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Oriel Fire Planning Statement

	Name	Date
Prepared by	Benjamin Khoo	11/04/2023
Checked	Jason Mallett	11/04/2023
Approved	Judith Schulz	11/04/2023

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Oriel

Fire Planning Statement

Reference: ORL-ARP-XX-XX-TRP-V-000009

Status: D5 – Suitable for Planning Application

P03 | 6 April 2023



This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 277680-00

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P01	16 Dec 2022		Fire Planning Statement issued for review and comment by the design team – areas to be completed are highlighted in yellow		
			Prepared by	Checked by	Approved by
		Name	Benjamin Khoo	Jason Mallett	Judith Schulz
		Signature			
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			Prepared by	Checked by	Approved by
		Name	Benjamin Khoo	Jason Mallett	Judith Schulz
		Signature			
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1. Application Information

1.1 Development address

The proposed development will be located at the following address

Table 1: Development address

Address line 1	St Pancras Hospital
Address line 2	4 St Pancras Way
Address line 3	
Town	London Borough of Camden
City	London
Postcode	NW1 0PE

1.2 Description of the proposed development

The existing Moorfields Eye Hospital at City Road (Moorfields at City Road) and University College London (UCL) Institute of Ophthalmology (IoO) services at Bath Street are to relocate into a single building at the existing St. Pancras Hospital site (hereafter referred to as the 'Proposed Development').

The Proposed Development comprises a single building, between eight and thirteen storeys in height, as well as provision of public realm at Upper Ground Floor, blue badge parking, and vehicular drop off points along St Pancras Way. The building is arranged around a central atrium and connection space, called the Oriel. There is also a roof terrace on the sixth floor on the south-western corner of the building.

The Proposed Development will comprise a mix of uses including clinical, research and education purposes, including eye care accident and emergency (A&E) department, outpatients, operating theatres, research areas, education spaces, café and retail areas, facilities management, office space and plant space.

The Proposed Development includes the following relevant features:

- The main structure is concrete, with structural steel forming link bridges and the oriel structure in the centre. The external wall is a glass curtain wall system complying with the most stringent regulatory requirements.
- The height of the building from the lowest firefighting access level (Lower Ground Floor) to the highest occupied level (eighth floor) is 38m.
- The building consists of a total of thirteen storeys, including Basement, Lower Ground Floor, Upper Ground Floor, eight occupied storeys above the Upper Ground Floor and two floors of plant, with additional plant on the rooftop.
- The building includes three firefighting cores. The northern and eastern cores allow access to all floors (excluding the basement), with the southern core extending from the Lower Ground Floor to the rooftop terrace on the sixth floor. The basement is served by an internal protected stair from the Lower Ground Floor and by a dedicated firefighting entrance from street level into the basement. Good perimeter access is also available.
- A central atrium extends up through the building, partly terminating at the top of the fifth floor with the remainder continuing to the top of the seventh, with the atrium base split over the Upper Ground and Lower Ground Floors. The base of the atrium will be used primarily as a circulation space with reception and exhibition areas located on the Upper Ground Floor. The central Oriel connection space on upper levels will be used as waiting and breakout areas.
- The largest projected floor plan is on the Lower Ground Floor where the Gross Internal Area (GIA) measures approximately 5,562m². The total GIA for the building is approximately 48,015m².

- The building will be provided with an automatic sprinkler suppression system.

A typical plan of the building is illustrated in Figure 1, indicating the major elements of the building.

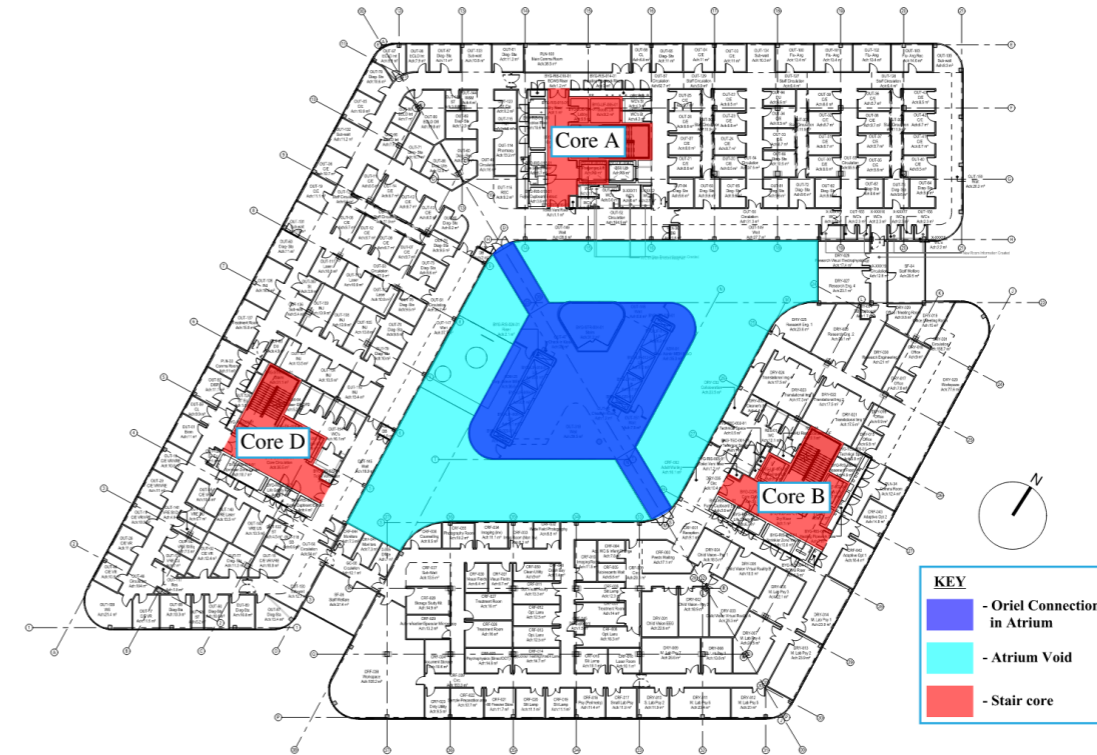


Figure 1: Typical floor plan

1.3 Site layout plan

The following layout illustrates the wider environment around the Proposed Development site.

