

Outline fire strategy report
TRG-240335-RT-01-I01

Project
Centenary Building, St Mary's University, Twickenham
Outline fire safety strategy report (RIBA Stage 2)

Client
St Mary's University
Waldegrave Road
Strawberry Hill
Twickenham
TW1 4SX

Date of Issue
30-Oct-24



TRIGON
FIRE SAFETY ENGINEERING

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Amendments

Issue No.	Date	Author(s)	Reviewer	Comment
Draft 01	11-Sep-24	O. Hackett / J. Mitchell-Innes	K. Wallasch	Draft issue for design team comment.
Issue 01	30-Oct-24	O. Hackett/ K. Wallasch	D. Bostelmann	First issue following design team comments.

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Contact

Trigon Fire Safety Ltd
 3 The Square
 Richmond
 TW9 1DY

info@trigonfire.com
 +44 (0) 20 3923 7979

1. Introduction

1.1. Overview

- 1.1.1. The outline fire safety strategy presented in this report has been produced for the proposed Centenary Building located on the campus of St Mary's University, Twickenham.
- 1.1.2. The outline fire safety strategy set out in this report generally follows guidance presented in the Approved Document B - Volume 2 (2019 edition incorporating 2020 and 2022 amendments) [1] ("**ADB**") in order to meet the functional requirements of the Building Regulations 2010 (as amended) [2].
- 1.1.3. This report sets out the principles of the fire safety strategy to be discussed with the design team and all relevant stakeholders and is considered suitable for planning application; it is not appropriate to support Building Regulations approval submission.
- 1.1.4. A detailed fire safety strategy, suitable for submission to building control for Building Regulations approval, should be developed at the next design stage.

1.2. Building description

1.2.1. Site

- 1.2.2. The proposed site is located on the campus of St Mary's University, in Twickenham.
- 1.2.3. The site currently consists of the "R block" sports centre which will be demolished and replaced by the proposed Centenary Building. The adjacent building is expected to remain, and there will be an internal connection to the adjacent building at the ground floor.
- 1.2.4. The proposed new Centenary Building will be located adjacent to the University's rugby pitch to the north, a parking lot to the east, the sports block to the west and Cronin Hall to the south and will have vehicular access via an existing gated access road that serves the university campus to the north and east side.
- 1.2.5. The site plan is shown in Figure 1.1 below.

Figure 1.1: Existing building boundary highlighted in (red).



1.2.6. Proposed building

- 1.2.7. It is proposed to construct a new two-storey teaching facility known as the "Centenary Building", to provide space for flexible teaching and a medical school, for St Mary's University.
- 1.2.8. The proposed building will consist of two floor levels (i.e. ground and first floor) and will be by two stairs i.e. Stair 1 and 2. The building will have dimensions on plan of approximately 21m x 36m and the height of the top storey will be 4m, measured from lowest external ground level and the height to roof level will be 10.7m.
- 1.2.9. The current design indicates access to the adjoining building through a door on the ground floor. Information regarding existing fire safety strategy for the adjoining building has not been provided.
- 1.2.10. The proposed building includes the following main uses spread over two floors:
- Ground floor:
 - Clinical Teaching ward and classrooms;
 - Anatomage;
 - Storerooms and plant;
 - First floor
 - Classroom (3 no.);
 - Lecture Hall;
 - Admin, Dean and Executive offices;
 - Boardroom and Meeting room; and
 - MEP Plant.

1.2.11. Figure 1.2 and Figure 1.3 provide an illustrative layout of the ground and first floor of the proposed building respectively.

Figure 1.2: Proposed ground floor layout, showing the location of the stair cores and final exits.



Figure 1.3: Proposed first floor layout, showing the location of the stair cores.



1.2.12. Architectural drawings

1.2.13. The following drawings produced by Ridge and Partners LLP have been used to produce this outline fire safety strategy report. An additional drawing produced by Evoke Transport Consultants Limited has also been provided.

1.2.14. The figures included in this report are indicative and reference should be made to the architect's drawings.

Table 1.1: Drawings by Ridge and Partners LLP.

Title	Drawing number	Revision	Date Produced
Site Location Plan	5025779-RDG-XX-ST-D-A-010001	P03	09/08/2024
Existing Site Plan	5025779-RDG-XX-ST-D-A-010002	P03	09/08/2024
Proposed Site Plan	5025779-RDG-XX-ST-D-A-010201	P03	09/08/2024
Existing Floor Plan – Ground Floor	5025779-RDG-XX-00-D-A-011001	P03	09/08/2024
Existing Floor Plan – First Floor	5025779-RDG-XX-01-D-A-011002	P03	09/08/2024
Demolition Floor Plan – Ground Floor	5025779-RDG-XX-00-D-A-011101	P03	09/08/2024
Demolition Floor Plan – First Floor	5025779-RDG-XX-01-D-A-011102	P03	09/08/2024
Proposed Floor Plan – Ground Floor	5025779-RDG-XX-00-D-A-011201	P03	09/08/2024
Proposed Floor Plan – First Floor	5025779-RDG-XX-01-D-A-011202	P03	09/08/2024
Proposed Floor Plan – Roof Plan	5025779-RDG-XX-01-D-A-011204	P03	09/08/2024
Existing Elevations	5025779-RDG-XX-XX-D-A-012001	P03	09/08/2024
Demolition Elevations	5025779-RDG-XX-XX-D-A-012101	P03	09/08/2024

Title	Drawing number	Revision	Date Produced
Proposed Elevations	5025779-RDG-XX-XX-D-A-012201	P03	09/08/2024
Existing Sections	5025779-RDG-XX-XX-D-A-013001	P03	09/08/2024
Demolition Sections	5025779-RDG-XX-XX-D-A-013101	P03	09/08/2024
Proposed Sections	5025779-RDG-XX-XX-D-A-013201	P04	14/08/2024

Table 1.2: Additional drawing provided by Evoke Transport Consultants Limited

Title	Drawing Number	Revision	Date Produced
Swept Path Analysis – Fire Tender	R-24-0120/SP01	-	23/10/2024

2. Statutory controls

- 2.1.1. The building works are subject to the requirements of the Building Regulations 2010 (as amended).
- 2.1.2. The outline fire safety strategy follows the guidance presented in the Approved Document B Volume 2 (2019 edition incorporating 2020 and 2022 amendments) in order to meet the functional requirements of the Building Regulations 2010.
- 2.1.3. Where not explicitly described within this report, in all other respects, the building will be designed to comply with the relevant sections of ADB or the relevant supporting British Standards referenced therein (such as BS 9999:2017 [3]).
- 2.1.4. Responsibility for compliance with the Regulatory Reform [Fire Safety] Order 2005 [4] ("FSO") will rest with the "responsible person" and this fire safety strategy has been developed on the assumption that the building will be suitably managed.
- 2.1.5. Further details with regards to the statutory controls relevant to the building have been set out in Appendix A.2 of this report.

3. Fire safety principles

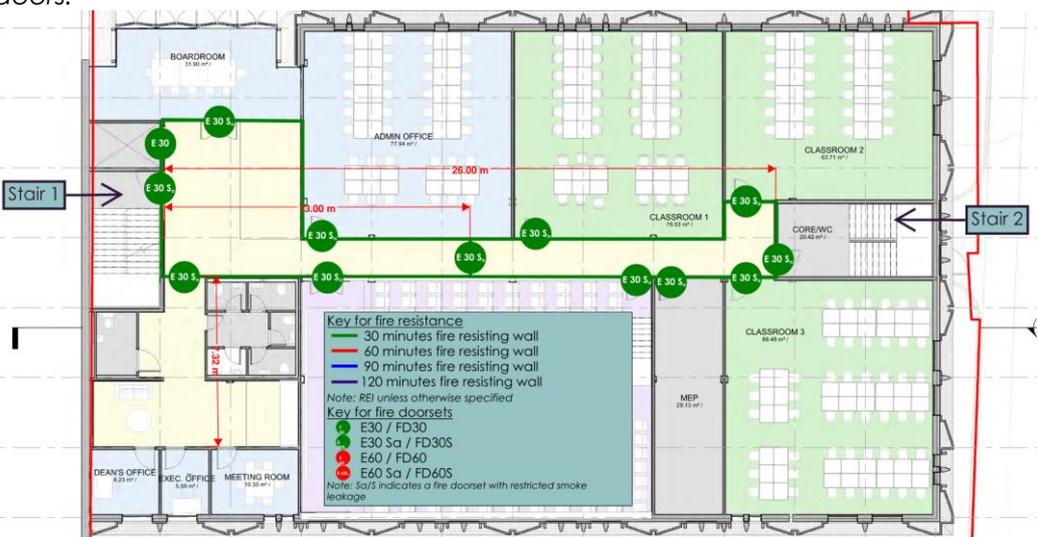
- 3.1.1. A summary of the fire safety strategy principles for the proposed Centenary Building development that are likely to be necessary to achieve compliance with the functional requirements of the Building Regulations 2010 (as amended), as well as design options, are outlined below.
- 3.1.2. During the next design stage (RIBA Stage 3 – Spatial Coordination), a detailed fire safety strategy report will be produced that will be suitable for a Building Regulations application. The report will detail the fire safety strategy and confirm the proposed design preference following discussions with the design team, client and Approval Authorities.

