1	-	Hotel bedrooms, Staff break out space, Ancillary Spaces
Level 2-3	-	Hotel bedrooms, Plant

Level 4	-	Hotel bedrooms, Staff back of house
Level 5	-	Hotel check in, Room key store, Pantry
Level 6-10	-	Hotel bedrooms
Level 11	-	Roof plant (enclosed and open to air)

3.1 Building categorisation

As the hotel and theatre have been designed in line with separate design guidance they are categorised differently. The categorisation of a building impacts the fire strategy recommendations.

The theatre portion of the building has been designed in line with BS 9999 [2] and therefore the respective areas of this part of the building have been provided with a 'risk profile'.

Similarly, the respective areas of the hotel part of the building have been provided with a 'purpose group', per Approved Document B [3].

3.1.1 Risk profile

In accordance with BS 9999 [2], a risk profile is given as a combination of occupancy characteristic and fire growth rate. This risk profile will be used to determine the minimum fire safety recommendations for several aspects of the fire safety design of the building. A separate risk profile has been proposed for the storage areas, kitchen, bin room and plant areas due to their higher fire risk. As per BS 9999 [2], the provision of a sprinkler system within the building can restrict fire growth, limit fire spread, heat and smoke generation. As the building will be provided with a sprinkler system, designed to BS EN 12845 [4], the fire growth rate has been reduced for each area.

The relevant risk profiles for the theatre portion of the building are listed in Table 3.

To note, the occupancy characteristic for the theatre portion of the building is B – occupants who are awake and unfamiliar with the building. While this theatre is intended as a permanent venue for a theatre company, meaning there is a high chance that performers and crew will be familiar with the building, to futureproof the building for the potential use of this theatre for touring shows who will not be familiar with the building, an occupancy characteristic of B has been selected, including the back of house areas.

Table 3: Risk profiles

Occupancy	Risk Profile
Theatre (including auditorium and back of house areas)	B2
Plant, Storage areas, Kitchen, Bin room	A2

3.1.2 Purpose group

The applicable purpose group for the hotel portion of the building is 2(b) – Residential (other), reflecting guests in hotel rooms. The building contains sleeping risk at levels 1 to level 10.

3.2 Design Occupancy Numbers

Table 4 outlines the basis for which the occupant loads in the theatre have been calculated and Table 5 outlines the basis for which the occupant loads in the hotel have been calculated.

Where furniture layouts are known the occupancy is based on the number of seats. Otherwise, floors space factors have been applied.

Toilets, corridors and storage areas have not had an occupancy assigned as they are considered to be transient areas whose occupancy has been accounted for elsewhere.

Should the expected occupant demand exceed the proposed capacity as the design progresses, the design will be updated accordingly to allow for the increased numbers. The fire strategy will provide adequate evidence demonstrating compliance with The Building Regulations. This will be reviewed and approved by the Building Control.

Table 4: Floor space factors used to determine the occupant load in the theatre

Space	Floor Space Factor
Theatre foyer/restaurant	1 m^2/person
Auditorium/Dressing room/ Green room	number of seats
Kitchen	7 m^2/person
Control room/backstage	6 m^2/person
Plant Rooms	30 m^2/person
Bar (staff side)	7 m^2/person

Table 5: Floor space factors used to determine the occupant load in the hotel

Space	Floor Space Factor
Dining spaces/living room/Check in	2 m^2/person
Hotel bedrooms	2 persons per bedroom
Hotel back of house	6 m^2/person
Plant Rooms/stores	30 m^2/person

The building will be occupied by theatre visitors, members of the public using the hotel as well as staff for both premises.

4 Design Approach and Methodology

The fire safety design for the redevelopment will seek to satisfy the functional requirements of Part B of Schedule 1 to the Building Regulations 2010 (as amended) [5]. The fire safety strategy will be developed with cognisance of the Construction Design and Management Regulations 2015 [6] (CDM) and will also form part of the information pack handed over to the building operators under Regulation 38 to assist the responsible person(s) in meeting the operational fire safety requirements of the Regulatory Reform (Fire Safety) Order 2005 (RRO) [7]. The design is currently at RIBA Stage 2 and will be further developed through the following design stages, whereby the fire strategy will be updated to reflect design development whilst aligning with the principles presented in this Fire Statement.

4.1 Relevant Stakeholders

The key stakeholders for the project are as follows:

- Client – Yoo Capital.
- Project Manager – Opera
- Architect – Spparc
- Fire Engineers – OFR Consultants
- Structural Engineers – Pell Frishmann
- MEP Engineers – Hoare Lea
- Planning Consultant – Montagu-Evans
- Building Control Body – TBC
- Local Fire and Rescue Service – London Fire Brigade

4.2 Basis of Design

For the theatre portion of the building, the fire safety guidance in BS 9999:2017 *Fire safety in the design, management, and use of buildings – Code of practice* [2] has been adopted as the basis of the fire strategy. Where necessary this is supplemented by documents referenced therein.

For the hotel portion of the building, the fire safety guidance in Approved Document B (AD B) 2019 edition, including amendments [3], has been used as the principal basis for the fire safety strategy. Where necessary this is supplemented by documents referenced therein.

Where strict adherence to the aforementioned fire guidance would conflict with the wider aspiration of the Proposed Development, fire engineering principles shall be employed to support alternative performance-based solutions. These alternative solutions are to be documented in accordance with the fire safety engineering principles detailed in PD 7974:2019 – 'Application of fire safety engineering principles to the design of buildings' [8]. Where not specifically stated, fire safety provisions will be specified and installed according to the current edition of relevant published guidance, at the time construction has started on site. All fire precautions are determined on the basis of there being a single worst-case scenario fire, not multiple seats, nor a catastrophic event. Therefore, the design does not account for malicious activities such as arson. This assumption aligns with the guidance of BS 9999:2017 [2], AD B: 2019 (including amendments) [3] and BS 7974:2019 [8].

Upon building completion, the building owners and/or managers (including tenants), will need to undertake Fire Risk Assessments (FRA) and have these available for inspection by the Fire and Rescue Service (i.e., the London Fire Brigade) at any time. A fire risk assessment shall be undertaken by a competent person on an annual basis or when there are changes in the building or management strategy that may warrant such risk

assessments, to ensure that the fire strategy is upheld throughout the life span of the building and that the risk of fire is kept suitably low. The fire strategy will highlight items and issues that need to be considered specifically as part of any fire risk assessments for this building.

4.3 Regulatory Approvals and Consultation

As part of the Regulatory Approvals process, the detailed fire strategy information and specification will be subject of milestone reviews and regular meetings which will be held with representatives from the appointed Building Control Body, who shall in turn lead the engagement with the London Fire Brigade. The advice and feedback from these authorities will therefore be considered in the building design and the fire strategy being developed in support of the Building Regulations application.