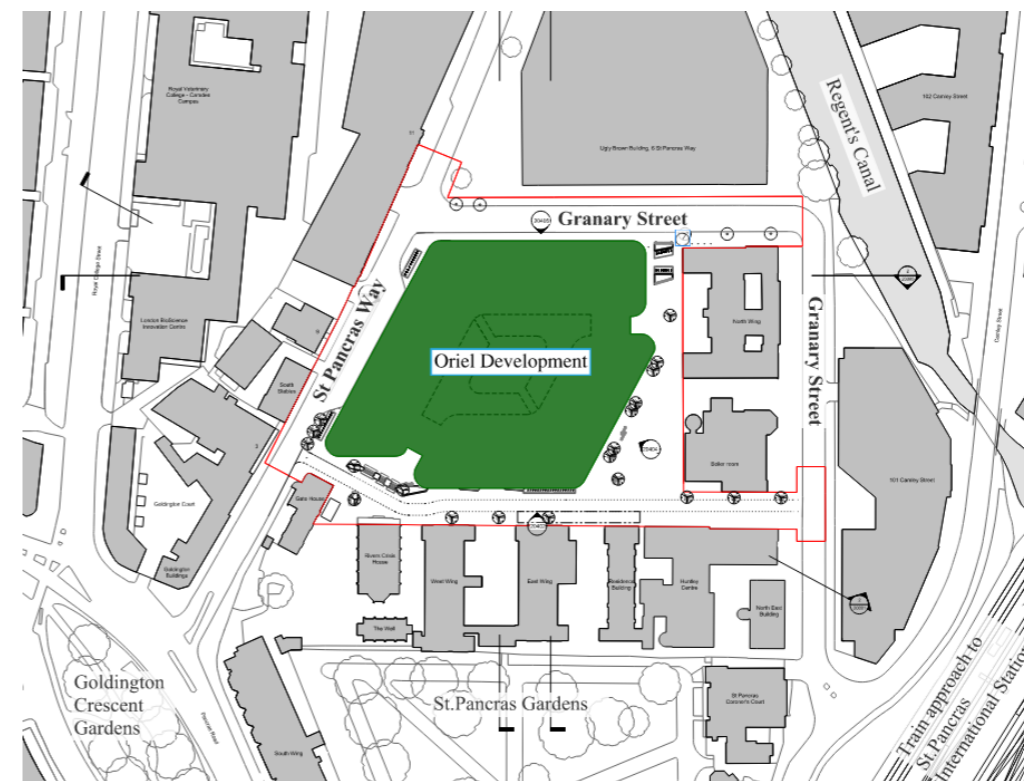


Figure 2: Site layout plan

1.4 Competency statement

This planning statement has been approved by Judith Schulz CEng, MIFireE, MSt (Cantab), Dipl. Ing. Judith is a Director at Arup and has over 16 years of fire engineering experience, working on projects across a wide range of sectors, including various healthcare developments and mixed use buildings, including new builds and existing building remodelling for e.g. Royal Cornwall Hospitals Trust, HCA UK medical facilities at The Shard, UCLH in London, as well as overseas facilities, including numerous developments and refurbishments of existing hospitals for Waitemata Health in Auckland, New Zealand.

1.5 Consultation undertaken

A fire statement was prepared by Aecom on 13/01/22; as part of the planning approval, a condition was set that the development is to comply with policy D5 of the 2021 London Plan, in ORL-ACM-XX-RP-Y-000001_S3_Fire Safety Statement .

The fire safety design for the Proposed Development was documented to a RIBA Stage 3 level of detail by Aecom, and was presented to the Approved Inspector (AI), Corporate Approved Inspector by Aecom.

Comments from the London Fire Brigade (LFB) have been received in September 2022 and are being responded to as part of the RIBA Stage 4 design process.

Further consultation meetings with the Trust Fire Officer, Building Control, the London Fire Brigade take place during RIBA 4 to discuss the design development since RIBA 3.

2. Overview

Arup has been appointed by Bouygues UK (BUYK) to develop the fire strategy for the Proposed Development to a RIBA Stage 4 level of detail and to provide fire engineering support to the design team to incorporate the fire safety requirements into their designs.

This Fire Planning Statement outlines the fire safety principles that have been developed for the Proposed Development. The fire safety design is detailed further in the fire strategy report, which provides engineering analysis where necessary to justify the fire safety principles. It is the fire strategy report which will form the basis of further consultation with the AI, the LFB, the Trust Fire Officer and the end users.

2.1 Goals and objectives

The building is being designed such that it complies with the relevant legislation such as Part B Building Regulations 2010 (as amended), Schedule 1, Part B, Construction Design and Management Regulations 2015 (CDM) and Regulatory Reform (Fire Safety) Order 2005 (FSO).

Therefore, the minimum fire strategy goals for the Proposed Development are:

- Comply with the functional requirements of Part B of the Building Regulations 2010, and prescriptive material requirements in Regulation 7 as applicable to the external wall
- To be designed, buildable and maintainable in accordance with CDM and
- To be manageable in accordance with the FSO without relying on an unrealistic or unsustainable management regime.
- To comply with the London Plan 2021 Policy D5 Fire Safety

2.2 Basis of design

The fire safety strategy has been based on the following fire safety guidance documents:

- For patient levels: Health Technical Memorandum (HTM) 05-02 Firecode
- For non-patient access levels: Approved Document B Volume 2, 2019 (ADB)

AD B is undergoing regular updates at this time, and as much as possible, the most recent guidance in AD B will be adapted.

Reference is also made to the London Plan ‘for consultation guidance’ with aspirations being incorporated into the detailed fire safety strategy. Refer to Section xxx for more detail on the London Plan.

In some instances, deviations from standards are necessary to resolve project constraints; where that is the case, detailed justifications for the deviation will be developed as part of the fire strategy, for discussion and agreement with relevant Stakeholders. Until approval is obtained, they remain an approvals risk.