Table 3.1: Summary of fire safety strategy principles.

Fire protection measure	Comment
Purpose groups	<p>The building will be used for university teaching and will therefore be in purpose group 5 'Assembly and Recreation'.</p> <p>The office areas on the first floor are deemed 'ancillary' spaces to the 'Assembly and Recreation' use, and do not need to be assigned their own purpose group.</p>
B1: Means of warning and escape	
Evacuation strategy	<p>A simultaneous evacuation strategy should be implemented throughout, whereby, upon activation of a single detector or manual call point, an alarm will sound throughout the building and all occupants should evacuate.</p> <p>The fire alarm should be a 'single stage' system. In the event of a fire alarm activation within the building (manual call point or detector), a single, common fire alarm signal is given throughout the premises to alert all occupants of the potential fire and commence evacuation.</p> <p>In the event of a fire alarm activation withing the adjacent, connected building i.e. the Sports Centre, an alert signal should be sent to the main fire control panel in the Centenary Building to alert management of an alarm in the adjacent building at an early stage. The connecting door should close upon activation of the fire alarm system in either building.</p> <p>The design team has confirmed that the fire alarm system will be networked between the adjacent buildings.</p>
Fire alarm and fire detection system	<p>To allow flexibility in the design, Trigon recommend that a Category L1 automatic fire detection and fire alarm system should be provided throughout the building, designed, installed and maintained in accordance with the recommendations of BS 5839-1:2017[5].</p> <p>Manual call points complying with BS 5839-2:1983[6] or BS EN 54-11:2001 [7] Type A (direct operation) should be installed at all storey and final exits.</p> <p>The fire alarm system should be an addressable system in which signals from detectors, manual call points or any other devices, are individually identified at the control and indicating equipment.</p>

Fire protection measure	Comment		
	The control and indicating equipment (CIE) or fire alarm panel should be located on the ground floor. The exact location should be confirmed during the next design stage and should be agreed with the London Fire Brigade ("LFB").		
Travel distances	The recommended travel distances set out in ADB are outlined in the table below:		
	Use	Single direction (m)	More than one direction (m)
	Offices and classrooms	18	45
	Areas with seating in rows (e.g. Lecture Hall)	15	32
	Places of special fire hazard (within room)	9	18
	Plant rooms (distance within the room)	9	35
	All areas will be within these limits.		
Design occupancy	Expected occupancy of each floor provided by the architect in a call dated 14/08/2024 is presented below. <ul style="list-style-type: none"> • Ground: 160 people • First floor: 320 people • Total: 480 people The expected occupancy of each floor will be reviewed at the next design stage.		
Horizontal escape capacity	As per the recommendations of standard guidance, the minimum number of escape routes and exits from a room or storey should be as outlined below:		
	Maximum number of persons	Minimum number of escape routes/exits	
	60	1	
	600	2	
	The minimum width of escape routes should be as outlined below:		
	Maximum number of persons	Minimum clear width of escape routes/exits (mm)	
	60	750	
	110	850	
	220	1,050	
	Greater than 220	5mm per person	
	The recommendations of Approved Document M (ADM) [8] are outside the scope of this report; however, wider corridors and doorways may be required to meet the requirements of Part M of the Building Regulations.		
According to the design occupancy of the building, the minimum number and width of exits from each storey should be:			

Fire protection measure	Comment			
	Floor	Number of occupants	Minimum number of exits to be provided	Minimum width of exits (mm)
	Ground	160	2	1,050
	First	320	2	1,600
	<p>The Lecture Hall should be provided with at least two (2) 1,050mm wide exits to provide sufficient exit capacity for the maximum design occupancy of 165 people.</p> <p>The Lecture Hall is tiered, and there is stepped access to the rear exit of the room. Based on the proposed level change, any mobility impaired person can only use front rows and should be located near the exit at the front of the Lecture Hall.</p> <p>The design team have confirmed that two evacuation lifts will be provided (i.e. one per stair) to provide access for mobility impaired persons to the first floor and the Lecture Hall. Mobility impaired persons will only be able to use the door to the Lecture Hall with level access.</p>			
Door swing	<p>Any doors providing escape to more than 60 occupants should always be hung to swing in the direction of escape (e.g. the Lecture Hall).</p> <p>All doors on escape routes should be hung to open by a minimum of 90 degrees and open with a swing that does not reduce the effective width of any escape route across a landing (e.g. Lecture Hall doors opening to the corridor).</p> <p>Any door opening towards a corridor or a stair, should be recessed to prevent its swing encroaching on the effective width.</p> <p>The design team has confirmed that the door opening directions will be amended during RIBA Stage 3 design.</p>			
Inner rooms	<p>Standard guidance defines an inner room as any room where the only escape route is through another room, i.e. the access room.</p> <p>All inner rooms (e.g. store and water tank rooms at ground floor) should be designed in accordance with the following recommendations:</p> <ul style="list-style-type: none"> • The occupant capacity of the inner room should not exceed 60 people; • The inner room should be entered directly from the access room and only pass through a single access room; • The travel distance from any point in the inner room to the exit(s) from the access room should not exceed the allowable travel distance limits; • The access room should not be a place of special fire hazard and be in the control of the same occupier as the inner room; • The doors or walls of the inner room should contain a vision panel so people can see a fire in the access room; and, • The access room should be provided with an automatic smoke detector that operates an alarm audible in the inner room. 			

Fire protection measure	Comment
Vertical stair capacity	<p>The maximum stair capacity is calculated based on simultaneous evacuation in accordance with Table 3.2 of ADB.</p> <p>The expected occupancy on the upper floor is 320 persons therefore the minimum required width of each stair is 1,600mm. The proposed stairs do not meet this requirement and should be widened.</p> <p>The design team have confirmed that the stairs will be widened to 1,600mm during RIBA Stage 3 design.</p>
Protection of escape stairs	<p>Escape stairs should be enclosed within at least 30 minutes fire resisting construction.</p> <p>Every protected stairway should lead to a final exit, either directly or via an exit passageway. Any protected exit corridor or stair should have the same standard of fire resistance as the stair it serves.</p>
Protection and subdivision of corridors	<p>Dead-end corridors excluding recesses and extensions not exceeding 4.5m deep should be designed as a protected corridor i.e. enclosed in 30 minutes fire resisting construction and provided with a self-closing fire door. The corridor serving the Dean's office, Executive office, and meeting room on the first floor is an example of this, though the space also serves the function of a room with furniture; thus, the space should be separated from the main corridor as a room, with the connected offices considered to be inner rooms.</p> <p>Corridors more than 12m long which connect two or more storey exits (e.g. the corridors on the ground and first floors), should be sub-divided approximately mid-way by a 30-minute fire resisting self-closing fire door. This door should be hung to swing both ways and contain vision panels.</p> <p><i>Figure 3.1: First floor showing the division of the corridor, including firewalls and fire doors.</i></p>  <p>Key for fire resistance</p> <ul style="list-style-type: none"> 30 minutes fire resisting wall 60 minutes fire resisting wall 90 minutes fire resisting wall 120 minutes fire resisting wall <p>Key for fire doorsets</p> <ul style="list-style-type: none"> E30 / FD30 E30 Sa / FD30S E60 / FD60 E60 Sa / FD60S <p><i>Note: Sa/S indicates a fire doorset with restricted smoke leakage</i></p> <p><i>Note: REI unless otherwise specified</i></p>