5 Reference Information

This report is based on the architectural drawings produced by SPPARC and are listed in Table 6

Table 6 Reference Information

Reference	Title	Revision	Date
2111-SPP-ST-B4-DR-A-20-1000	Proposed Level B4 Floor Plan	P0.03	26/01/2024
2111-SPP-ST-B3-DR-A-20-1001	Proposed Level B3 Floor Plan- Auditorium Layout	P0.01	26/01/2024
2111-SPP-ST-B2-DR-A-20-1002	Proposed Level B2 Floor Plan- Auditorium Layout	P0.01	26/01/2024
2111-SPP-ST-B1-DR-A-20-1003	Proposed Level B1 Floor Plan- Auditorium Layout	P0.01	26/01/2024
2111-SPP-ST-0G-DR-A-20-1004	Proposed Level 0G Floor Plan	P0.03	26/01/2024
2111-SPP-ST-01-DR-A-20-1005	Proposed Level 01 Floor Plan	P0.03	26/01/2024
2111-SPP-ST-02-DR-A-20-1006	Proposed Level 02 Floor Plan	P0.03	26/01/2024
2111-SPP-ST-03-DR-A-20-1007	Proposed Level 03 Floor Plan	P0.03	26/01/2024
2111-SPP-ST-04-DR-A-20-1008	Proposed Level 04 Floor Plan	P0.03	26/01/2024
2111-SPP-ST-05-DR-A-20-1009	Proposed Level 05 Floor Plan	P0.03	26/01/2024
2111-SPP-ST-06-DR-A-20-1010	Proposed Level 06-08 Floor Plan	P0.03	26/01/2024
2111-SPP-ST-09-DR-A-20-1013	Proposed Level 09 Floor Plan	P0.03	26/01/2024
2111-SPP-ST-10-DR-A-20-1014	Proposed Level 10 Floor Plan	P0.02	26/01/2024
2111-SPP-ST-11-DR-A-20-1015	Proposed Level 11 Roof Plant	P0.03	26/01/2024
2111-SPP-ST-12-DR-A-20-1016	Proposed Level 0R Roof Plan	P0.02	10/11/2023
2111-SPP-ST-ZZ-DR-A-00-0001	Proposed Location & Site Plan	P0.02	08/01/2024
2111-SPP-ST-ZZ-DR-A-26-2001	Proposed Section 1	P0.03	26/01/2024
2111-SPP-ST-ZZ-DR-A-26-2002	Proposed Section 2	P0.03	26/01/2024

6 BUILDING CONSTRUCTION

The structure of the existing building is to be removed and a new structure built as part of the works. The main structure of the building will be non-combustible and will achieve a structural fire-resistance rating of 120-minute, based on a building with a height exceeding 30m, the recommendations from both BS 9999:2017 [2] and the associated risk profiles, and Table B4 of AD B [3] for a building with purpose group 2b: Residential (other).

While the structure and internals of the building are to be removed, the historical important sections of the facade will be retained. The existing facades include a stone construction on the lower portion with a decorative frieze, above which is brickwork.

As it contains hotel accommodation, the redevelopment falls under the category of a 'relevant building' as defined in Regulation 7(4), and therefore falls within the scope of Regulation 7(2) (of the Building Regulations [5]) i.e. a building with a storey (not including roof-top plant areas or any storey consisting exclusively of plant rooms) at least 18m above ground level and which (i) contains one or more dwellings; (ii) contains an institution; or (iii) contains a room for residential purposes (including any room in a hostel, hotel, or boarding house). All materials which become part of an external wall or specified attachment will therefore achieve class A2-s1, d0 or class A1 in accordance with BS EN 13501-1:2018 [9, p. 1] (other than those exempted by regulation 7(3)).

7 MEANS OF WARNING AND ESCAPE

As part of the Fire Strategy a more detailed assessment of the means of escape provisions has been undertaken, which will be updated as the design progresses and in cognisance with Regulatory Approvals. Presented below is a high-level summary of these provisions at the current stage of the design.

7.1 Evacuation Strategy

A simultaneous evacuation strategy will be adopted for the Saville Theatre and the hotel respectively. The alarm systems for the theatre and hotel will be linked. To prevent the whole building evacuating at once, a notification from the hotel or theatre will be issued to the other in the event of a fire. A management procedure will be put in place to ascertain whether the entire building needs to be evacuated. This is supported by a high level of compartmentation between the two building occupiers and separate escapes.

To mitigate against false alarms and owing to the large numbers of the public in the building, a staff alarm will be implemented in the design of the system. In the event of an automatic fire detector activating, a period is given to allow staff in the premises to investigate prior to evacuation/summoning of the fire and rescue service.

7.2 Horizontal Egress

7.2.1 General

All areas will be provided with sufficient exits and escape routes to achieve the minimum required exit widths and travel distances in accordance with BS 9999:2017[2] (for the theatre portion of the building) and Approved Document B: 2019 inc amendments [3] (for the theatre portion of the building). In all instances this will be submitted to building control for approval ensuring these parameters meet the functional requirements of The Building Regulations.

Full occupant capacity calculations will be provided in the Fire Strategy, which consider the exit capacities of each of the floorplates.

Doors will always be hung to open in the direction of escape if more than 60 people might be expected to use it during a fire.

7.2.2 Theatre

The travel distances in the theatre portion of the redeveloped building will be limited in accordance with the recommendations in BS 9999:2017 [2]. The travel distance limits given within BS 9999:2017 [2] are outlined in Table 7.

The minimum escape widths (in mm/person) used in the exit capacity calculations from the theatre are taken from BS 9999:2017 [2]and are also given in Table 7.

Table 7: Theatre horizontal egress design parameters

Risk Profile	Location	Maximum travel distance (m)[1]		Exit width per person
		Single direction	Multi-direction	
B2	Areas with seating in rows	15 m	32 m	3.485 mm
	All other areas	15 m[2]	37.5 m[2]	
A2	Plant/Storage areas/Kitchen/ Bin room	22 m	55 m	3.06 mm
[1] Where the internal layouts are unknown, the travel distances should be limited to 2/3 of the values stated in the table. [2] To account for alcohol consumption a 25% reduction in the travel distances has been applied				

The recommendations for means of escape in theatres given in Annex D of BS 9999 [2] and The Green Book Guide for places of entertainment (REF) will also be considered in the design.

The theatre portion of the building has a high occupant load. Egress checks and calculations have been assessed in detail within the Fire Strategy report.

7.2.3 Hotel

The travel distances in the hotel portion of the redeveloped building will in most instances align with the recommendations in AD B [3]. The travel distance limits given within are outlined in Table 8.

The egress widths will be determined in accordance with Table 2.3 of AD B [3].

Table 8: Maximum travel distances for the hotel.