2.3 Occupancy profile

HTM 05-02 makes recommendations with regard to the fire safety design of a building based on the “dependency” of its intended occupancy, i.e. those most likely to use a given space within a building. HTM 05-02 gives three classifications for patient dependency:

- **Independent** – Patients whose mobility is not impaired in any way and they are able to physically leave the premises without staff assistance, or they experience some mobility impairment and rely on another person to offer minimal assistance, being sufficiently able to negotiate stairs unaided or with minimal assistance.
- **Dependent** – All patients except those classified as “independent” or “very high dependency”.
- **Very high dependency** – Those whose clinical treatment and/or condition creates a high dependency on staff. Including those in

intensive care areas, operating theatres, coronary care etc. and those for whom evacuating would prove potentially life threatening.

For non-patient access areas, the ADB gives recommendations for the fire safety design of the building by classifying areas into 'Purpose Groups'. This will differ depending on the use of the space with similar risk areas being classified together.

Classifications of each space within the Proposed Development according to ADB and HTM 05-02 are summarised within Table 1.

Table 2: Purpose group classification

Departments	Floor	Dependency of occupants based on HTM 05-02	Purpose Group based on ADB
Plant	Basement		
A&E	Lower Ground Floor	Dependent	-
Optometry		Dependent	-
Radiology		Dependent	-
Pharmacy		Independent	-
Staff Welfare		Independent	-
Atrium base		Dependent	-
FM Department		Independent	-
Plant Area		Independent	-
CYP	Upper Ground Floor	Dependent	-
Outpatients		Dependent	-
Education		-	3 (Office)
FM		Independent	-
Atrium base		Dependent	-
Retail Areas		Dependent	-
Outpatients	First Floor	Dependent	-
CRF (Clinical Research Facility)		Dependent	-
Dry labs		Independent	-
Electrodiagnostic	Second Floor	Dependent	-
Outpatients		Dependent	-
Private Patients Unit		Dependent	-
Surgery Recovery		Dependent/ Very high dependency	-
Surgery	Third Floor	Very high dependency	-
Education	Fourth Floor	-	3 (Office)

Departments	Floor	Dependency of occupants based on HTM 05-02	Purpose Group based on ADB
Tech Hub		-	3 (Office)
Plant		Independent	-
Outpatients	Fifth Floor	Dependent	-
Ocular Prosthetics		Dependent	-
Wet Labs		Independent	3 (Office)
Education	Sixth Floor	-	3 (Office)
Wet Labs		-	3 (Office)
Commercial	Seventh Floor	-	3 (Office)
Specialist Laboratory	Eighth Floor	-	3 (Office)
Plant Area		Independent	-
Shell and Core Area		-	3 (Office)
Open Plant	Rooftop	-	2 – 7c (Roof Plant)
Staff Welfare	Oriel Connections	Independent	-
Waiting Areas		Dependent	-

2.4 Referenced drawings

This fire safety statement is based on information made available at the time of writing the report.

The drawings used for reference during preparation of this statement are:

Description	Drawing Number	Revision	Produced by	Issue Date
General Arrangement Plan, Lower Ground Floor	ORL-IBI-XX-LG-DPL-A-250009	P02	IBI	16-12-2022
General Arrangement Plan, Upper Ground Floor	ORL-IBI-XX-UG-DPL-A-250110	P02	IBI	16-12-2022
General Arrangement Plan, First Floor	ORL-IBI-XX-01-DPL-A-250111	P02	IBI	16-12-2022
General Arrangement Plan, Second Floor	ORL-IBI-XX-02-DPL-A-250112	P02	IBI	16-12-2022
General Arrangement Plan, Third Floor	ORL-IBI-XX-03-DPL-A-250113	P02	IBI	16-12-2022
General Arrangement Plan, Fourth Floor	ORL-IBI-XX-04-DPL-A-250114	P02	IBI	16-12-2022
General Arrangement Plan, Fifth Floor	ORL-IBI-XX-05-DPL-A-250115	P02	IBI	16-12-2022
General Arrangement Plan, Sixth Floor	ORL-IBI-XX-06-DPL-A-250116	P02	IBI	16-12-2022
General Arrangement Plan, Seventh Floor	ORL-IBI-XX-07-DPL-A-250117	P02	IBI	16-12-2022
General Arrangement Plan, Eighth Floor	ORL-IBI-XX-08-DPL-A-250118	P02	IBI	16-12-2022
General Arrangement Plan, Ninth Floor	ORL-IBI-XX-09-DPL-A-250119	P02	IBI	16-12-2022
General Arrangement Plan, Tenth Floor	ORL-IBI-XX-10-DPL-A-250120	P02	IBI	16-12-2022
Roof General Arrangement Plan, Sixth Floor	ORL-IBI-XX-06-DPL-A-301106	P02	IBI	16-12-2022

Description	Drawing Number	Revision	Produced by	Issue Date
Roof General Arrangement Plan, Sixth Floor	ORL-IBI-XX-06-DPL-A-301106	P02	IBI	16-12-2022
Roof General Arrangement Plan, Seventh Floor	ORL-IBI-XX-07-DPL-A-301107	P02	IBI	16-12-2022
Roof General Arrangement Plan, Eighth Floor	ORL-IBI-XX-08-DPL-A-301108	P02	IBI	16-12-2022
Roof General Arrangement Plan, Ninth Floor	ORL-IBI-XX-09-DPL-A-301109	P02	IBI	16-12-2022
Roof General Arrangement Plan, Tenth Floor	ORL-IBI-XX-10-DPL-A-301110	P02	IBI	16-12-2022

3. Fire safety provisions

3.1 Evacuation regime

A Progressive Horizontal Evacuation (PHE) will be employed for the patient areas of the building with dependent or highly dependent patients.

On sounding of the fire alarm the patients will be evacuated from an area affected by a fire by staff, through a fire-resisting barrier to an adjoining fire compartment on the same floor. This evacuation regime is designed to protect the occupants from the immediate dangers of fire and smoke. Occupants may remain in these compartments until the fire is dealt with or until instructed to escape vertically through a staircase or adjacent compartment.

Other people in that compartment will evacuate the building independently.

People in non-clinical areas such as education and laboratory spaces will evacuate the building upon activation of a fire alarm, anywhere in the building.

There are three protected stairs, each in a firefighting shaft, associated with a firefighting lift and a separate associated evacuation lift.