Fire protection measure	Comment
Evacuation lifts (The London Plan)	<p>Policy D5(B5) of The London Plan (March 2021) [9] states that:</p> <p><i>"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"</i>.</p> <p>Therefore, the building should be provided with two evacuation lifts including evacuation lift lobbies. Evacuation lifts should be clearly identified and accessed via a protected lobby. The requirements of The London Plan are expanded upon in Section 4.</p> <p>The evacuation lifts and lobbies should be sited within a protected shaft providing a minimum of 30 minutes fire resisting construction. The lifts should be provided with automatic horizontal sliding landing doors at least 800 mm wide and provide 30 minutes fire resistance (E 30).</p> <p>The evacuation lifts should be provided with a switch clearly marked "Evacuation Lift" and situated adjacent to the lift landing door at the final exit level. Operation of this switch should cause the evacuation lift to operate as described in G.2.3. of BS 9999.</p> <p>The evacuation lifts should be provided with a secondary power supply, this could either be:</p> <ul style="list-style-type: none"> • a generator or a supply from a separate utility, meeting the recommendations in 8519:2020 [21]; or, • a separately fused circuit fed directly from the main incoming electrical supply to the building, located in a fire protected enclosure (meeting relevant specifications in BS 8519). <p>The design team has confirmed that two evacuation lifts will be provided (i.e. one per stair) to enable level access between the ground and first floor.</p>
Mobility impaired escape	<p>In addition to the evacuation lifts recommended above, refuges measuring 900mm x 1,400mm should be provided to each protected stair on every storey located in the evacuation lift lobby. The refuges should not restrict the means of escape route and should be provided with an Emergency Voice Communication (EVC) system complying with BS 5839-9: 2021 [10].</p>
Refuse stores	<p>Standard guidance would recommend that refuse stores are either accessed:</p> <ul style="list-style-type: none"> • from the outside; or • internally via a ventilated lobby (minimum of 0.2m² permanent ventilation). <p>The design team confirmed that an external refuse store will be provided to the Centenary Building.</p>
Emergency lighting	<p>As per guidance of ADB, all escape routes should have adequate artificial lighting and in the event of a main electricity power supply fail, suitable emergency lighting be provided to illuminate the routes/areas listed below:</p> <ul style="list-style-type: none"> • Stair cores; • Open plan areas of more than 60m²; • All toilet accommodation with a minimum floor area of 8m²;

Fire protection measure	Comment	
	<ul style="list-style-type: none"> Electricity and generator rooms; and Switch room / battery room for emergency lighting system. <p>All emergency lighting should be designed and installed in accordance with the recommendations of BS 5266-1:2016 [11].</p>	
Exit signage	<p>All means of escape routes (other than exits in ordinary use, e.g. main entrances) should be distinctively and conspicuously marked by emergency exit signs of adequate size complying with the Health and Safety (Safety signs and signals) Regulations [12] and the FSO.</p> <p>The signs should be in accordance with the guidance in BS ISO 3864-1:2011 [13] and BS 5499-4:2013 [14].</p>	
B2: Internal fire spread (linings)		
Walls and ceiling linings	All wall and ceiling linings should meet the surface spread of flame classification, in accordance with BS EN 13501-1:2018 [15], and as set out in the table below:	
	Location	Classification
	Small rooms not exceeding 30m ²	D-s3, d2
	Other rooms	C-s3, d2
	Circulation spaces	B-s3, d2
B3: Internal fire spread (structure)		
Sprinklers	As the height of the top storey of the building will not exceed 30m, sprinklers are not required to meet the recommendations of ADB for an 'Assembly and Recreation' building.	
Fire resistance	When referring to a period of fire resistance, there are three performance criteria which can be applied to each element being considered, as set out in Appendix B of ADB. For information, the acronyms which denote these classifications, as defined in BS EN 13501-2:2016 [16], have been outlined below.	
	Designation	Description
	R	Resistance to collapse (loadbearing capacity) which applies to loadbearing elements only
	E	Resistance to fire penetration (integrity)
	I	Resistance to the transfer of excessive heat (insulation)
Loadbearing elements of structure	ADB recommends that for a building in the 'Assembly and Recreation' purpose group, with a height of top storey of up to 5m above ground floor, elements forming part of the structural frame of the ground and upper storey should achieve a minimum of period of fire resistance of 60 minutes (R) to all exposed faces.	
Compartment floors	Standard guidance would not recommend compartment floors for the upper floors of an 'Assembly and Recreation' building with a top storey height of below 30m.	

Fire protection measure	Comment																					
Compartment walls	<p>Standard guidance would not recommend subdividing a multi-storey 'Assembly and Recreation' building with a floor area less than 2,000m². Therefore, based on the proposed compartment size of 756m² (i.e. 21m x 36m) no internal compartmentation will be provided.</p> <p>However, a compartment wall will be provided between the existing adjacent building and new building and should run the full height of the building in a single continuous plane and be of at least 60 minute (REI) fire resisting construction.</p>																					
Period of fire resistance	<p>The period of fire resistance of all elements should be as summarised below:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #c6e0b4;">Fire resisting element</th> <th style="background-color: #c6e0b4;">Fire resistance REI (minutes)</th> <th style="background-color: #c6e0b4;">Type of exposure</th> </tr> </thead> <tbody> <tr> <td>Protected lobbies/corridors</td> <td>30</td> <td>Each side separately</td> </tr> <tr> <td>Protected stair</td> <td>30</td> <td>Each side separately</td> </tr> <tr> <td>Evacuation lift shaft</td> <td>30</td> <td>Each side separately</td> </tr> <tr> <td>Places of special fire hazard rooms (i.e. oil-filled transformer rooms, switch gear rooms, boiler rooms, storage spaces for fuel or other highly flammable substances or rooms that house a fixed internal combustion engine)</td> <td>30</td> <td>Each side separately</td> </tr> <tr> <td>Any part of the external wall within <1,000mm of the site boundary</td> <td>60</td> <td>Each side separately</td> </tr> <tr> <td>Any part of the external wall >1,000mm of the site boundary not included in the unprotected area allowance.</td> <td>60 (RE) 15 (I)</td> <td>From inside the building</td> </tr> </tbody> </table>	Fire resisting element	Fire resistance REI (minutes)	Type of exposure	Protected lobbies/corridors	30	Each side separately	Protected stair	30	Each side separately	Evacuation lift shaft	30	Each side separately	Places of special fire hazard rooms (i.e. oil-filled transformer rooms, switch gear rooms, boiler rooms, storage spaces for fuel or other highly flammable substances or rooms that house a fixed internal combustion engine)	30	Each side separately	Any part of the external wall within <1,000mm of the site boundary	60	Each side separately	Any part of the external wall >1,000mm of the site boundary not included in the unprotected area allowance.	60 (RE) 15 (I)	From inside the building
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Fire resistance of doors	<p>Standard guidance recommends that the proposed fire doorsets are to be classified in accordance with BS EN 13501-2, BS 13501-3:2005+A1:2009 [17] and BS EN 13501-4 [18].</p> <p>All fire doors should be provided as summarised below:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #c6e0b4;">Fire doors to:</th> <th style="background-color: #c6e0b4;">Fire resistance (minutes)</th> </tr> </thead> <tbody> <tr> <td>Doors to protected lobbies/corridors</td> <td>E 30 S_a</td> </tr> <tr> <td>Doors to protected stairs</td> <td>E 30 S_a</td> </tr> <tr> <td>Doors to places of special fire hazard</td> <td>E 30</td> </tr> </tbody> </table> <p>Any doors on escape routes should be provided with a smoke seal (S_a) to prevent smoke ingress onto the escape route.</p>	Fire doors to:	Fire resistance (minutes)	Doors to protected lobbies/corridors	E 30 S _a	Doors to protected stairs	E 30 S _a	Doors to places of special fire hazard	E 30													
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Fire protection measure	Comment
Photovoltaic (PV) panels	<p>There are currently photovoltaic (PV) panels being considered on the roof.</p> <p>There is minimal guidance in current standard guidance (ADB and BS 9999) related to PV panels. The main concern with PV panels is regarding fire brigade access and extinguishing a fire in the event that there is a serious fire.</p> <p>Research undertaken by the Building Research Establishment (BRE) [18] shows that fires involving PV panels are infrequent, but they would likely increase flame spread if associated with combustible roof coverings (such as combustible membranes).</p> <p>It is recommended that the roof build up under the PV panels should be of non-combustible nature.</p> <p>It is recommended that PV panels should not be located on top of a green roof. Furthermore, it is recommended that the roof beneath the PV panels should afford at least 60 minutes fire resistance, and the insurer of the building is consulted for any further 'asset protection' recommendations.</p> <p>Additional considerations which Trigon recommend are considered, include:</p> <ul style="list-style-type: none"> • Due to the presence of PV panels, it is not possible to completely cut off power upon arrival of the fire services. As such, an easily accessible switch / circuit breaker should be provided to enable the current from the PV panels to be isolated remotely. Two switches / circuit breakers should be provided at both access level and near to the access point to the roof. • PV panels should be designed installed and operated correctly by competent third-party accredited installers. It is recommended that the selected vendor is able to provide one or more qualified persons to be responsible. Such persons should have specific training and experience with PV systems. • The PV modules should not be subject to shading or shadowing. During the operating life of the system, monitor the installation for the development of shading or shadowing sources. • Provide robust electrical fault monitoring systems and panels should automatically cut off in the event of a fire. • The PV panels should be clearly identified for the fire service. <p>The provision of PV panels should be discussed and agreed with the Approval Authorities during the next design stage.</p>
B4: External Fire Spread	
External wall construction	<p>With the exception of allowable unprotected areas (discussed below – in the 'space separation analysis' section), walls located more than 1,000mm of the boundary line the portion of the building up to 10m height should achieve Class C-s3, d2 or better (European class); while the portion over 10m can be unrestricted.</p> <p>Notwithstanding the above, it is recommended that any new materials which become part of an external wall or specified attachment should achieve class A2-s1, d0 or class A1, other than those exempted by Regulation 7(3) of the Building Regulations.</p>

