PADDINGTON GREEN
POLICE STATION

Fire Statement (London Plan Requirements)

Fire Statement (London Plan Requirements) - January 2023 - GLA0711 AMND Rev 01
January 2023

January 2023

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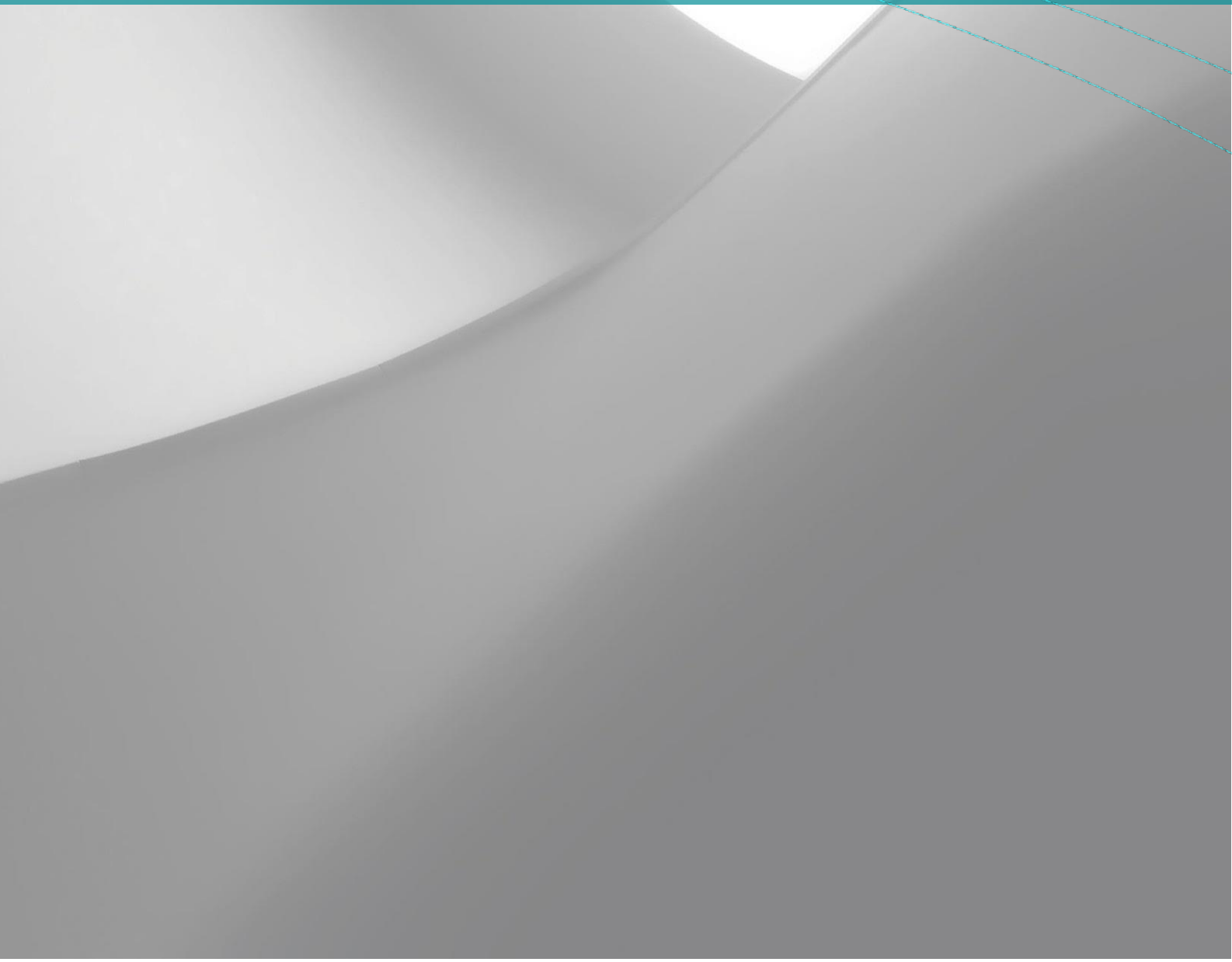
PGPS- Blocks I, J and K

Fire Statement – Requirements for London Plan 2021



Project Name	Paddington Green Police Station, Block I, J and K
Proposal Title	Fire Statement – Requirements for London Plan 2021
Description	London Plan 2021 Requirements
Ref. No.	BER-PGP–FST-01
Issue	01
Revision	03
Date	06 January 2023
Prepared by	Ella Leslie
Reviewed by	Kieran Davies
Approved by	Holy Liang/Jianqiang Mai
Revision 3	GLA comments addressed

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1 Overview

1.1 Project Information

This fire statement has been prepared for inclusion in the planning application for the following project and signed off by our qualified fire consultant.