Location	Maximum travel distance (m)*	
	Single Direction	Multi Direction
Bedrooms	9 m	18 m
Bedroom corridors	9 m	35 m
Plant (within the plant room)	9 m	35 m
Rooftop Plant	60 m	100m
Place of special fire hazard	9 m	18 m
*Where the internal layouts are unknown, the travel distances should be limited to 2/3 of the values stated in the table.		

The hotel portion of the building has a high occupant load. Egress checks and calculations have been assessed in detail within the Fire Strategy report.

7.3 Theatre

Within the theatre, the nature of the tiered seating around the stage means there are a series of voids spanning from Level B3-Level B1. These voids are located predominantly in the center of the building.

The key fire strategy requirements for the theatre will be as follows. These elements are covered in more detail in the Fire Strategy report and will be developed further as the design progresses.

- All stairs to be sized for simultaneous evacuation;
- Sprinklers are provided throughout the building;
- An enhanced category L2 fire detection and alarm system is proposed for the theatre;
- A mechanical smoke ventilation system is required for basement ventilation purposes and will achieve a minimum of 10 air changes per hour. The design of this system will be co-ordinated with the design team as the design progresses.
- Ancillary spaces, such as dressing rooms and kitchens, have been separated from the auditorium by fire rated construction, in line with table 29 and Annex D of BS 9999 [2].

7.4 Vertical Egress

The building has three stairs, which are shown in Figure 4, Figure 5 and Figure 6:

- Stair 1: This 1200 mm wide escape stair travelling from Level 0G down to the basement Level B4. It is used by occupants of the theatre portion of the building only. The stair discharges on level 0G. This stair is also a firefighting stair and forms part of the firefighting shaft serving the theatre.
- Stair 2: This stair serves both the hotel and theatre portion of the building. This stair is only an escape stair and serves the theatre similar to stair 1. The stair has a width of 1200mm.
- Stair 3: This is a 1200mm wide escape stair serving Level 09 to Level 0G where it discharges. On upper floors it is used by occupants of the hotel portion of the building only. This stair is also a firefighting stair and forms part of the firefighting shaft serving the hotel.
- Stair 4: This is also a 1200 mm wide escape stair only serving level 09 to level 0G. The stair rises in the centre of the building from level 02 to level 09. On level 2 it transfers to the south east corner where it extends to ground floor and discharges.

The stair capacities for the Saville Theatre are detailed in the fire strategy and will be sufficient for the expected occupancy.

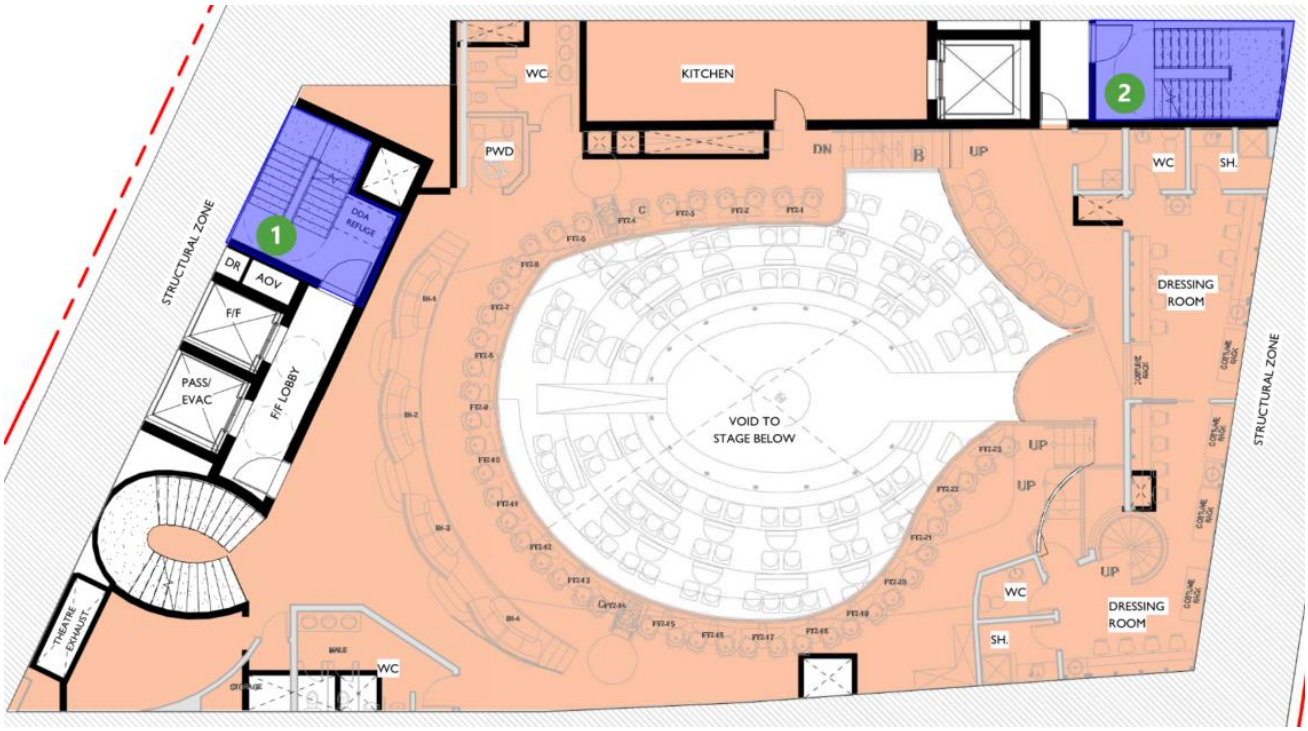

Figure 4: Theatre stair locations on a typical floor and assigned numbers. (The internal layout is only a representation and subject to change)