Patients will not evacuate through the atrium; they will exit to adjacent sub-compartments, compartments and / or stairs.

Occupants in central Oriel Connection will evacuate over the link bridges to adjacent accommodation, and from there to escape stairs, as shown in Figure 1. The stairs discharge to the outside, either directly or by protected route.

3.2 Detection and alarm

To facilitate progressive horizontal evacuation, a Category L1 detection and alarm system, designed and installed in accordance with BS 5839-1 and HTM 05-03 Part B will be provided throughout the proposed building.

The atrium will be designed to ensure that the alarm is audible within all occupied areas of the atrium space, taking account of the different evacuation zones that the building will be divided into.

Point detection will be provided throughout the building, with the exception of the atrium which will be provided with an alternative detection system that can be readily maintained given the installation will be at height.

3.3 Progressive horizontal compartmentation

Patient access floors will be separated into compartments, to facilitate progressive horizontal evacuation. The concept of hospital streets (as defined by HTM 05-02) is not adopted in this development; instead it has been designed to generally meet the following recommendations of HTM 05-02:

- a minimum of three exits will be provided from each compartment, two to an adjoining compartment and a third via a route to a stairway or a compartment;
- each compartment will have a minimum floor area of 350 m² and a maximum area of 2,000 m² as permitted for sprinklered buildings;
- each compartment can accommodate, in addition to its normal occupants, the designed occupancy (including all relevant life support systems) of the most highly occupied adjoining compartment.

Within a typical clinical floor of the Proposed Development, it is proposed that there will be three stair cores and either four or five compartments, depending on the floor layout.

Generally a compartment will have three exits in line with the HTM 05-02 recommendations; with limited instances where a compartment leads to two adjacent compartments which deviates from the HTM 05-02 recommendations. This has been carefully reviewed and is acceptable due to the circular nature of the arrangement, providing sufficient redundancy of alternative escape arrangements, where a compartment is not directly served by a stair.

Additional management considerations have been set out to enable concurrent development of the design to a greater level of detail, at the same time as the Trust forms the future fire safety management plan for the building.

The current design features adjacent non-clinical and clinical areas, and instances where clinical and non-clinical compartments are on the same floor.

Where clinical areas escape through non-clinical areas, the escape routes through non-clinical area will be designed to accommodate beds/trolleys where appropriate with doors should swing in the direction of escape, and sufficient holding space where necessary.

Where non-clinical areas are required to escape through clinical areas, escape routes will be arranged so that escape is via circulation routes within clinical areas only.

Sub-compartmentation of individual compartments will be provided in accordance with HTM 05-02 recommendations, with each sub-compartment having a minimum of two exits to adjoining but separate compartments or sub-compartments.

There is no progressive horizontal evacuation on the upper non-clinical floors, escape will be directly into stairs.

3.4 Suppression

The building contains a storey of over 30 metres (m) in height, and in line with standard guidance will be provided with an automatic sprinkler system in accordance with BS EN 12845 including the requirements set out in Annex F 'Additional measures to improve system reliability and availability'.

Areas in which sprinkler protection is not appropriate, such as rooms containing high voltage electrical equipment, will be assessed and the preferred protection strategy agreed with relevant Stakeholders.

3.5 Adjacency of fire hazards to patient areas

HTM provides guidance on the recommended adjacencies of fire hazards to patient areas, as a function of the patient dependency and hazard.

Fire hazards within the proposed building will generally be in line with HTM guidance, and provided with the HTM recommended fire precautions (fire resisting enclosure and automatic suppression).

There are limited deviations, e.g. the positioning of high dependency areas like operating theatres adjacent to the atrium, which have been reviewed to provide multiple layers of safety, so that adequate fire protection is afforded even if one protective feature does not function as intended.

Any deviations will be reviewed in detail as part of the detailed design development, and mitigation measures identified and agreed with relevant stakeholders. Until approval is achieved these remain an approvals risk.

3.6 Travel distances

Travel distances throughout the building will be assessed based on the use of spaces, using HTM 05-02 for clinical spaces and associated non-clinical accommodation, and AD B for non-patient areas, taking account of the compartmentation and sub-compartmentation provided on each floor, as well as the protection provided to the firefighting cores. The standard travel distance limits are summarised in Table 3.

Table 3: Travel distances with respect to different occupancies

Occupancy	Guidance Reference	Single Direction (m)	Multiple Direction (m)
In-patients	HTM 05-02	15	60*
Clinical non-patient areas (staff rooms)	HTM 05-02	18	60*
Office/Laboratories	ADB Vol. 2	18	45
Education	ADB Vol. 2	15	45
Plant	HTM 05-02	12	25
Low Risk Plant	HTM 05-02	25	35

Occupancy	Guidance Reference	Single Direction (m)	Multiple Direction (m)
Rooftop Plant	ADB Vol. 2	60	100
Atrium	HTM 05-03 Part M	15	45

3.7 Atrium escape

HTM 05-03 Part M states that a minimum of three exits are required from the atrium base, arranged such that at least two exits remain available in the event of a single fire. Both the travel distance limitations and the number of exits requirement will be achieved via escape through the main entrances, at opposing ends of the atrium.

Additional escape routes are provided via the A&E department and back of house areas.

3.8 Width of escape routes and holding capacity

Within departments where beds and patient trolleys are being moved, the width of the circulation spaces required for these activities is to be adequate for escape purposes, and associated holding capacity in the adjacent compartment.

In clinical departments and areas where beds or patient trolleys will not be used, the minimum clear width of escape routes should be:

- For up to 200 people – 1200mm; and
- For over 200 people – an additional 275mm for every additional 50 people

Occupancy calculations will be conducted during the fit-out design stage, for all floors, using HTM and AD B as appropriate.

The width of escape routes will be determined by the number of people who would normally be expected to use them in an emergency, based on information by the Trust for patient areas and floor space factors from relevant guidance in other areas.

3.9 Vertical escape stairs and evacuation lifts

The building has three protected escape stairs serving above ground levels, which, as per Table 2 of HTM 05-02 caters for a maximum of 200 patient beds on any one level, which is more than the expected number of beds on any one patient level.