Project Address	Paddington Green Police Station – Blocks I, J and K, London W2
Authors Name	Jianqiang Mai
Authors Signature	*J Mai*
Date	27/10/2022

1.2 Fire Consultant

This report has been prepared by Dr Jianqiang Mai, Associate Director of AESG UK Fire Engineering Division.

Dr Mai has Over 20 years of experience in fire engineering and related services. He specialises in fire safety strategy development and is skilled in performance-based design using fire dynamics, fire modelling and evacuation modelling. He is also skilled in using Eurocodes 1, 2, 3, and 4 for structural fire engineering analysis, fire & smoke movement and smoke control modelling.

The London Plan 2021 places minimum requirements on qualifications, memberships and experience of individuals permitted to produce a Fire Strategy Statement. Dr Mai meets this criterion, a summary of his qualifications and experience is summarised in Table 1.

Table 1: Fire consultant qualification summary

Qualifications/Experience	
Chartered Engineer?	Yes - (CEng)
Member of Institute of Fire Engineers?	Yes - (MIFireE)
Fire Engineering Experience?	Yes - 20 years +
Additional Qualifications/Experience	
Additional Qualification - 1	BEng, Hydraulic Machinery
Additional Qualification - 2	MEng, Fluid Machinery
Additional Qualification - 3	PhD, Mechanical Engineering

1.3 Fire Safety Assessment

The document has carefully considered the relevant fire safety policies contained within the London Plan 2021. A summary has been provided in Table 2.

Table 2: Policy summary

Policy Number	Description
Policy D5, Subsection B5	In all developments where the lifts are installed, a minimum of one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift.
Policy Number	**Description**
Policy D12, Subsection A1, (a)	Identify suitably positioned and unobstructed outside space for positioning of fire appliances.
Policy D12, Subsection A1, (b)	Identify suitably positioned and unobstructed outside space appropriate for use as an assembly point.
Policy D12, Subsection A2	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.
Policy D12, Subsection A3	The building must be constructed in an appropriate way to minimise the risk of fire spread.
Policy D12, Subsection A4	Provide suitable and convenient means of escape, and an associated evacuation strategy for all building users.
Policy D12, Subsection A5	Develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in.
Policy D12, Subsection A6	Provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.
Policy Number	**Description**
Policy D12, Subsection B1	Building's construction: methods, products and materials used, including manufacturers' details.
Policy D12, Subsection B2	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.
Policy D12, Subsection B3	Features which reduce the risk to life: fire alarm systems, passive/active fire safety measures and associated management and maintenance plans.

Policy D12, Subsection B4	Access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these.
Policy D12, Subsection B5	How provision will be made within the curtilage of the site to enable fire appliances to gain access to the building.
Policy D12, Subsection B6	Ensure that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.

1.4 Aspirational Objectives

The proposed buildings will be designed in accordance with the latest relevant guidance in order to support the safety and wellbeing of the occupants intended to use it. A clear fire strategy will be provided so that all parties associated with the design and/or construction are certain of the standards that must be achieved throughout the project. Deviations from the strategy such as alternative materials or techniques will not be permitted without consent from the relevant fire engineer, relevant building control body and the fire service. All parties associated with the project are expected to maintain the highest levels or workmanship at all times.

The design intends to provide a safe environment for occupants to live. The objective of the strategy is to ensure a minimum level of fire risk to the building users, contain a fire if it were to occur and, if required, provide safe routes for occupants to escape to a place of ultimate safety.

Reliance on a single measure to achieve these goals could make the strategy vulnerable should that measure fail to perform as intended. As such, the design intends to ensure that multiple measures are provided to maintain safety at all times.

The strategy ensures that emergency services can access the entrance point and all areas within the building without undue delay or complication. The objective is to allow fire service personnel a clear route to reach a fire compartment and conduct firefighting operations.

The strategy considers the surrounding area, adjacent buildings and public areas which are located around the site boundary. A combination of internal compartmentation, smoke ventilation, and protection to external walls will prevent fire from spreading throughout the building or to neighbouring sites.

The intention of the fire statement, fire strategy and the associated fire safety information is to provide detailed information which must be retained for the lifecycle of the building and referred to should any further works take place.

2 Introduction

2.1 Scope

AESG has been appointed by Berkeley Group to produce a Fire Statement in order to support the planning application for Blocks I, J and K of the Paddington Green Police Station development in Marylebone, London.

This Fire Statement demonstrates that the requirements of Chapter 3, Policy D5 and D12, as detailed in the London Plan 2021, have been carefully considered as part of this application process.