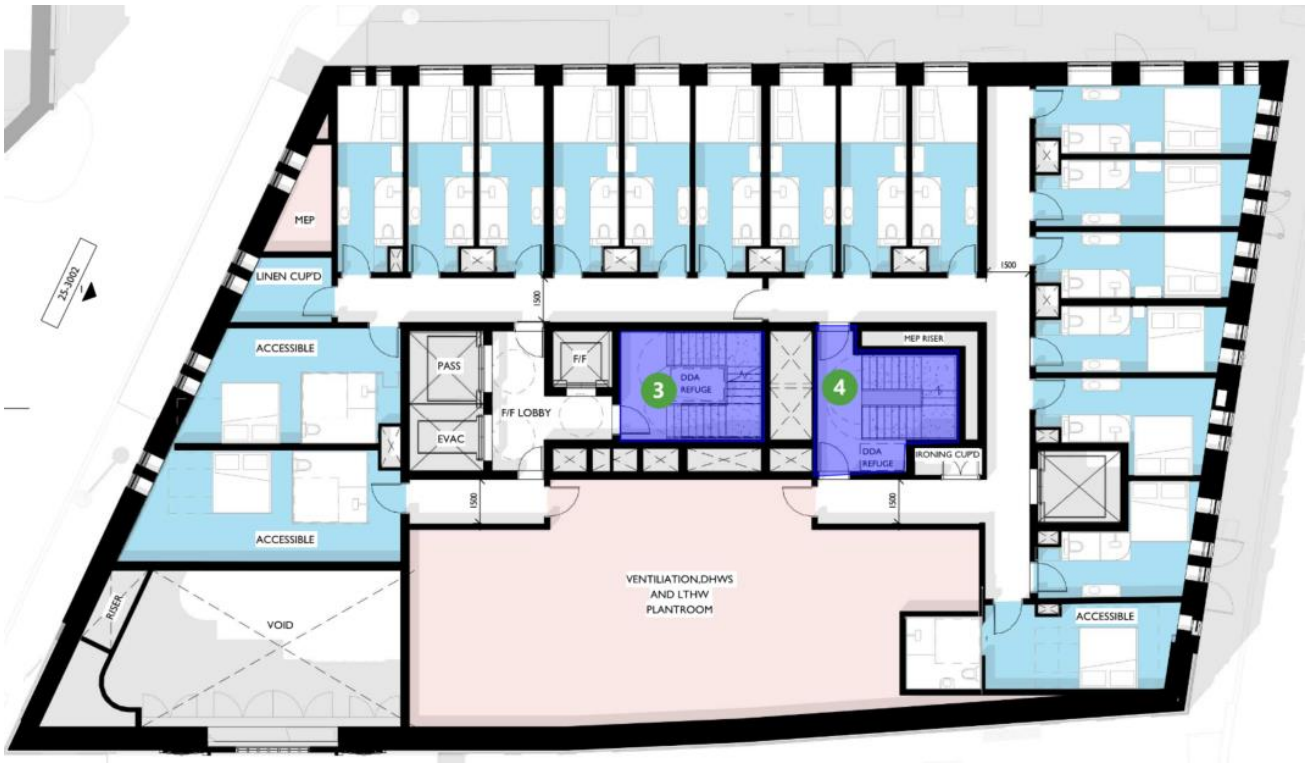

Figure 5: Hotel stair locations on a typical upper floor and assigned numbers

Figure 6: Level 01. Stair 4 moves from centre of the building to the South-East corner

7.5 Final Exit Routes from Escape Stairs

All the stairs that serve the upper storeys of the redeveloped building, as well as the basement will discharge to the outside at ground via protected corridors, as shown on Figure 7. These corridors are referred to as the final exit routes. All doors leading to the final exits in these corridors shall be at least as wide as the preceding stair, and where these provide a route to a fire-fighting stair, they will be 500 mm wider than what is required for means of escape.

Figure 7 Final Exits at Ground Floor

7.6 Escape for Mobility Impaired People (MIP)

7.6.1 General

As the design evolves, the building operator will play an integral role in the formulation of the fire strategy, which is being developed such that all mobility-impaired persons (MIP) can be evacuated from the premises as part of the building's emergency and evacuation procedures, without placing reliance on the fire service or emergency services.

It should be noted that under the Regulatory Reform (Fire Safety) Order 2005 [7], it is the duty of the responsible person along with their appointed safety managers to ensure assistance to everyone to a place of ultimate safety outside the building in the event of an emergency.

Disabled refuges measuring 1400 mm x 900 mm will be provided on all levels where the presence of MIP is anticipated, thereby enabling occupants with impaired mobility to assemble in a place of relative safety while waiting to get assistance. It is important to emphasize that this provision dose not encompass level 11 where the floorspace areas are primarily intended for the housing of plant and maintenance rooms. Therefore occupants will only occupy this floor after conducting a risk assessment whereby suitable means of escape shall be achieved.

Refuges shall be located such that they do not impede the movement of occupants onto stairways or escape routes. It is proposed to locate refuges within the stairs or stair lobbies. All refuge points will be provided with

two-way emergency voice communication (EVC) devices. These shall provide a link between the refuge and the relevant control panels and shall conform to BS 5839-9:2021 [10]. Any disabled member of staff will have a Personal Emergency Evacuation Plan (PEEP) and the procedures are to be practiced. A Generic Emergency Evacuation Plan (GEEP) will need to be written for visitors who would need assistance to escape.

7.6.2 Evacuation Lifts

As shown on Figure 8 and Figure 9 the building is to be provided with one evacuation lift in the theatre portion of the building (Figure 8) and one evacuation lift in the hotel portion of the building (Figure 9). Both evacuation lifts will be located within a firefighting shaft, separate to the firefighting lift and will open into the firefighting lobby. At discharge, a ground floor route directly from the evacuation lifts to outside will be provided via a protected corridor.

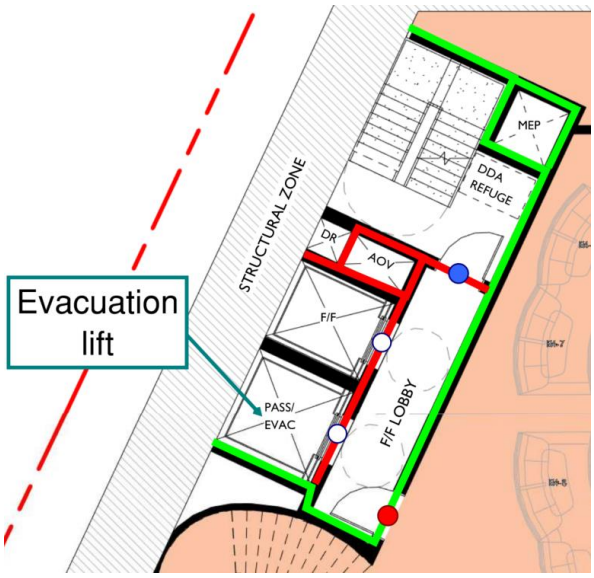

Figure 8: Location of Evacuation Lift in theatre portion of the building

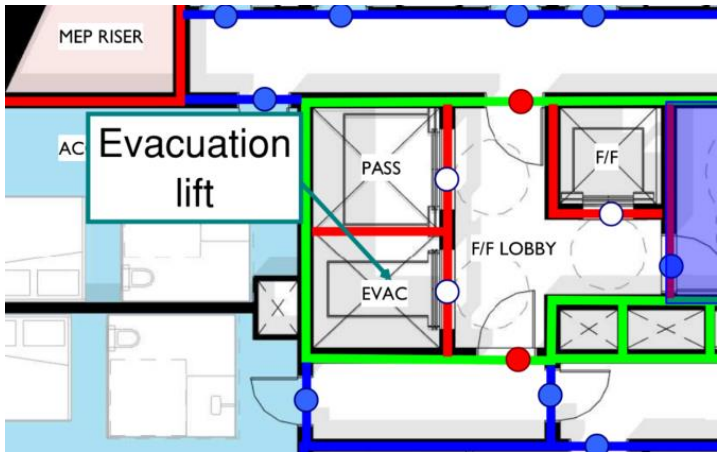

Figure 9: Location of Evacuation Lift in hotel portion of the building

Based on the above, the number of evacuation lifts / evacuation provisions is deemed appropriate from a life safety perspective, in providing means for management to assist in the evacuation of MIP.