The three firefighting stairs serve areas that may have dependent or very high dependency occupants and will be designed to be suitable for mattress evacuation, in accordance with Clause 3.53 HTM 05-02, and to accommodate assisted patient evacuation plus ambulant passing.

Therefore, the minimum dimensions for the stair and landing are listed below:

- Clear landing width – 3,400mm
- Minimum clear stair width – 1,600mm
- Minimum clear landing depth – 1,600mm

All stairways discharge via protected routes to outside. Any space (rooms or circulation corridor) that is located off these protected routes will be provided with lobbies.

An evacuation lift suitable for the vertical transportation of patients will be provided in each stair core, in line with the guidance in HTM 05-03: Part E, BS 9999 and HTM 08-02.

Occupancy calculations will be conducted during the fit-out design stage, for evacuation of the non-clinical areas on floors six to eight. The guidance on Width of Escape Stairs in Section 3 of ADB will be followed for simultaneous evacuation of these floors.

3.10 Final exits

Final exits will be provided from stair cores and the ground level will be step free. In some instances, people need to walk along the building façade before being able to walk away from the building; where that is the case the escape route will be protected with fire resisting construction so that the person can move away from the building in case of a fire immediately adjacent that elevation, in line with standard guidance.

3.11 Emergency lighting and signage

Emergency lighting will be provided in line with the recommendations of BS 5266-1 HTM 06-01 and CIBSE LG02, while emergency signage will be provided in line with the recommendations of BS 5499-4 and BS ISO 3864-1.

3.12 Power to life safety systems

All life safety systems will be provided with secondary power supply.

3.13 Internal fire spread (linings)

The fire performance of wall and ceiling linings within the development will conform to applicable guidance. In particular, linings within the clinical areas of the building designed to the following fire performance criteria:

- Class B-s3,d2 in circulation spaces
- Class C-s3,d2 in small rooms of area not more than 4m²
- Class B-s3,d2 in all other rooms

Within UCLH areas of the building, the following relaxations are permitted, in line with ADB recommendations:

- Class D-s3,d2 in small rooms of area not more than 30m²
- Class C-s3,d2 in other rooms

Within the atrium, the wall linings will need to achieve a fire performance of Class A2-s1,d0.

3.14 Structural fire resistance

As the building has a storey that is greater than 30 m in height, all loadbearing elements of structure shall have minimum 90 minutes (loadbearing (R)) fire resistance rating, in accordance with Table 5 of HTM 05-02. Further review will be undertaken to evaluate the fire performance expected for non-clinical levels.

As the roof supports an escape route (roof terrace and rooftop plant), structural fire protection is required to members that support the roof.

3.15 Compartmentation

Fire resisting construction, and compartmentation will be used throughout the building to separate storeys, departments, protect escape routes and enclose fire risk, separate the atrium, generally in line with current guidance.

Any deviations will be reviewed in detail as part of the detailed design development, and mitigation measures identified and agreed with relevant stakeholders. Until approval is achieved these remain an approvals risk.

3.16 External fire spread

As the building is greater than 18m in height and contains a sleeping risk it is a relevant building under Regulation 7 of the Building Regulations, and must comply with stringent regulatory requirements applicable to external walls of such buildings. Materials in the external wall, as well as specified attachments must achieve Class A2-s1, d0 or Class A1, with variations permitted only as set out in Building Regulation 7.

The development is bounded on two sides by single carriageway roads (St Pancras Way and Granary St) and access routes to the south and east. The “relevant boundary” for external fire spread, as defined by HTM 05-02, is:

- The centre line of a public road, river or railway;

- The site boundary; and
- A boundary agreed between buildings on the same site, with the same ownership; it is typically half-way between buildings.

As part of the design development, the fire spread risk to adjacent buildings will be evaluated in detail to determine what degree of protection is necessary to external walls such that the fire spread risk to adjacent buildings is controlled.

3.17 Roof covering materials

The roof covering materials will achieve the highest fire performance, B_{ROOF(t4)} in accordance with BS EN 13501-5.

Insulation materials used in the construction of the roof will achieve fire performance of Class A2-s3, d2.

3.18 Firefighting access and facilities

Fire brigade vehicle access routes will be provided to all four sides of the building via existing roads and access routes to the east and south of the building.

All fire brigade vehicle access routes will be designed in accordance with Table 10 of HTM 05-02. This is shown indicatively in Figure 3.

A Fire Control Centre (FCC) will be provided at the Lower Ground Floor, accessed directly off the fire brigade access route to aid coordinated incident management in the building.

The fire main inlets are to be located on the face of the building, within 90 m a fire hydrant and within 18 m and visible site of the fire appliance parking position. The fire main outlets will be within the firefighting lobbies.

