

Fire Statement

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01	07.07.2021	For information	KP 07.07.21	RH 09.07.21	MD 15.07.21
02	27.07.2021	Update based on revised drawings	KP 27.07.21	RH 10.08.21	RH 10.08.21
03	19.08.2021	Planning submission update	KP 19.08.21	RH 19.08.21	RH 19.08.21
04	17.11.2021	Update based on revised site boundary	KP 17.11.21	RH 17.11.21	RH 17.11.21

1 Introduction

The following outlines the fire safety design intent to address the requirements of the new London Plan 2021. At its core, the London Plan aims to ensure the highest levels of fire safety are provided to new and refurbished buildings and to maximise building resilience in line with best practice.

The following demonstrates that the scheme has been designed to incorporate appropriate features which reduce the risk to life and serious injury in the event of a fire. The project will include appropriate passive and active fire safety measures, together with suitable means of escape and access and facilities for firefighting.

2 Basis of design

With respect to addressing the functional requirements of Parts B1-B5, the design draws on the framework from BS 7974 to establish a disciplined approach to the fire safety design. BS 7974 provides the framework for a flexible but formalised methodology that can be readily assessed by the statutory authorities. To this end, the design will draw on prescriptive standards, best practice, and engineering judgement to deliver a safe and functional solution in accordance with Part B of the Building Regulations and Policy D12 of the London Plan.

3 Competency

The fire strategy for the building has been prepared by Sweco, one of Europe’s largest engineering consultancies with an extensive track record of providing fire safety consultancy services for large-scale residential, commercial and mixed-use developments across the UK and internationally.

The individuals involved in the development of the strategy hold relevant Master’s and Honours degrees and are Members or Associates of the Institute of Fire Engineers. The work is overseen by a Technical Director and is subject to internal review as part of Sweco’s quality assurance procedures.

The assessment below has been provided in line with London Plan Policy D12(B).

4 Building construction methods/materials

The superstructure of each building will be concrete construction. Construction materials will be selected to meet the relevant regulations.

5 Development Proposal

The site comprises three residential blocks over a basement level. Two blocks will be three storeys high (9m) and one block will be two storeys high (6m). Two additional small buildings are also located on the site (Barnes cottages containing two duplex apartments and Entrance Lodge containing one apartment and residential amenity). The basement is approximately 1700m² in area comprising of plant, cycle storage and carparking spanning under two of the residential blocks (A and B).