Fire protection measure	Comment
Space separation analysis	<p>Standard guidance recommends that external walls should be analysed to determine the size of unprotected area permitted in order to mitigate the spread of fire from one building to another.</p> <p>A detailed external fire spread assessment has been carried out in Appendix A.3, based on the Enclosing Rectangle (ER) method described in BR 187:2014 [19].</p> <p>The initial findings of the analysis indicate that all facades have restrictions to the permitted size of unprotected areas. Please refer to Appendix A.3 for the unprotected analysis which details each facades unprotected area allowance.</p> <p>The following unprotected areas (UPA) are recommended for the facades:</p> <ul style="list-style-type: none"> • North façade: 60% allowable UPA • East façade: 50% allowable UPA • South façade: 40% allowable UPA <p>If the adjacent buildings are operated/managed by the same organisation, it may be possible to ignore the boundary and therefore the façades could be fully unprotected.</p> <p>The dimensions and assumptions of the space separation analysis will be confirmed during the next design stage.</p>
B5: Access and facilities for fire service	
Firefighting shafts	<p>As per standard guidance in ADB, as the height of top storey of the building will be less than 18m above the fire and rescue service vehicle access level, a firefighting shaft is not recommended.</p>
Fire service vehicle access	<p>The proposed building will have a total floor area of circa. 1,500m² with a top storey height of 4m.</p> <p>Standard guidance recommends that, for buildings not fitted with fire mains, with a total floor area of up to 2,000m² and with a top storey height below 11m, vehicle access should be provided for a standard pump appliance should be provided to whichever is the less onerous of the following:</p> <ol style="list-style-type: none"> a. 15% of the perimeter. b. Within 45m of every point of the footprint of the building (see Diagram 15.1 of ADB). <p>The proposed building has a total perimeter of approximately 94m, therefore standard guidance recommends that 14m of perimeter access should be provided.</p> <p>Fire service vehicles have access to the north, east and south façades which provides a total perimeter access of 94m, which equates to 100 % of the perimeter. This is far greater than what is recommended by standard guidance and as such sufficient perimeter access will be provided.</p> <p>It is recommended that management is put in place to prevent the obstruction of the perimeter of the Centenary Building due to the parking and movement of vehicles.</p>

Fire protection measure	Comment
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Fire service vehicle access to the proposed Centenary Building will be via a gated access road from Waldegrave Road, as shown in Figure 3.2 and 3.3 below.

Figure 3.2: Fire service site access.

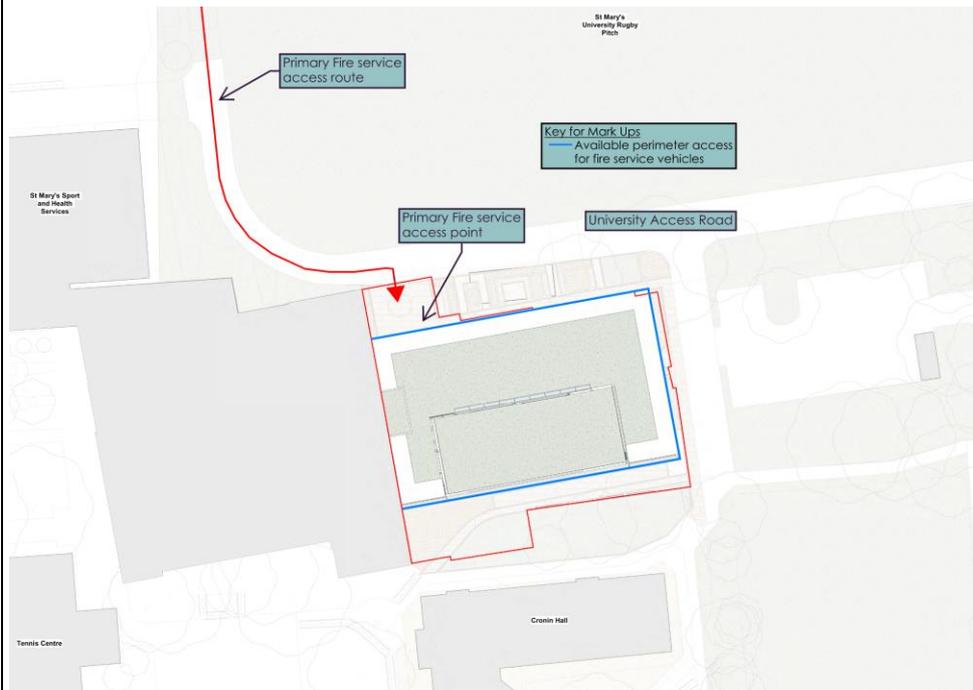
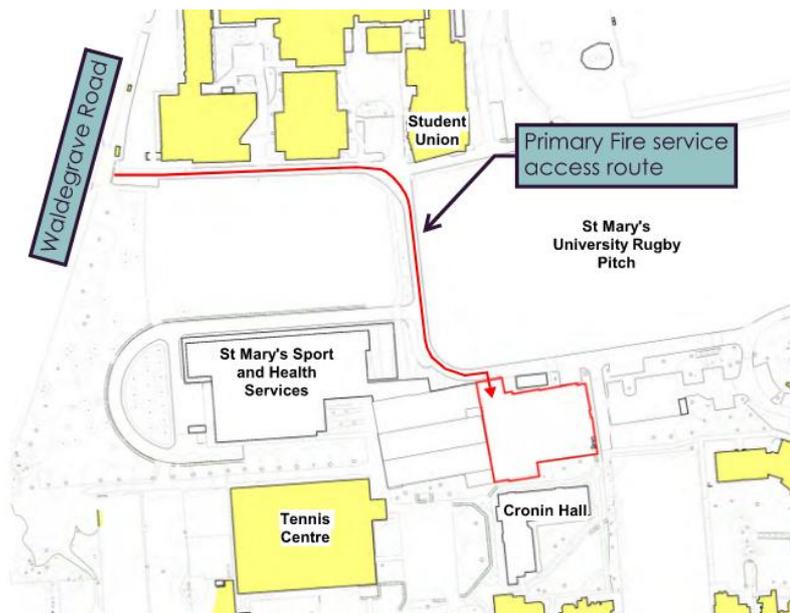
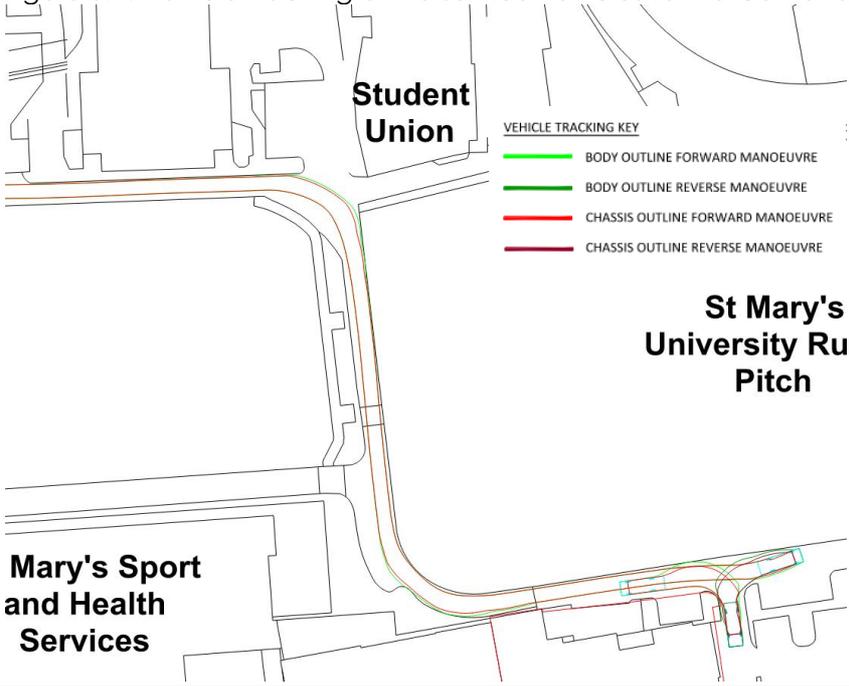