The evacuation lifts will enable occupants of the MIP across all levels, whether above or below ground, where their movement is expected, to exit via an evacuation lift to a secure area on the ground floor. This designated ground floor route should offer a level path for MIP occupants to safely reach the building's final exits.

7.6.3 Evacuation Lift Evacuation Strategy

As part of the provision to include evacuation lift within a building, the London Plan Guidance sets out the expectation to have a supporting evacuation lift evacuation strategy.

This strategy should set out the proposed measures which are needed to support the evacuation of the development via these lifts.

The evacuation lift will be designed and installed in line with the recommendations of BS 9999:2017 [2] (in particular, the guidance in Annex G), which references the provisions of standards BS EN 81-20:2020 [11] and BS EN 81-70:2021 inc amendments [12]. This includes the provision of a secondary power supply to these lifts.

The lift shaft enclosures will be designed as shafts that achieve at least 60 minutes fire resistance as they are contained within the building's firefighting shafts. Once within the protected lift shaft, the route all the way to the outside will maintain the same level of protection as afforded to the firefighting shaft enclosure (120 minutes fire resistance).

Upon a confirmed fire alarm, MIP will follow emergency signs and direct to a refuge area, to call for assistance. Emergency communication points from the refuges will connect to a master station where trained staff will coordinate their assisted evacuation using the evacuation lift. This system will be in accordance with BS5839-9[10].

Additionally, there will be step-free protected routes at ground level extending from all evacuation lifts, ensuring that MIP can safely exit the building after receiving assistance through the use of the evacuation lift.

7.6.4 Evacuation Lift Management Plan

Separately to the expectations for the evacuation lift evacuation strategy, the London Plan Guidance also sets out the expectation to have a supporting evacuation lift management plan where a building includes evacuation lift.

As the design progresses a management plan will be developed, and finalised prior to building occupation, which is to cover management of the evacuation lift, setting out the detail on how the evacuation lift will be operated in an emergency, the staff training required and the detail on ongoing maintenance of the evacuation lift.

Staff training is to include training staff to coordinate the evacuation from a master station, and training staff to operate each of the evacuation lift. Additionally, fire marshals are to be provided, and the management plan is to cover the process to assign them and their training.

This will include for any disabled member of staff that will need to have a Personal Emergency Evacuation Plan (PEEP), and the relevant associated procedures.

The lift management plan is to detail maintenance / testing of the evacuation lift. As outlined in BS 9999:2017 [2], there is an expectation that evacuation (and firefighting) lifts be tested on weekly, monthly, and annual periods, as follows – this will need to be undertaken by management within the building on occupation, and the associated procedures are to be captured within the management plan.

8 PASSIVE AND ACTIVE FIRE SAFETY MEASURES

Within the proposed redevelopment, a combination of passive and active fire safety systems will be integrated to uphold and facilitate the life safety goals that have been established in collaboration with project stakeholders and are required to comply with Building Regulations.

Passive and active fire protection measures within the development, such as compartmentation, mechanical smoke control systems and sprinklers, will support the proposed evacuation strategy and the overall fire safety strategy of the building.

8.1 Active fire safety systems

8.1.1 Detection and alarm systems

8.1.1.1 Theatre

BS 9999 [2] advocates that a building with a risk profile of B2 should be provided with a category M (manual) fire alarm system, as a minimum. However, an automatic fire alarm and detection system to an L2 classification is proposed for the building due to the occupancy level, and the large voids created by the auditorium and stairs that pass-through compartment floors.

8.1.1.2 Hotel

AD B [3] recommends that an automatic fire detection and alarm system be provided in a hotel type building. BS 5839-1 [13] further recommends that a hotel be provided with an L1/L2 category fire detection and alarm system. An L1 fire detection and alarm system will therefore be provided for the hotel portion of the building.

8.1.1.3 General

Manual call points will be located by all the escape stairs, final exits and entrances to protected escape routes.

Suitable visual alarms and sounders will be provided on the roof areas, toilets and any other areas where noise is expected to exceed 90 dBA, in accordance with BS 5839-1:2017 [13].

The fire alarm panel will be provided at an entrance to the building, in a location easily accessible by the Fire & Rescue Service.

8.1.2 Emergency voice communication systems

All refuges are to be provided with emergency voice communication (EVC) systems which will communicate each refuge with the management/security positions. This system will conform to BS 5839-9:2011 [10].

8.1.3 Evacuation lifts

Evacuation lift will be provided as noted in Section 7.6.

8.1.4 Automatic water fire suppression system

A sprinkler system is proposed to be installed throughout the entirety of the building including the hotel and the basement areas (theatre and plant). This will be a BS EN 12845:2015+A1:2019 [4] commercial sprinkler system incorporating enhancements in accordance with Annex F of that document. The sprinkler system is to satisfy the requirements of an OH4 category system, for the theatre at basement level and an OH3 classification for the remainder of the building.

8.1.5 Smoke control and ventilation systems

The redevelopment will be served by the following smoke ventilation systems:

- Smoke extract from firefighting lobbies (this will either be a natural or mechanical system)
- Automatic openable vents at the head of firefighting stairs

- Mechanical smoke clearance from the basement theatre achieving 10 air changes per hour. The system will activate automatically upon the activation of either the sprinkler system or the fire detection system
- Where refuse stores are accessed internally from the building, they will be accessed via lobbies with permanent ventilation or suitable mechanical alternative.

8.1.6 Emergency Lighting and Signage

An emergency lighting system will be installed in accordance with BS 5266-1:2016 [14] and BS EN 1838:2013 [15]. Escape signage and other fire safety signage will be provided in accordance with recommendations of BS 5499-4:2013 [16], BS 5499-10:2014 [17], and BS ISO 3864-1:2011 [18].

8.1.7 Emergency Power Supplies

Emergency power supplies are to be provided in line with BS 8519: 2020 [19] for all active fire safety systems, including the following:

- Fire detection and alarm systems;
- Emergency signage and lighting;
- Sprinkler pumps;
- Firefighting lifts;
- Evacuation lifts;
- Firefighting shafts (Associated equipment and normal lighting);
- Firefighting intercommunications installations;
- Smoke control system (including motorised dampers) and;
- Fire curtains.

8.1.8 Fire and Smoke Curtains

To prevent the spread of smoke, lifts passing through compartment floors should be situated in protected lobbies. Where this is not possible, fire and smoke curtains compliant with BS 8524-1:2013 [20] and BS 8524-2:2013 [21] shall be used at lift entrances.