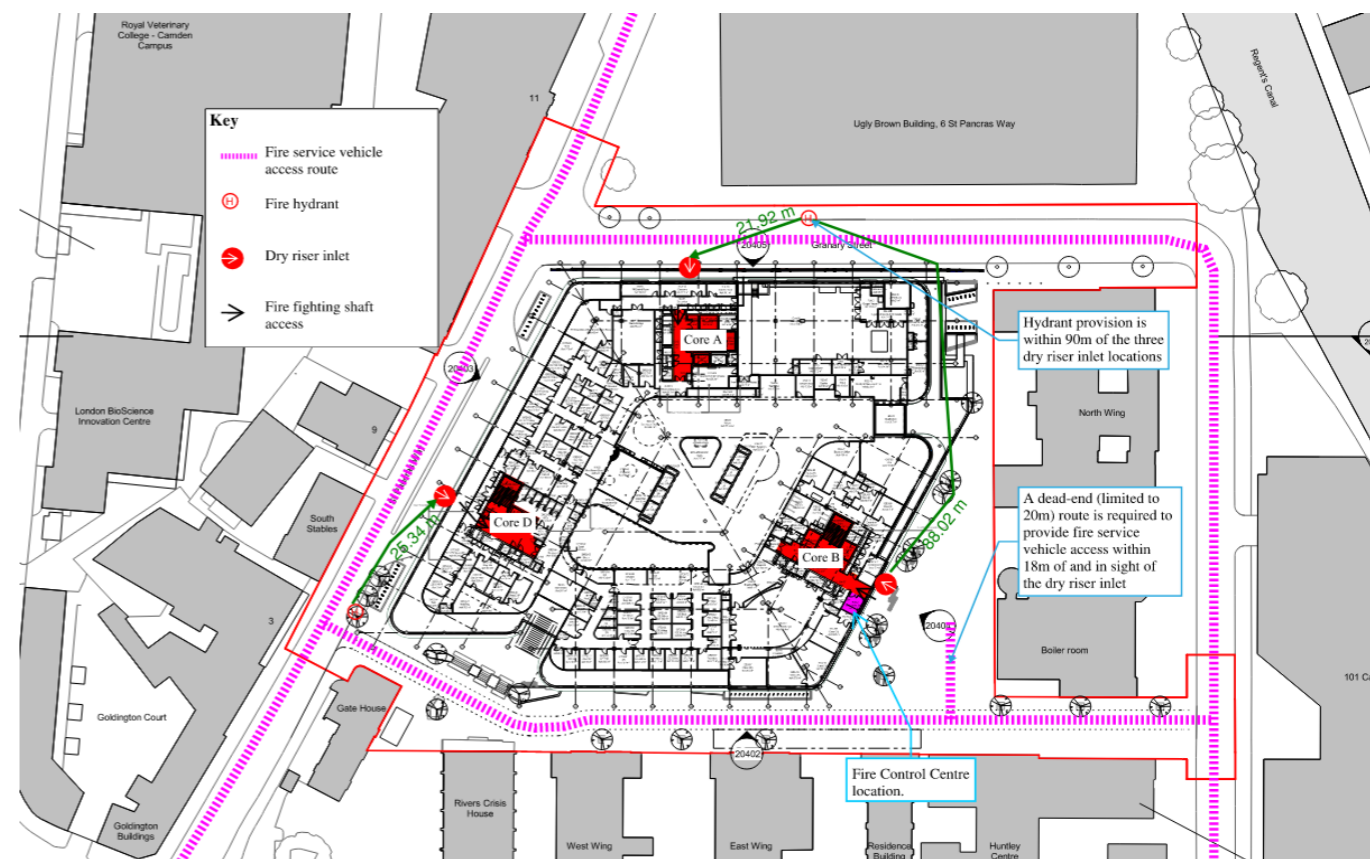


Figure 3: Fire service vehicle access

The building is provided with three firefighting shafts, when, for strict compliance with HTM 05-02 for a sprinklered development of this height and size, four would be expected. Each of the three cores has a firefighting lift and a separate evaluation lift, and is accessed directly from outside via a protected route that is lobbied from any adjacent accommodation.

The provision arises from the arrangement of the building around a central atrium with a central oriel providing connectivity vertically and horizontally.

The arrangement has been reviewed in detail, with compartmentation and sub-compartmentation being developed to enable firefighting access to all clinical areas within compliant hose reach distances, as well as coordination of the fire safety management response necessary to support adequate firefighting intervention.

The detailed provisions will be subject to further consultation and agreement with the London Fire Brigade, Building Control and the Trust Fire Officer.

There are limited instances at Lower Ground Floor and basement where layouts are under review to address hose coverage extensions; these areas are plant areas that are subject to a high degree of compartmentation and not generally occupied.

Each firefighting shaft will be designed to follow standard guidance, and will contain:

- Vented firefighting stair;
- Firefighting lift;
- Ventilated firefighting lobby; and
- Dry riser designed in accordance with BS 9990.

Firefighting lifts will be to BS EN 81-72 and to BS EN 81-1 or BS EN 81-2 depending on the particular type of lift.

3.19 Basement smoke venting

The basement and part of the Lower Ground Floor that is below ground provided with mechanical smoke ventilation providing 10 air changes per hour where areas are provided with sprinkler protection, in line with standard guidance. The areas may be zoned into smoke zones that align with compartmentation.

Where installation of sprinklers are not appropriate, e.g. in high voltage risk rooms, alternative design solutions will be developed as part of the detailed design development. Any deviations will be reviewed in detail as part of the detailed design development, and mitigation measures identified and agreed with relevant stakeholders. Until approval is achieved these remain an approvals risk.

3.20 Atrium smoke ventilation

The atrium will provided with a mechanical smoke clearance system for firefighting purposes in line with as HTM 05-03: Part M for an atrium higher than 18m.

The system will be designed to provide four replacement air changes every hour based on the total volume of the atrium, as the atrium base shall be sprinkler protected, with a combination of mechanical and natural make up air.

3.21 Fire strategy management assumptions

Regulation 38 of the Building Regulations requires fire safety information to be given to the Responsible Person at completion of the project when the building is first occupied, including management assumptions in the fire strategy – which the Trust will provide as a minimum. The following list highlights the key assumptions made in this Fire Safety Statement report:

- An evacuation management plan will be developed in accordance with the means of escape section of the fire strategy. Evacuation of the building will be well managed, with a written evacuation plan and clearly defined management procedures. These will practiced in drills and desktop exercises.
- Staff will be trained regularly to a high level of fire safety management and with an understanding of the fire evacuation strategy in place. This will be achieved by assigning floor wardens and regular drills in which the

necessary evacuation equipment is used. It is the responsibility of management to ensure that adequate numbers of trained staff will always be available and to devise suitable arrangements to provide for the safe evacuation of all relevant persons in accordance with the emergency evacuation plan.

- First aid fire points including extinguishers will be provided by the occupier as part of their FSO risk assessment.
- Management will need to ensure that storage is contained in dedicated spaces.
- Management will hold familiarisation visits with the fire service, and practice evacuation drills for different firefighting intervention scenarios.

Conclusion

This statement has outlined the fire safety strategy principles for the development. The fire safety features described herein will be further developed and incorporated into the design and specifications during the coordination and technical design stages.

As the design progresses formal consultation with the Stakeholders, will occur as part of the Building Regulations process. The purpose of consultation is to gain acceptance for the scheme proposals and the proposed methodology for demonstrating regulatory compliance is/ can be achieved.

Fire statement completed by	
Name	Judith Schulz (CEng)
Signature	
Date	06/04/2023

4. Fire Statement London Supplement

This document supplements the National Fire statement Policy, adding elements that are additionally referred to in the London Planning Policy D 5 (3) and D 12.