Figure 3.3: Fire service site access including entry from Waldegrave Road



In accordance with Table 15.2 of ADB, the following dimensions should be ensured:

Fire protection measure	Comment
	<ul style="list-style-type: none"> • Minimum width of road between kerbs: 3.7m • Minimum width of gateways: 3.1m • Minimum turning circle between kerbs: 16.8m (if applicable) • Minimum turning circle between walls: 19.2m (if applicable) • Minimum clearance height: 3.7m • Minimum carrying capacity: 12.5 tonnes <p>(Note: as per recommendation from the London Fire Brigade Guidance Note 29 ("GN29" 2023) [20], the minimum carrying capacity should increase to 16 tonnes, and the minimum width of gateway should increase to 3.2m.)</p> <p>Figure 3.4 shows the fire service vehicle tracking for the existing part of the "R Block" that the Centenary Building will occupy (REF: R-24-0120/SP01, provided by Evoke Transport Consultants Limited, dated 23 October 2024). It is understood that the existing fire service vehicle access route will be maintained for the Centenary Building.</p> <p><i>Figure 3.4: Vehicle tracking of fire service vehicles to the Centenary Building</i></p> 
External hydrants	<p>An external hydrant should be located within 100m of all the entry points to the building, as per the recommendations of ADB.</p> <p>The design team will determine the locations and operability of external hydrants during the next design stage.</p>

Fire protection measure	Comment
Secondary power supplies	<p>Secondary power supplies should be provided for all life safety systems.</p> <p>The electrical services for life safety and fire equipment design should follow guidance as per BS 9999 in particular Sections 28 and 37.2.3.</p> <p>The secondary power supply cables should comply with BS 8519.</p> <p>Details of the secondary power supply design should be provided by the MEP consultants during the next design stage.</p>

4. The London Plan

4.1. General

- 4.1.1. Under the legislation establishing the Greater London Authority (GLA), the Mayor is required to publish a Spatial Development Strategy (SDS) and keep it under review. The SDS is known as The London Plan. As the overall strategic plan for London, it sets out an integrated economic, environmental, transport and social framework for the development of London.
- 4.1.2. The London Plan is an integrated policy framework and must be read as a whole. The placement of the topic chapters and the policies within the chapters is no reflection on their importance or weight – it does not represent a hierarchy.

4.2. Format of report to address The London Plan

- 4.2.1. The London Plan states that:

“All major development proposals should be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party, suitably qualified assessor.”

- 4.2.2. The Town and Country Planning (Development Management Procedure) (England) Order 2015 [22] provides a definition of major developments. Generally, major developments are:

“Development of dwellings where 10 or more dwellings are to be provided, or the site area is 0.5 hectares or more;

Development of other uses, where the floor space is 1,000 square metres or more, or the site area is 1 hectare or more.”

- 4.2.3. Trigon therefore considers that, for major developments, the relevant information should be provided in a report, and it is not considered important whether this report is called a “Fire Statement” or a “fire safety strategy report”.

4.3. Competency

- 4.3.1. Regarding competency The London Plan states that:

“Fire statements should be submitted with all major development proposals. These should be produced by a third-party independent, suitably qualified assessor. 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, or suitably qualified and competent professional with the demonstrable experience to address the complexity of the design being proposed. This should be evidenced in the fire statement. Planning departments could work with and be assisted by suitably qualified and experienced officers within borough building control departments and/or the London Fire Brigade, in the evaluation of these statements.”

- 4.3.2. Further information about the competencies of the author of this report are set out in Appendix A.1 to this report.

4.4. Fire safety policies

4.4.1. As stated in The London Plan (March 2021):

"All Development Plan Documents and Neighbourhood Plans have to be 'in general conformity' with the London Plan."

4.4.2. To be 'in general conformity' the fire safety strategy (or fire statement) should be developed to consider the following fire safety Policies of The London Plan:

- Policy D5: Inclusive Design
- Policy D12 Fire Safety - Policy D12A
- Policy D12 Fire Safety - Policy D12B

4.4.3. The table below considers each the fire safety policies of The London Plan in turn.

Table 4.1: Fire Safety Policies within the London Plan.

No.	The London Plan - Item	Proposed fire safety provision
1	Policy D5: Inclusive design	
1.1	<i>"The development should 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."</i>	<p>Safe and dignified emergency evacuation for all building users should be considered throughout the design.</p> <p>Both stair cores will be provided with an evacuation lift (therefore two evacuation lifts in total).</p> <p>The design and installation of the evacuation lifts should be in accordance with the relevant provisions of BS EN 81-20 and BS EN 81-70. The evacuation lifts should be provided with back-up power supply.</p> <p>Suitable management procedures will need to be developed to ensure that all building users will be able to safely evacuate the building. The management of the lifts will be subject to development at the next design stage.</p>
2	Policy D12A: Fire safety	
	<i>"In the interests of fire safety and to ensure the safety of all building users, all development proposals must achieve the highest standards of fire safety and ensure that they:"</i>	
2.1	<i>"1) a) identify suitably positioned unobstructed outside space for fire appliances to be positioned on."</i>	<p>The outline fire safety strategy set out in this report identifies that there will be suitable fire vehicle access provided via an access road, approached from Waldegrave Road.</p> <p>Figure 3.2, 3.3 and 3.4 illustrate the fire service vehicle access routes.</p>