8.1.9 Maintenance

All fire safety systems will be inspected and maintained based on maintenance recommendations in BS 9999:2017 [2] and the relevant system-specific standards, which is to be covered by the management plan for the building

8.2 Passive fire safety systems

8.2.1 Structural Fire Resistance

The building will be provided with a minimum structural fire-resistance rating of 120-minute, based on a building with a height exceeding 30m, the recommendations from both BS 9999:2017 [2] and the associated risk profiles, and Table B4 of AD B [3] for a building with purpose group 2b: Residential (other).

8.2.2 Compartmentation

The intention of providing fire compartmentation is to inhibit the potential for fire and smoke to spread throughout entire buildings. Compartment floor is important to protect occupants who might have to pass the fire storey during evacuation and to protect the firefighters who might have to work above or below the floor of fire origin. Additionally, compartment floors are required to lower the risk of external fire spread between buildings to an acceptable level and to limit the extent of damage which contributes to business continuity

and post-fire recovery. As the building height exceeds 30m, compartment floors will be provided. As per guidance these will have a fire resistance of 120 minutes.

For the theatre at basement levels, as the basement depth is less than 10m below ground, compartment floors will be provided. However, it is noted that due to the nature of a theatre whereby the seating is tiered, a void between the floors exists.

Within the Saville Theatre, internal fire spread will be restricted by compartmentation. The strategy for which will be in accordance with BS 9999:2017 [2] for the theatre areas and AD B [3] for the hotel areas, where fire resistance values are provided for the following criteria: R – Loadbearing Capacity, E – Integrity and I – Insulation. Table 9 summarises the minimum fire-resistant construction and fire door requirements for areas of the building which shall achieve a fire resistance rating. Where there is a common wall between two enclosures serving different purposes, the more onerous rating shall be adopted. The suffix S corresponds to the provision of smoke seals in fire doors.

Table 9: Summary of the minimum fire-resistant construction and fire door requirements

Area		Period of fire resisting construction	Fire Door Recommendations
Party wall		120-minute	FD120s
Firefighting shaft		120-minute	FD60s
Construction separating firefighting stair, firefighters lift well and firefighting lobby		60-minute	FD30s
Compartment floor		120-minute	n/a
Compartment wall		120-minute	FD120
Protected lobby		30-minute	FD30s
Areas of ancillary accommodation [1]	Theatre: ○ Store ○ Kitchen ○ Dressing rooms ○ Theatre kitchen ○ Control room ○ BOH Hotel: ○ Pantry ○ Office ○ lockers and showers ○ Staff room ○ Kitchen ○ BOH ○ Stores	30-minute	FD30
	Theatre: ○ Cycle stores ○ Bin stores	60-minute	FD60

	Hotel: ○ Cycle stores ○ Bin stores		
Plant room		60-minute	FD60
Protected corridor (e.g. hotel corridor)		30-minute	FD30s
Protected shafts		120-minute	FD60
Construction around a void separating a compartment floor		120-minute	FD120S
Protected stair		120-minute	FD60S
Substation		120-minute	FD120S
[1] Per table of BS 9999 [2]. While some of these areas are not required to be fire rated per AD B [3] e.g. stores, for the hotel the recommendations for ancillary accommodation will be applied, as a conservative approach.			

Across the building, fire stopping provisions are to be suitable for the locations at which it is provided, including being accompanied by appropriate test evidence, with all installers to be third-party accredited.

The maintenance of all the associated fire safety features within the building are to be in line with the relevant sections of BS 9999:2017 [2], the manufacturer's recommendations, and other requirements of the Building Regulations.

8.2.3 Protection of Openings, Fire Stopping and Concealed Spaces

Any openings in fire resisting walls / floors will be fire-stopped to the same rating as the wall / floor through which they pass, including all relevant openings for pipes, ducts and conduits for cables, i.e., those that do not meet minimum recommendations for openings which do not require fire stopping. The number of openings shall be kept to as few as possible and the size as small as is practicable.

Any ductwork passing through fire resisting enclosures shall either be provided with fire dampers at the compartment line or be fire resisting to the level of the highest fire resisting element it passes through. Duct penetrations into escape routes shall be fitted with automatic fire and smoke (ES) dampers linked to the fire detection and alarm system. Product classification is in accordance with BS EN 13501-3:2005+A1:2009 [22].

8.2.4 Roof Coverings

For the Saville Theatre, the separation distance is in some instances less than 6m. A minimum $B_{ROOF}(t4)$ roof covering will therefore be provided in accordance with BS EN 13501-5:2016 [23]. This is as per the recommendations in BS 9999 [2] and AD B [3]

8.2.4.1 Green Roof

A green roof is proposed on the external terraces to the hotel at Level 5, 9, 10 and 11.

AD B [3] takes account of the risk that a roof covering imposes on a building when considering fire spread from and to neighbouring buildings. It does this by limiting the composition of roof coverings relative to their location from the site boundary; the closer to the boundary, the more onerous the requirements. However, this guidance is not specific to brown/green roofs, nor is it easily applicable to the same.

In addition to AD B [3], the "The Green Roof Organisation (GRO) fire risk guidance document" [24], will be adopted as a basis of design for the green roof proposed in this design.

8.2.5 External Fire Spread - Space Separation

The risk of external fire spread must be assessed and mitigated to ensure that fire spread from the development to adjacent premises is adequately restricted. This can be by following the methods in BRE

Report BR 187 [25] to determine the required minimum boundary distance without the need to provide fire resisting elevations or to calculate the required areas of the facades that need fire protection or a performance based approach following the principals of BS 7974:2019 [26] and subject to Building Control review and approval.

The relevant boundaries (i.e. the boundaries used when assessing the potential for external fire spread) for the building are as follows:

- North-West elevation – Midpoint of New Compton Street;
- North-East Elevation – Midpoint of St Giles Passage;
- South-East Elevation – Midpoint of Shaftesbury Avenue; and,
- South-West Elevation – Midpoint of Stacey Street.

An assessment of the potential for external fire spread has been undertaken in accordance with the methods in BR 187 to ascertain how much of the façade will need fire protection. Floor compartmentation and the provision of sprinklers throughout the building have been considered in this assessment. The assessment has demonstrated that the majority of the facades can be unprotected, with the exception of the North-East façade (adjacent to St Giles Passage). On the North East façade, adequte protection shall be provided to mitigate the risk of external fire spread, thereby complying with the Building Regulations.

Protected areas of the façade will achieve 120 minutes fire resistance in terms of integrity (E), and insulation (I), from the inside to outside. If the proposals are to use the external walls as loadbearing elements, they will also achieve loadbearing (R) specification to 120 minutes;

9 Access for Fire Service Personnel and Equipment

As well as supporting the building occupant life safety objectives, the provision of both passive and active fire safety systems also provides substantial benefits to firefighter operations. These include the provision of a means to quickly identify the location of a fire and facilities from which to coordinate a response.

This section addresses the access for the Fire and Rescue Service and equipment, defines the position of the water supplies, firefighting equipment, firefighting lifts, stairs and lobbies, and their ongoing maintenance and monitoring.