Address: St Pancras Hospital
4 St Pancras Way
London
NW1 0PE

Reference: N/A

Version: V1.0

4.1 Building's construction method, products and material use

Specify the construction method of the development and the measures that will be taken to limit any impact on the surrounding area. Construction methods that may impact on the fire safety provisions for neighbouring sites, buildings, occupants etc. must be identified and the risk reduced using suitable control measures. Building methodologies that pose a high risk of fire must also be identified within the fire Statement with suitable control measures detailed.

The loadbearing structure of the building is predominantly made from reinforced concrete, with the bridge connections to the oriel being constructed of steel, i.e. non-combustible materials.

The hospital building has a top storey height greater than 18m and is defined as a relevant building under Regulation 7 of the Building Regulations. This means that materials that form part of the external wall or specified attachment are to achieve A2-s1, d0 or better when classified in accordance with BS EN 13501-1, unless forming part of permitted exemption provided in Regulation 7(3) of the Building Regulations.

Roof coverings are to achieve a B_{ROOF(14)} classification and all roof insulation materials are to be of limited combustibility and achieve a performance of at least Class A2-s3, d2.

Internal wall and ceiling linings are to be in accordance with HTM 05-03 requirements within the clinical areas of the building and with ADB requirements in the UCLH areas. See Section 3.13 for further information.

4.2 Means of escape for all building users and evacuation strategy

(D12: 3.12.2, 3.12.5, 3.12.7, A4, B2)

Detail how the chosen code of practice (ADB, BS 9999, BS 9991 etc. have not only been applied/adhered to.

The fire strategy has been developed based on HTM: 05-02 and the standard referenced. The development was also guided by Approved Document B (ADB)

For non-clinical areas in the building a simultaneous evacuation shall take place on detection of fire anywhere in the building.

Within the clinical areas of the hospital building, a progressive horizontal evacuation strategy shall be adopted, whereby patients are moved from an area affected by fire through a fire-resisting barrier to an adjoining area on the same floor, designed to protect the occupants from the immediate dangers of fire and smoke. The patient floors are heavily divided into compartments, each provided with multiple exits, to enable dynamic response to a fire incident, enabling persons to move away from a risk area to an adjacent protected space, or from there to a stair, if needed.

If safe, occupants may remain there until the fire is extinguished fully or they may await further assisted onward evacuation by staff to another adjoining area or to the nearest stairway or final exit.

To facilitate progressive horizontal evacuation, a Category L1 fire detection and alarm system, shall be installed throughout all parts of the building, designed, and installed in accordance with BS 5839-1 and HTM 05-03: Part B. The system shall be zoned to align with the compartmentation and evacuation strategy. Voice alarm is also to be provided to support progressive horizontal evacuation.

In accordance with the London Plan, one evacuation lift shall be provided per core, which is a separate lift to the firefighting lift. All escape lifts will be designed to comply with the guidance in HTM 05-03: Part E, BS 9999 Annex G and HTM 08-02 Lifts.

How the proposals have sought to exceed those minimum standards of the chosen code of practice.

The fire safety strategy is developed to provide multiple layers of protection to occupants and their escape routes, enabling them to make their way to an interim place of safety within the building on the patient floors, or out of the building using either a stair, or lift for person with restricted mobility (PRM).

The circular arrangement of the building enables this progressive movement from compartment to compartment, to stair, to outside, as needed.

The central oriel is not relied upon for escape from the adjacent accommodation in the strategy; occupants from the oriel can move down the circulation stair or into adjacent compartments horizontally as is most suitable in the respective incident.

The design considers implications of failure of protective layers, and implications of that on the safety of occupants in the building, so that in case of failure of one safety system there remains adequate protection available for persons to either move on to another safe space, or make an exit to the outside.

The building is provided with a central control room to enable coordinated response in case of an incident.

4.3 Passive and active fire safety measures

(D12: B3)

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

Passive system

Fire stopping is used for every join or imperfection so that the fire resistance of the element is not impaired. Guidance on the design of passive fire protection is in accordance with 'Ensuring best practice for passive fire protection in buildings' produced by the Association for Specialist Fire Protection (ASFP).

Fusible link fire dampers conforming to BS EN 15650 and have an E classification shall be used for any ductwork. The minimum rating of the fire dampers shall be 60 minutes or greater if required by the fire resistance requirements of the construction the ductwork is penetrating.

In accordance with HTM 05-02, the elements of structure are required to achieve 90-minutes fire resistance in terms of loadbearing capacity. Where structure supports an element of construction that has a higher level of fire resistance (e.g. the firefighting shafts), the element of structure shall achieve the higher period of fire resistance for loadbearing, integrity and insulation

Active System

A Category L1 fire detection and alarm system, shall be installed throughout all parts of the building, designed and installed in accordance with BS 5839-1 and HTM 05-03: Part B. The system shall operate on double-knock, whereby operation of one detector will send an alert to the fire alarm panel, prompting the building management to investigate. The investigation period will need to be agreed with the stake holder

An automatic sprinkler system is to be installed and maintained throughout the building in accordance with BS EN 12845 including the requirements set out in Annex F 'Additional measures to improve system reliability and availability'.

The atrium shall be provided with a mechanical smoke clearance system for firefighting purposes in accordance to HTM 05-03: Part M Clause 4.91.

In accordance with BS 9999:2017 Clause 37.2.3.3, a secondary power supply will be provided to all life safety systems in the proposed redevelopment, including (but not limited to) the following:

- Smoke clearance systems – mechanical ventilation for firefighting shafts and basement smoke clearance system.

- Firefighting and evacuation lifts.
- Emergency lighting.
- Fire control centre (FCC) systems.

4.4 Assembly points

(D12: 3.12.4 A1 a, b)

A site plan should show appropriate evacuation assembly points. These spaces should be positioned to ensure the safety of people using them in an evacuation situation.

Assembly points are not mentioned directly in Approved Document B to the Building Regulations – however some referred to guidance discusses them such as Building Bulletin 100 for schools.