No.	The London Plan - Item	Proposed fire safety provision
2.2	<p><i>"1) b) identify suitably positioned unobstructed outside space appropriate for use as an evacuation assembly point."</i></p>	<p>An evacuation assembly point should be provided to support the evacuation and management of the building.</p> <p>The site plan in Figure 1.1 illustrates that there are numerous suitable routes to an evacuation assembly point and the most appropriate position should be discussed and agreed with building management as the design is developed.</p> <p>Discussions with building management will be required at the next design stage to determine the appropriate location of the assembly point.</p>
2.3	<p><i>"2) are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems and passive and active fire safety measures."</i></p>	<p>This report outlines the fire safety features to minimise the risk to life and serious injury in the event of a fire provided in the proposed Centenary Building.</p> <p>The report highlights key fire safety measures for the proposed building such as a comprehensive automatic fire alarm and fire detection system to Category L1 in accordance with BS 5839-1.</p> <p>Furthermore, 100% perimeter access is provided for fire service vehicles which is greater than the 15% perimeter access recommended in ADB.</p>
2.4	<p><i>"3) are constructed in an appropriate way to minimise the risk of fire spread."</i></p>	<p>Following the recommendation of ADB regarding proposed internal wall and ceiling linings will minimise the risk of fire spread.</p> <p>In addition, all materials which become part of an external wall or specified attachment have been recommended to achieve European Classification A2-s1, d0 or A1, classified in accordance with BS EN 13501-1:2007+A1:2009.</p>
2.5	<p><i>"4) provide suitable and convenient means of escape, and associated evacuation strategy for all building users."</i></p>	<p>The building is to adopt a simultaneous evacuation strategy with suitable means of escape provided throughout.</p>
2.6	<p><i>"5) develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in."</i></p>	<p>A detailed fire safety strategy report should be developed as the design progresses and will assist building users with maintaining the evacuation strategy and fire safety provisions.</p> <p>The fire safety strategy report will be developed such that it can be adapted to meet future alterations.</p>
2.7	<p><i>"6) provide suitable access and equipment for firefighting which is appropriate for the size and use of the development."</i></p>	<p>The perimeter access provided to fire service vehicles is 100% which is greater than the 15% perimeter access recommended by ADB. This is deemed appropriate for the size and use of the proposed building.</p>

No.	The London Plan - Item	Proposed fire safety provision
3	Policy D12B: Fire safety	
3.1	<p><i>"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."</i></p>	<p>The preparation of the fire safety strategy for the proposed development was led and reviewed by Chartered Engineers registered with the Institution of Fire Engineers.</p> <p>As set out in BS 7974, this provides a good indication of competency in that a process of education, training and experience is required to achieve this.</p> <p>Further information about the competency of the authors and reviewer of this report are set out in Appendix A.1 to this report.</p>
3.2	<p><i>"The statement should detail how</i></p>	<p><i>the development proposal will function in terms of:"</i></p>
3.3	<p><i>"1) the building's construction: methods, products and materials used, including manufacturers' details."</i></p>	<p>The building construction materials should be in accordance with the outline fire safety strategy as described in the internal wall and ceiling linings, compartmentation and the external wall construction sections of this report.</p> <p>This report provides general performance specifications for items and considering this is for a planning submission the level of detail is considered appropriate and 'in general conformity' with the intent of The London Plan.</p> <p>The architect should provide a detailed list of the proposed construction methods and materials as the design develops.</p>
3.4	<p><i>"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."</i></p>	<p>The means of escape for all building users is described above, including the provisions for users who require level egress which is supported by the inclusion of one evacuation lift per stair core and the provision of refuges to stair with associated EVC's.</p>
3.5	<p><i>"3) features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans."</i></p>	<p>The life safety features proposed include, but are not limited to, an automatic fire detection and fire alarm system (Category L1) in accordance with BS 5839-1.</p> <p>These will reduce the risk to life. For further detail, see the outline fire safety strategy report.</p> <p>Management and maintenance plans will be developed as part of the requirements of Regulation 38.</p>
3.6	<p><i>"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,</i></p>	<p>The perimeter access provided to fire service vehicles is 100% which is greater than the 15% access recommended by ADB. This is deemed appropriate for the size and use of the proposed building.</p>

No.	The London Plan - Item	Proposed fire safety provision
	<i>stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these."</i>	<p>The location and operation status of the existing fire hydrants should be confirmed, and a fire hydrant should be installed if none are present.</p> <p>The design team will confirm locations and operability of external hydrants during the next design stage.</p>
3.7	<i>"5) how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building."</i>	<p>Fire Service vehicle access is provided to the north, east and south façades of the building via an access road, approached from Waldegrave Road, in accordance with the recommendations of ADB.</p> <p>Figure 3.2, 3.3 and 3.4 illustrate the fire appliance vehicle access routes.</p>
3.8	<i>"6) ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures."</i>	<p>This outline fire safety strategy has been written to ensure that the functional requirements of the Building Regulations 2010 (as amended) will be met and to assist management with understanding maintenance requirements, the evacuation strategy and fire safety provisions.</p> <p>In addition, a detailed fire safety strategy will be developed for the building to assist management with understanding maintenance requirements, the evacuation strategy and fire safety provisions and can be adapted to meet future alterations.</p> <p>The management of the building should be aware that any future modification to the building should not compromise the fire strategy currently proposed.</p> <p>If it does compromise the fire safety strategy, a competent fire safety engineer should be consulted, and a new strategy should be developed.</p>

4.5. Conclusions

- 4.5.1. This report describes the outline fire safety strategy principles for the proposed Centenary Building and is prepared in support of the planning application and for discussion with the design team, client and other stakeholders.
- 4.5.2. It is proposed to follow the recommendations as outlined in Approved Document B Volume 2 for the fire safety strategy development. Unless otherwise stated in this report, detailed aspects of the design and construction should be in accordance with the recommendations of ADB, relevant British Standards and codes of practice.
- 4.5.3. The report is an outline fire safety strategy report suitable for RIBA Stage 2 design to illustrate how the scheme is intended to comply with the functional requirements of the Building Regulations 2010 (as amended) and the need for further development in the next design stage in order to provide further details and justifications as part of a Building Regulations approval submission.
- 4.5.4. The proposed fire safety arrangements require further development at the next design stages and are subject to Statutory Consultation and Building Regulations approval application. It is recommended that no construction works are undertaken until agreement is reached with the approval authorities to the fire safety strategy principles as set out in this report.
- 4.5.5. This report also considers the implications of The London Plan (March 2021) in particular policies D5B5, D12A and D12B. As stated in The London Plan 2021: *"All Development Plan Documents and Neighbourhood Plans have to be 'in general conformity' with the London Plan."*

5. References

- [1] HM Government, *Approved Document B - Volume 2: Buildings other than dwellings*, 2019th, incorporating 2020 and 2022 amendments ed. RIBA Books, 2022.
- [2] HM Government, *Building and Buildings, England and Wales - Building Regulations 2010*. in Statutory Instruments, no. 2010 No. 2214. Her Majesty's Stationery Office (HMSO), 2010.
- [3] The British Standards Institution (BSI), *BS 9999: Fire safety in the design, management and use of buildings - Code of practice*. BSI Standards Limited, 2017.
- [4] HM Government, *Regulatory Reform (Fire Safety) Order 2005*. in Statutory Instruments, no. 2005 No. 1541. The Stationery Office Limited, 2005.
- [5] The British Standards Institution (BSI), *BS 5839-1: Fire detection and fire alarm systems for buildings - Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises*. BSI Standards Limited, 2017.
- [6] The British Standards Institution (BSI), *BS 5839-2: Fire detection and alarm systems for buildings - Specification for manual call points*. BSI Standards Limited, 1983.
- [7] The British Standards Institution (BSI), *BS EN 54-11: Fire detection and fire alarm systems - Manual call points*. BSI Standards Limited, 2001.
- [8] HM Government, *Approved Document M - Volume 2: Buildings other than dwellings*, 2015th, incorporating 2020 amendments ed. RIBA Books, 2020.
- [9] Mayor of London, *The London Plan: The spatial development strategy for Greater London*. Greater London Authority (GLA), 2021.
- [10] The British Standards Institution (BSI), *BS 5839-9: Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems*. BSI Standards Limited, 2021.
- [11] The British Standards Institution (BSI), *BS 5266-1: Emergency lighting - Code of practice for the emergency lighting of premises*. BSI Standards Limited, 2016.
- [12] HM Government, *The Health and Safety (Safety Signs and Signals) Regulations 1996*. in Statutory Instruments, no. 1996 No.341. Her Majesty's Stationery Office (HMSO), 1996.
- [13] The British Standards Institution (BSI), *BS ISO 3864-1: Graphical symbols. Safety colours and safety signs - Design principles for safety signs and safety markings*. BSI Standards Limited, 2011.
- [14] The British Standards Institution (BSI), *BS 5499-4: Safety signs - Code of practice for escape route signing*. BSI Standards Limited, 2013.
- [15] The British Standards Institution (BSI), *BS EN 13501-1: Fire classification of construction products and building elements - Classification using data from reaction to fire tests*. BSI Standards Limited, 2018.
- [16] The British Standards Institution (BSI), *BS EN 13501-2: Fire classification of construction products and building elements - Classification using data from fire resistance tests, excluding ventilation services*. BSI Standards Limited, 2016.
- [17] The British Standards Institution (BSI), *BS EN 13501-3: Fire classification of construction products and building elements - Classification using data from fire resistance tests on products and elements used in building service installations. Fire resisting ducts and fire dampers*. BSI Standards Limited, 2009.
- [18] The British Standards Institution (BSI), *BS EN 13501-4: Fire classification of construction products and building elements - Classification using data from fire resistance tests on components of smoke control systems*. BSI Standards Limited, 2016.
- [19] Building Research Establishment (BRE), *BR 187: External fire spread: building separation and boundary distances*, Second Edition. 2014.
- [20] London Fire Brigade (LFB), *GN29: Access for Fire Appliances*, 15th ed. in Fire Safety Guidance Note, no. GN29. 2023.
- [21] The British Standards Institution (BSI), *BS 8519: Selection and installation of fire-resistant power and control cable systems for life safety, fire-fighting and other critical applications. Code of practice*. BSI Standards Limited, 2020.