9.1 Access for the fire and rescue service

9.1.1 Vehicle Access

The building can be accessed from three sides via Shaftsbury Avenue, Stacey Street and New Compton Street, as shown in Figure 10. While the building is also accessible from the fourth side via St Giles' Passage, this road only had a width of 2.7m, less than the minimum example width of 3.7m given by BS 9999 [2] and AD B [3]. This road is therefore unlikely to be sufficient for a fire vehicle so hasn't been considered for the purpose of the fire strategy.

BS 9999:2017 [2] recommends a maximum distance of 18 m from the fire appliance parking position / hardstanding to the entrance giving access to a dry fire main plus a maximum distance of 18 m between this entrance and the firefighting shaft. Fire service access into each of the firefighting shafts is also shown in Figure 10, and summarised as follows:

Firefighting Shaft 1 (Serves the theatre): Access is from Stacey Street. The firefighting stair provides access to the theatre floorplates (excluding the ground floor theatre areas which are accessible from outside) i.e., Basement 4, Basement 3, Basement 2, and Basement 1). The hard standing is in close proximity to the entrance. A protected corridor provides access to the firefighting shaft directly from outside. The total distance between the parking position and the firefighting lobby is less than 36 m. This is less than the sum of the maximum 18 m from fire appliance parking position to a dry riser inlet plus 18 m for the length of the protected corridor to firefighting shaft as recommended in BS 9999:2017 [2].

Firefighting Shaft 2 (Serves the hotel): Access is from New Compton Street. The firefighting stair provides access to the hotel floorplates (excluding the ground floor hotel areas which are accessible from outside) i.e., Level 1-10). The hard standing is in close proximity to the entrance. A protected corridor provides access to the firefighting shaft directly from outside. The total distance between the parking position and the firefighting lobby is less than 36 m. This is less than the sum of the maximum 18 m from fire appliance parking position to the a dry riser inlet plus 18 m for the length of the protected corridor to firefighting shaft as recommended in BS 9999:2017 [2].

Ancillary areas at Ground Floor: Ancillary spaces for both the hotel and theatre at ground floor are accessed via external doors on ground level, with all areas of the space being largely within 60 m from a fire appliance in parked position, as recommended by BS 9999:2017 [2] for hose laying distances in a sprinkler protected building.

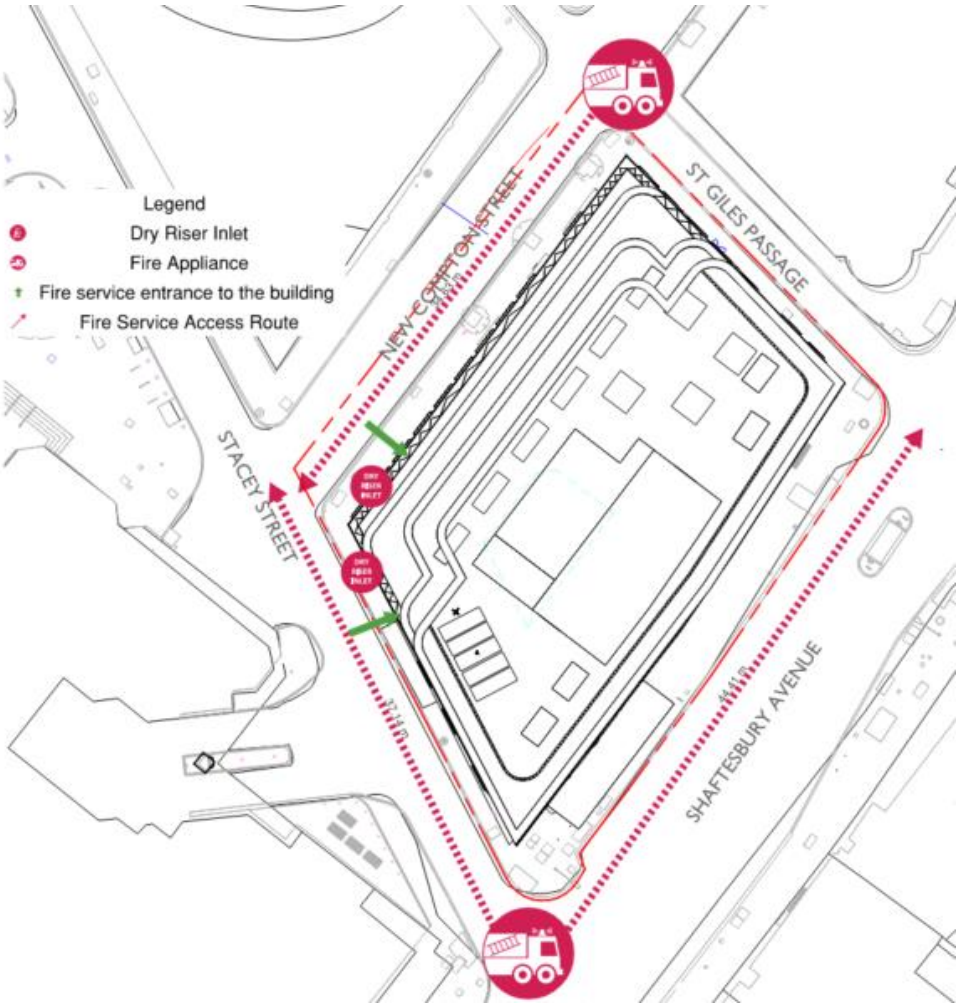

Figure 10 Firefighting access

These access routes and hardstanding's will comply with the recommendations of BS 9999:2017 [2], AD B [3] and GN 29 [27]as listed on Table 10.

Table 10 Fire and Rescue Service Vehicle Access Route Specification

Appliance type	Minimum width of road between kerbs [m]	Minimum width of gateways [m]	Minimum turning circle between kerbs [m]	Minimum turning circle between walls [m]	Minimum clearance height [m]	Minimum carrying occupancy [tonnes]
Pump	3.7	3.1	16.8	19.2	3.7	14

9.2 Fire Hydrants

As the site is in a central, developed location, it is anticipated that there are existing fire hydrants near to the building. Per BS 9999 [2] and AD B [3], there should be a fire hydrant within 90 m of dry riser inlet, along a route suitable for laying a hose. Existing Hydrants have been identified via Google Maps and are shown indicatively in Figure 11. They are suitably within 90 m of the proposed dry riser inlet locations.