There are currently no agreed assembly points for the Development. A suitable assembly point will need to be agreed with the hospital trust that satisfy the following requirements:

- Assembly points should be located sufficiently far from the premises to minimise interference with the fire and rescue service or danger from falling debris but should be accessible for all building occupants (i.e., including PRMs) and not so far away to discourage people from assembling.
- The proposed assembly points should avoid the use of roads and are situated in areas predominantly used by pedestrians.

These locations are to be further coordinated with the design team during the detailed design stage and will be discussed and agreed with LFB.

4.5 Access and facilities for the fire and rescue service

(D12: 3.12.3, A1a A1b, A6, B4, and B5)

Outline management plan for the ongoing maintenance of these provisions.

The site is provided with features to support internal firefighting access via firefighting shafts, in line with BS 9991:2015 and London Fire Brigade Guidance Note 29.

Fire service vehicle access will be available at via St Pancras Way and Granary Street. Existing hydrants are located within 90m of the dry riser inlet.

A Fire Control Centre is provided to support firefighting operation and be staffed by a competent person, familiar with the use and operation of the installed equipment, while the building is occupied.

The firefighting core is provided also with a dry rising main to serve above Lower Ground Floors (inclusive of lower ground floor), with inlets provided in line with guidance. All three firefighting shafts will be accessible through a protected entrance corridor (120 minutes fire-resisting construction) less than 18 m in length.

4.6 Site access for the fire and rescue service

(D12: B4) Requirements additional to Building Regulations

Demonstrate how all the provisions for emergency access to the site by the fire and rescue service above provisions do not adversely impact on neighbouring sites and access to the surrounding areas.

The site can be accessed via St Pancras Way and Granary Street. The entrance to the firefighting shafts is accessed via Lower Ground Floor for Core D from St Pancras Way and on Upper Ground Floor for Core A and Core B from Granary Street. Fire Vehicle access is provided to within 18m of, and in sight of the dry riser inlets for the three firefighting shafts

All areas of the Development are accessible within 60m of the road on a path suitable for laying a hose.

4.7 Evacuation lift

(D5 (B5) 3.12.8) Requirements additional to Building Regulations

Provision of evacuation lifts (as distinct to Fire-fighting lifts)

In line with the London Plan policy D5 (B5), an evacuation lift is provided to all three firefighting shafts serving in the Development. This shall be a separate lift to the firefighting lift.

The evacuation lift will be specified as a second fire-fighting lift and will be provided with standby power supply, water ingress protection and suitable controls; this provides additional resilience during periods of maintenance of lifts. The lift is protected by several layers of active and passive safety features so that should be able to continue to operate in case of a fire.

Management procedures should be implemented for the use of evacuation lifts in the event of a fire. These procedures could allow the use of both the firefighting lift and evacuation lift for evacuating occupants prior to fire service arrival. Management should then co-ordinate with the fire service upon their arrival for evacuating remaining patients. Having both lifts in each core also allows a lift to be available if one lift is out of action due to maintenance issues.

4.8 Aspirational objectives

(D12: 3.12.1) 8) Requirements additional to Building Regulations

Development agreements, development briefs and procurement processes should be explicit about incorporating and requiring the highest standards of fire safety.

The development is being designed in accordance with the latest edition of the Building Regulations 2010 (as amended).

4.9 Future development of the asset of the 'Golden Thread' of information

(D12: B3, A5) Requirements additional to Building Regulations

London Plan Policy D12(B) part 6 requires applicants to consider how, if the proposed asset was to be redeveloped in the future, the fire strategy and the protective measures within the asset would not be compromised. This may be presented in the form of a professional statement from the author identifying the constituent elements of the building that, if modified, may adversely affect the original fire strategy.

The fire safety strategy report will include a statement making clear that any changes to the building(s) should be reviewed by a competent fire safety engineer, to determine whether desired changes affect the fire safety strategy and if so, how those impacts are mitigated to maintain highest fire safety standards. In this way, others can refer back to the justifications when assessing whether changes will impact on the fire strategy.

As the design progresses, the client will be advised on the documents which are expected to form part of the 'Golden Thread', including options to include fire safety information within BIM to allow important information to be tracked through the design and construction phases of the project and ultimately handed over to the accountable and responsible person.

The Fire Statement submitted for Planning forms one of those documents.

It is anticipated that the information from the Fire Statement will be used to inform the overall fire strategy for the development. When adopting information from the Fire Statement into the Fire Strategy, consideration should be given to the accuracy and relevance of the information to ensure the build is as per the design. A handover process for the passing of all relevant fire safety information contained within the fire statement to the building owner should be planned and, where possible, outlined within the Fire Statement.

It is the responsibility of the Principal Designer and Principal Contractor as defined under CDM 2015 to compile the necessary information on fire safety, as required as part of the health and safety file under Regulation 38.

The requirements of Regulation 38 will be described in the fire strategy for the Principal Director and Principal Contractor to take forward.

4.10 Avoid conflict of fire safety and security measures

(D12: 3.12.10) 8) Requirements additional to Building Regulations

Describe the development intent that Fire safety and security measures will be considered in conjunction with one another, in particular to avoid potential conflicts between security measures and means of escape or access of the fire and rescue service.

There are certain areas such as specialist laboratories where doors are locked for security reasons. These doors are fitted with fail secure locks but can be unlocked from the inside to allow evacuation. Specific operational policy for firefighting access will be discussed and agreed with LFB. The fire service should have access to all parts of the development and the occupants should be able to evacuate without encountering locked doors. Doors will be provided with override where they are electromagnetically locked.


4.11 Measures to ensure existing buildings are safe

(D12: 3.12.11) 8) Requirements additional to Building Regulations

Survey and consider whether any aspect of the new development will affect existing buildings.

Indicate any provisions that are to be put in place as a matter of priority, to avoid such conflicts that it has been identified that no such issues will arise in consequence of the development.

An assessment has been undertaken to determine whether there is a risk of external fire spread between the Development and the neighbouring buildings. The assessment has been conducted using industry recognised methods. Where necessary, steps will be taken to minimise the risk of external fire spread between the development and neighbouring buildings. Any areas where this is necessary will be determined as the design progresses.

Fire statement completed by	
Name	Judith Schulz (CEng)
Signature	
Date	06/04/2023

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