- [22] HM Government, *The Town and Country Planning (Development Management Procedure and Section 62A Applications) (England) (Amendment) Order*. in Statutory Instruments, no. 2021 No. 746. 2021.
- [23] The British Standards Institution (BSI), *BS 7974: Application of fire safety engineering principles to the design of buildings - Code of practice*. BSI Standards Limited, 2019.
- [24] The British Standards Institution (BSI), *BS 5306-8: Fire extinguishing installations and equipment on premises - Selection and positioning of portable fire extinguishers. Code of practice*. BSI Standards Limited, 2023.
- [25] HM Government, *Fire Safety Risk Assessment Guides*. TSO (The Stationery Office), 2006.
- [26] HM Government, *Building Safety Act 2022*. in UK Public General Acts, no. 2022 c. 30. 2022.
- [27] Health and Safety Executive (HSE), *Construction (Design and Management) Regulations. Guidance on Regulations*. 2015.

A.1. Trigon Fire Safety

A.1.1 Our team

A.1.2 Trigon is a wholly independent fire engineering consultancy founded in 2019. Our four Directors are Chartered Engineers, registered with the Institution of Fire Engineers, with over 60 years of combined experience. We specialise in solving unique fire safety challenges for all building types and uses.

A.1.3 All projects are led by a Chartered Engineer registered with the Institution of Fire Engineers. As per BS 7974, this would provide a good indication of competency in that a process of education, training and experience is required in order to achieve this.

A.1.4 The preparation of this fire safety strategy report for the proposed Centenary Building development was led by Karl Wallasch who is a Chartered Engineer registered with the Institution of Fire Engineers.

A.1.5 Karl was supported by a team of fire safety engineers including other Chartered Engineers. Karl has an extensive experience working on the design of educational and commercial developments of all sizes and complexity.

A.1.6 Management systems

A.1.7 Trigon's Management Systems have achieved certification by a UKAS accredited body to the following standards:

- ISO 9001 - Quality management systems
- ISO 14001 - Environmental management systems
- ISO 45001 - Occupational health and safety management systems

A.1.8 This demonstrates Trigon's commitment to providing our clients with consistently high-quality fire safety advice. Trigon is also committed to minimising our impact on the environment and ensuring an adequate control of health and safety risks.

A.1.9 Trigon is Safety Schemes in Procurement (SSIP) accredited. This valued and recognised accreditation demonstrates Trigon's compliance with legislation and our ability to effectively manage risk. SSIP is approved by the Health and Safety Executive (HSE) and aims to promote a single standard for health and safety.

A.2. Statutory controls

A.2.1 The Building Regulations 2010

A.2.2 The building works are subject to the requirements of the Building Regulations 2010 (as amended), which apply across England and Wales. For fire safety, the functional requirements of the Building Regulations 2010 are set out under the following headings:

- Requirement B1 – means of warning and escape,
- Requirement B2 – internal fire spread (linings),
- Requirement B3 – internal fire spread (structure),
- Requirement B4 – external fire spread, and
- Requirement B5 – access and facilities for the Fire Service.

A.2.3 As the requirements of the Building Regulations are functional in nature, there is no obligation to follow the standard guidance of Approved Document B – Volume 2 (ADB) if compliance can be demonstrated in some other way.

A.2.4 Where aspects of the design are not specifically discussed in this report, they should follow the recommendations and guidance of ADB, as well as any relevant supporting British Standards and codes of practice.

A.2.5 Regulation 4(3) of the Building Regulations 2010 states that, for existing buildings, any building work carried out should ensure the building complies with the applicable requirements of Schedule 1 of The Building Regulations (with amendments) or, where it did not comply with any such requirement, ensure that it is no more unsatisfactory in relation to that requirement than before the work was carried out.

A.2.6 In accordance with the requirements of the Regulation 11A of the Building Regulations 2010, the client (St Mary's University) must make suitable arrangements for planning, managing and monitoring a project (including allocation of sufficient time and other resources) so as to ensure compliance with all relevant requirements. "relevant requirements" means, to the extent relevant to the building work or design work in question, the requirements of regulations 4, 6, 7, 8, 22, 23, 25B, 26, 26A, 28, 36, 41(2)(a), 42(2)(a), 43(2)(a), 44A, 44ZA, 44ZC and 44D to 44I and Schedule 1 of the Building Regulations.

A.2.7 Statutory guidance

A.2.8 Approved Document B (ADB) Volume 2 provides guidance how the requirements of Part B of the Building Regulations can be satisfied. ADB makes reference to other standards and guidance documents with supplementary recommendations (such as specific clauses in BS 9999:2017).

A.2.9 As the requirements of the Building Regulations are functional in nature, there is no obligation to follow the standard guidance of ADB if compliance can be demonstrated in some other way.

A.2.10 This report presents an outline fire safety strategy suitable for planning application and discussions with the design team, client, Statutory Authorities and other stakeholders. It is not considered suitable to support Building Regulations approval.

A.2.11 The outline fire safety strategy follows the guidance presented in the Approved Document B - Volume 2 (2019 edition incorporating May 2020 and 2022 amendments) in order to meet the functional requirements of the Building Regulations 2010. Departures or deviations from the relevant fire safety guidance document are detailed within this report.

A.2.12 Where not explicitly described within this report, in all other respects, the building will be designed to comply with the relevant sections of ADB or the relevant supporting British Standards referenced therein.

A.2.13 Fire safety engineering

A.2.14 Fire safety engineering (also referred to as performance-based design) is recognised within ADB as an alternative approach to fire safety. Fire safety engineering may be the only practical way to achieve a satisfactory standard of fire safety in some complex buildings and buildings that contain different uses.

A.2.15 Fire safety engineering may also be suitable for solving a specific problem with a design that otherwise follows the provisions of this document.

A.2.16 ADB refers to BS 7974:2019 [23] which provides a framework for and guidance on the application of fire safety engineering principles to the design of buildings. BS 7974 outlines different fire engineering methods including qualitative analysis which is a non-numerical examination of a proposal using experience, knowledge and engineering judgement alone.

A.2.17 Regulation 7

A.2.18 As per Regulation 7(1) of the Building Regulations 2010 (As Amended), all building work should be carried out with adequate and proper materials which are:

- appropriate for the circumstances in which they are used,
- adequately mixed or prepared, and
- applied, used or fixed so as adequately to perform the functions for which they are designed; and in a workmanlike manner.

A.2.19 Regulation 7(2) of the Building Regulations 2010, as amended by the Building (Amendment) Regulations 2018, restrict the use of combustible materials in the external walls of 'relevant buildings' over 18m in height.