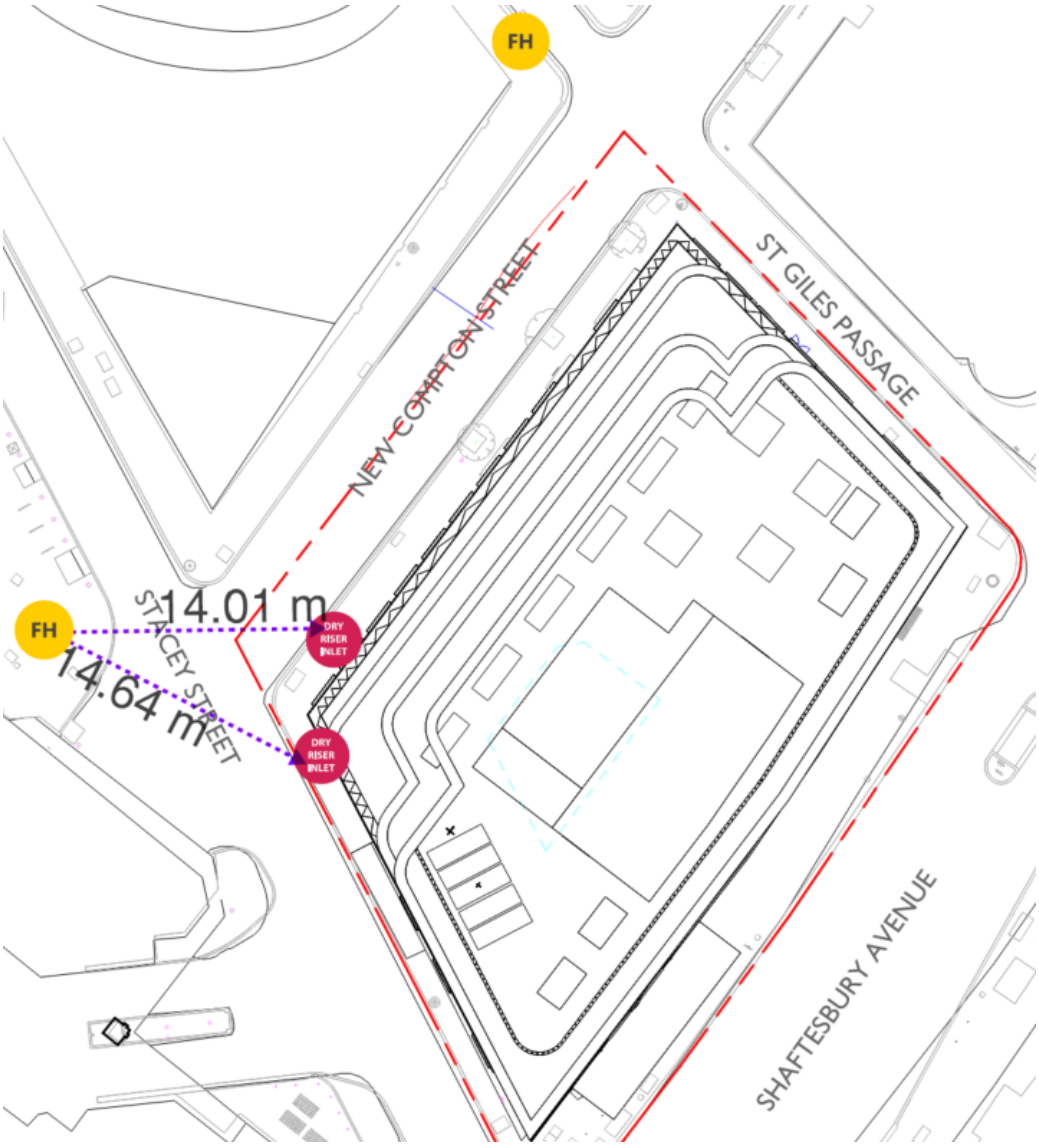

Figure 11 Hydrant provision on site (locations identified via Google Maps)

9.3 Firefighting Facilities

Saville Theatre will have two firefighting shafts. Both will be accessed from ground floor with one serving the theatre floors at levels B1-B4 and the other serving the hotel at level 01-10.

Guidance on the design of firefighting shafts is given in Section 17 of AD B [3] which makes reference Section 20 of BS 9999 [2]. The firefighting shafts serving the hotel and theatre will be equipped with the following:

- Firefighting stair
    - A clear width of 1.2m will be provided, greater than minimum width of 1.1m recommended by BS 9999 [2] and a 1 m^2 Automatic openable Vent at its head. If the stair head does not coincide with the roof of the building, an equivalent alternative means for air replacement shall be provided.
    - Smoke ventilation should be provided via a vent at the head of each stair open to the roof. The vent should have an aerodynamic free area of 0.7 m^2. This vent can be either remotely or automatically openable.
- Firefighting lobby
    - A dry riser in accordance with BS 9990:2015 [28] with outlet levels on every floor it serves.
    - Provided with facilities for smoke control. This will either be via a mechanical ventilation system or a natural smoke shaft with a cross sectional area of 3 m^2, as per Section 27.1 of BS 9999 [2].
- Firefighting lift designed in accordance with BS EN 81-72:2020 [29] and referenced standards therein.

The protected corridors at ground level will be 500 mm wider than that required for means of escape purposes to allow room for fire and rescue service personnel to move towards the firefighting shafts.

Only services associated with the firefighting shaft will pass through or be contained within the firefighting shaft.

10 Future Modifications

The proposals herein will be subject to further specification and changes as the design develops. A detailed fire strategy will be produced as the design progresses, with a level of information suitable for Building Regulations approval and the preparation of construction information. As part of the Regulatory Approvals process, the detailed fire strategy and detailed fire safety information and specifications will be the subject of milestone reviews and regular meetings which will be held with representatives from the appointed Building Control Body. As the regulatory approver, they will in turn lead the engagement process with London Fire Brigade (both the Fire Engineering Group and the Inspections team). Advice and feedback from these authorities will in turn inform the building design and the fire strategy that is being developed.

At the relevant stage, the detailed fire strategy will also form part of the information pack handed over to the building operator(s) under Regulation 38 to assist the responsible person to carry out the necessary fire safety risk assessment(s) and implement other relevant duties in accordance with the Regulatory Reform (Fire Safety) Order 2005 [7].

Management procedures have a pivotal role to play in fire prevention, control and evacuation of occupants should a fire incident occur. Maintenance procedures will be developed to ensure that all equipment and services are able to operate effectively in the event of fire. If this management is lacking, then there is a danger that all the other areas such as security measures and alarm systems will be ineffective. To ensure there is no doubt as to where the responsibility for fire safety rests, and to enable consistency of approach, it is important that a designated Fire Safety Manager is appointed. The appointed person should have the necessary authority and powers of sanction to ensure that standards of fire safety are maintained. The Fire Safety Manager may be separate persons for each demise.

11 Concluding Statement

To conclude this fire statement, the current proposals provide a design which is suitable for the purposes outlined in this document. It provides adequacies in line with Policy D12, whilst taking a pragmatic approach to Policy D5(B5) of the London Plan 2021 [1] and provides a design which has the potential to comply with the functional requirements delineated on Schedule 1, Part B of The Building Regulations 2010 [5].

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