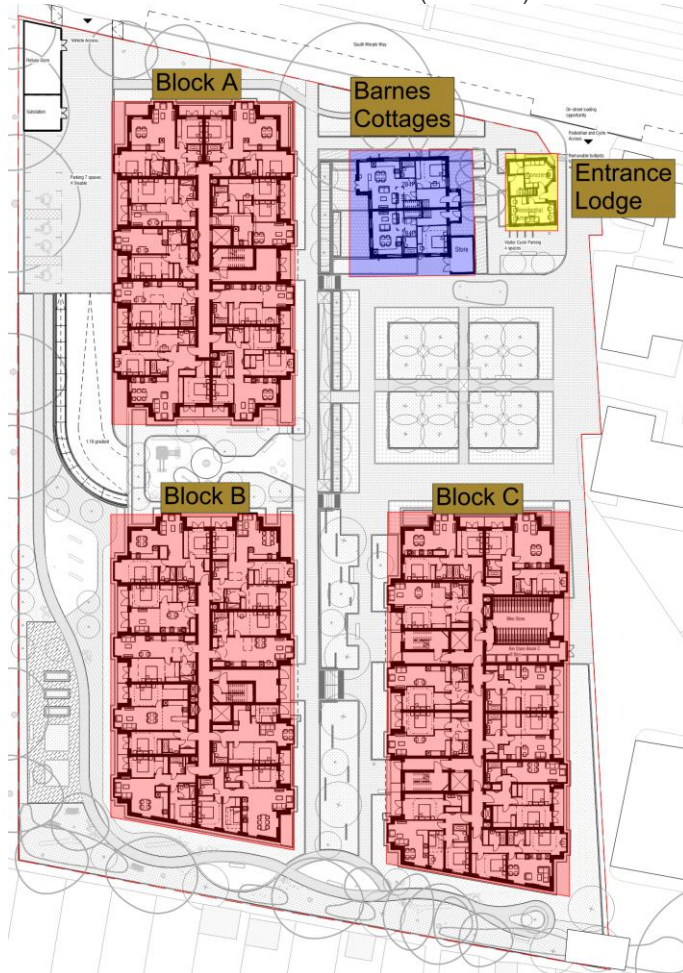


Figure 1: Site plan with the labelled proposed buildings.

6 Package of fire protection measures

The following fire protection measures will be provided:

- Automatic fire detection (BS 5839-6 category LD1 in apartments and BS 5839-1 category L2 in non-residential areas)
- Automatic sprinkler protection (EN 12845 Ordinary Hazard 3 in non-residential and BS 9251 category 2 in the residential blocks A and B)
- Emergency lighting (BS 5266)
- Emergency power supplies to critical life safety plant
- Mechanical smoke control measures (BS 9999)
- Basement to be primarily naturally ventilated, with storeroom being ventilated mechanically.

The items above will be subject to regular inspection and maintenance in line with the suppliers' recommendations and overseen by the responsible person as defined under the Regulatory Reform (Fire Safety) Order.

7 Means of escape

Residential areas will adopt a 'defend in place' evacuation strategy. This is founded upon the fire protection measures and a high degree of compartmentation. Communal areas and non-residential areas will evacuate simultaneously on fire detection within the respective building.

The flats are provided with protected internal corridors with the means of escape from within the corridor not exceeding 9m.

Open plan apartments are provided in the scheme. Travel distance within the apartments will be limited to 20m. The design will be validated through CFD analyses and will be provided with category LD1 fire alarm and detection and sprinkler protection.

Common residential travel distances will not exceed single travel distance of 7.5 and two-way travel of 30m in Block C, and single travel distance of 15 and two-way travel of 60m in Block A and B.



Figure 2: Ventilation provisions

The above figure shows the ventilation provisions for Barnes Hospital. Blue being the mechanical smoke ventilation shafts, blue arrows showing indicative air flow and red highlighting the ventilated portions of the corridors. The left image illustrates Blocks A and B in line with figure 6b of BS 9991 and the right images shows Block C in line with the arrangements of figure 6a of BS 9991.

8 Inclusive Design

A combined passenger / evacuation lift will be provided by each stair core which will be used to augment the evacuation strategy. This is in addition to the normal escape stairs provided and is primarily to assist with disabled evacuation as part of a managed strategy. The lift will generally comply with the recommendations of BS 9999, BS EN 70, and BS EN 81-73.

9 Internal fire spread

Under BS 9991, the minimum period of fire resistance for elements of structural based on the height of the building and risk profile is **60 minutes**.

Residential levels will be designed with compartment floors therefore escape stairs, lift shafts and risers will be designed as protected shafts.

In addition, each residential unit will be designed as a separate compartment minimising the potential for fire spread.

10 External Fire spread

There is no restriction on external wall build up; however, Class B-s3, d2 is recommended and the provisions for “relevant buildings” will be considered with all insulation being Class A1/A2 under EN 13501-1.

The main roof and terraces will be designed to achieve a B_{ROOF}(t4) classification under BS EN 13501-5.

External fire spread to the relevant and relative boundaries has been assessed using the enclosing rectangle method in accordance with BRE 187.

11 Access and facilities for fire fighting

Access will be provided for a pumping / high reach appliance within 18m of dry riser inlets at ground floor. Firefighting operations will be facilitated via escape stairs.



Figure 3: Site plan illustrating fire service vehicle access routes in green. Escape stairs are indicated in red, and firefighting access in blue.

12 Future development of the asset

Any future development should consider the complete package of fire protection measures. The fire strategy needs to be considered holistically and alterations to any aspect of the design requires careful validation by a suitably qualified fire engineer.