A.2.20 This development will not be classified as a 'relevant building' i.e. a building with a storey at least 18m above ground and which contains one or more dwellings; an institution; or a room for residential purpose. Therefore, the requirements of Regulation 7(2) will not be applied.

A.2.21 Please refer to Section 'B4: External Fire Spread' of this report for guidance on the external façade and the materials recommended within the external walls.

A.2.22 The Regulatory Reform (Fire Safety) Order 2005

A.2.23 Responsibility for compliance with the Regulatory Reform [Fire Safety] Order 2005. In a workplace this will usually be the employer together with persons who may have control of other parts of the premises. In other cases, the person(s) who has control of the premises will be the "responsible person".

A.2.24 Where building work and fire protection measures comply with Part B of the current Building Regulations, additional physical measures should not normally be required under the FSO unless high-hazard materials or processes are introduced into the building.

A.2.25 The FSO places on the "responsible person" specific duties such as carrying out a fire risk assessment and providing first-aid firefighting equipment in accordance with the recommendations of BS 5306-8 [24]. More detailed guidance is available in a series of Fire Safety Risk Assessment Guides published for HM Government [25].

A.2.26 This fire safety strategy has been developed on the assumption that the buildings will be suitably managed. This includes documenting the basis on which the fire safety design was planned, the type of management organisation envisaged for running the buildings, and the consequential staff responsibilities.

A.2.27 Regulation 38

A.2.28 Regulation 38 of the Building Regulations requires fire safety information for new or altered buildings to be passed to the responsible person at completion of the project or on occupation, whichever comes sooner.

A.2.29 The aim of this requirement is to provide the responsible person with appropriate information to assist to operate and maintain the building in reasonable safety. This information can therefore assist the responsible person in undertaking a Fire Risk Assessment to meet the requirements of the Regulatory Reform [Fire Safety] Order 2005 (FSO).

A.2.30 Building Safety Act 2022

A.2.31 The Building Safety Act 2022 (The Act) [26], together with the supporting secondary legislation, requires 'higher-risk buildings' to go through a number of 'gateway points' as part of the design and construction process. A new Building Safety Regulator (BSR), part of the Health and Safety Executive, will oversee and the process and ensure appropriate measures are being implemented to manage risk. 'Higher-risk buildings' are buildings over 18m or having at least 7 storeys and containing at least two residential units.

A.2.32 The proposed centenary Building development is therefore not considered to be a 'higher-risk building'.

A.2.33 The Act has been set out with the objective of delivering the biggest changes to building safety for nearly 40 years. The reformed building safety system will cover the performance of all buildings as well as the management of fire and structural safety risks in new and existing buildings 'in scope'.

A.2.34 The regime will also introduce accountability and statutory responsibilities to 'dutyholders'. As such, it is recommended that building information should be created, stored and updated throughout the design and construction process and a detailed record of the as-built information should be collated.

A.2.35 Whilst the proposed Centenary Building is not an 'in scope' building, it is recommended that building information should be created, stored and updated throughout the design and construction process and a detailed record of the as-built information should be collated.

A.2.36 Property protection

A.2.37 Property protection is not a requirement of the Building Regulations and therefore is not explicitly considered in this report. However, it should be noted that many of the fire safety provisions will afford some degree of property protection to the building.

A.2.38 The London Plan 2021

A.2.39 This outline fire safety strategy report considers the implications of The London Plan (March 2021). As stated in The London Plan (March 2021): “*All Development Plan Documents and Neighbourhood Plans have to be ‘in general conformity’ with the London Plan.*”. Therefore, to be ‘in general conformity’ the fire safety strategy will be developed to consider the fire safety Policies of The London Plan as set out below:

- **Policy D12 Fire Safety - Policy D12A:**

- This report addresses how the scheme will meet the functional requirements of the Building Regulations by following recommendations of standard guidance (ADB and BS 9999) and sets out additional fire safety enhancements in addition to those recommended in ADB or BS 9999.
- Items 1-6 of Policy D12A are considered further in this report.

- **Policy D12 Fire Safety - Policy D12B:**

- This report provides a holistic overview of the proposed fire safety strategy principles for the development and therefore in our opinion that it is suitable for the use as a Fire Statement.
- Annex A.1 of this report sets out the qualifications of the authors of this report.
- Items 1-6 of Policy D12B are considered further in this report.

A.2.40 The recommendation of this outline fire safety strategy report should be discussed and agreed with the Local Authority responsible for planning.

A.2.41 Construction Design and Management (CDM)

A.2.42 The Construction Design and Management (CDM) Regulations 2015 [27] must be followed during the design and construction of the building.

A.2.43 Under the CDM Regulations a client must make suitable arrangements for managing a project, including the allocation of sufficient time and resources to ensure that the construction work is carried out safely so far as is reasonably practicable. The client is also responsible to provide all pre-construction information as soon as is practicable to every designer and contractor appointed. Furthermore, it is the client's responsibility to ensure that a construction phase plan is drawn up before construction begins.

A.2.44 Where there is more than one contractor, the client must appoint a principal designer and a principal contractor to ensure the information is coordinated by responsible person(s). All designers or contractors should be ensured that they have the skills knowledge and experience, and if they are an organisation, the organisational capability, necessary to fulfil the role they are appointed to undertake.

A.3. External fire spread assessment

A.3.1 Space separation analysis - Introduction

- The radiation intensity at each unprotected area (UPA) is assumed to be 84kW/m² for 'Assembly and Recreation' as per BR 187.
- All unprotected areas are assumed to be distributed equally along the façade.

A.3.2 The relevant boundary should be taken as the site boundary, unless a façade faces onto a space that is unlikely to be developed, such as a road, canal, or river. In this case, the boundary distance is indicated in Figure A.3.1.

Figure A.3.1: Plan indicating facade designations and boundary distances.

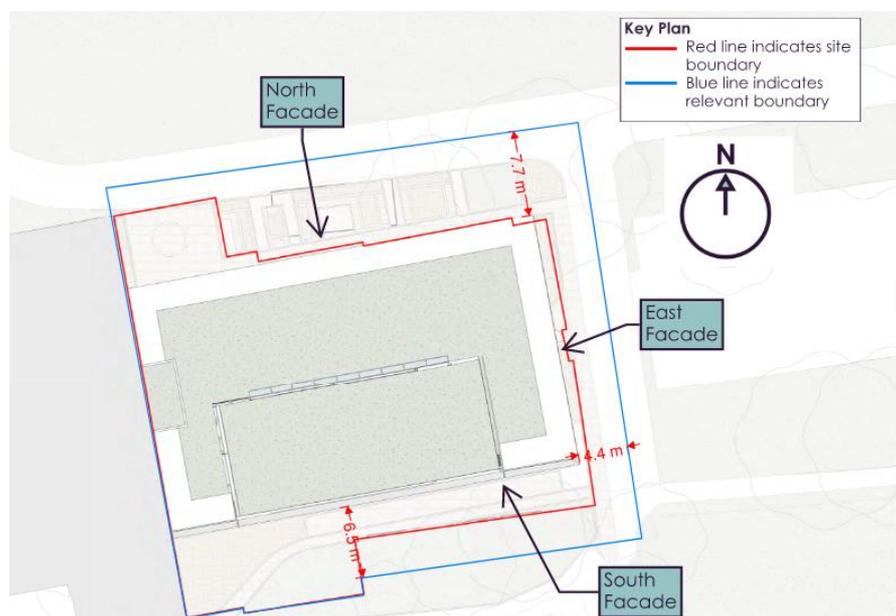


Table A.3.1: Table showing the amount of area to be protected.

Elevation	Façade height x length (m x m)	BRE height x length (m x m)	Available boundary distance (m)	Area of façade to be protected (%)	Area of façade to be protected (m ²)
North	8 x 37	9 x 40	7.7	40	115.1
East	8 x 22	9 x 24	4.9	50	123.2
South	10 x 37	12 x 40	6.5	60	229

A.3.3 If the adjacent buildings are operated/managed by the same organisation, it may be possible to ignore the boundary and therefore the façades could be fully unprotected.

A.3.4 The dimensions and assumptions of the space separation analysis will be confirmed during the next design stage.