This Fire Statement provides a summary of the proposed fire and life safety measures which will be incorporated into the design and should be retained as part of Gateway One and the golden thread of information.

A Fire and Life Safety (FLS) Strategy report will be produced separately and submitted to an appropriate Building Control body or Approved Inspector for approval. The Fire and Rescue Service will also be consulted as part of this process.

The FLS Strategy relates to the design and construction stage of the project and must be retained by the building owner/responsible person as part of the Gateway Two requirements. The FLS Strategy will be reviewed and updated throughout each RIBA Stage (RIBA Stage 2, RIBA Stage 3, and RIBA Stage 4) and are not required to be submitted as part of the planning application.

2.2 Gateways and the Golden Thread of Information

The government has created a gateway system to ensure that building safety risks are considered at planning, design, construction, and pre-occupation stages of a project. Information gathered at each gateway will be stored and retained for the life cycle of the building.

All three Gateways are intended to create ‘golden thread’ of information about a building, ensuring the right information is available to the right people, at the right time.

This report relates to the planning stage of the project and must be retained by the building owner/responsible person as part of the Gateway One requirements.

2.3 Additional Fire Safety Consultation

In addition, a Fire and Life Safety (FLS) Strategy will be produced which demonstrates how the design intends to comply with the functional requirements of Part B - Schedule 1 of the Building Regulations 2010 (as amended in 2018):

B1 - Means of warning and escape.

B2 - Internal fire spread (linings).

B3 - Internal Fire Spread (structure).

B4 - External Fire Spread.

B5 - Access and facilities for the Fire and Rescue Service.

The FLS Strategy will be produced separately and submitted to an appropriate Building Control body or Approved Inspector for approval. The Fire and Rescue Service will also be consulted as part of this process.

The FLS Strategy will be developed during the next stages, RIBA Stage 2, RIBA Stage 3, and RIBA Stage 4 of the project and are not required to be submitted as part of the planning application. All fire strategy documents will be submitted for approval at the conclusion of each RIBA design stage.

2.3.1 RIBA Stage 2

The RIBA stage 2 fire strategy has been issued for comment. The report outlines all the key safety principles and systems requirements for Blocks I, J and K.

2.3.2 RIBA Stage 3

As the design develops through RIBA Stage 3, an updated fire strategy will be completed to ensure that all fire safety principles and systems achieve the functional requirements of the building regulations. The building is designed using standard guidance documents in this instance Draft BS 9991 and BS 9999:2017. Where any of the aspects of design do not comply with current guidance, suitable mitigation and/or fire engineered solutions in accordance with BS 7974 will be used to justify any non-code compliant issues.

2.3.3 RIBA Stage 4

The RIBA stage 4 fire strategy will be the final fire strategy to be completed, which is the last stage of design and therefore ensures the fire strategy is in accordance with the most updated designs and all outstanding fire safety principles must be resolved in line with guidance, ready for construction.

2.4 Primary Legislation

The Fire Statement takes into account the overall package of fire safety measures incorporated within the design. Its intention is to establish clear fire safety objectives and performance requirements in order to achieve them.

British Standard 9991:2021 Draft Fire Safety in the design, management and use of residential buildings, code of practice, is the primary document used to ensure that the overall fire safety solution for the building is adequate.

During the design development stage of the project any deviations from the prescriptive recommendations will be assessed as part of a fire engineered approach. All fire engineered solutions will be justified by following the general methodology proposed within British Standard 7974 - Application of fire safety engineering principles to the design of buildings.

2.5 Source of Information

Berkeley Group has provided AESG with the drawings listed in Table 3. It is understood that these are the latest set of drawings, dated October 2022, and accurate at the time this report was written. As such, the Fire Statement has been based on the drawings listed in Table 3.

Table 3-Drawing List

Block	Drawing Number	Description	Architect
I	801(P09)	Level 1-13	Squire & Partners
	802(P07)	Level 14-23	Squire & Partners
	803(P04)	Level 24	Squire & Partners
J	850(P05)	Level 1-15	Squire & Partners
	851(P04)	Level 16	Squire & Partners
K	900(P03)	Level 01	Squire & Partners
	901(P02)	Level 2	Squire & Partners
	902(P06)	Level 3-11	Squire & Partners
	903(P02)	Level 12	Squire & Partners
	904(P04)	Level 13-16	Squire & Partners
	905(P04)	Level 17-29	Squire & Partners
	906(P04)	Level 30-33	Squire & Partners
	907(P04)	Level 34-37	Squire & Partners
	908(P04)	Level 38	Squire & Partners
I, J and K	2003(P09)	Ground floor	Squire & Partners
I, J and K	1103(P012)	Basement 1	Squire & Partners
I, J and K	1102(P05)	Basement 2	Squire & Partners

3 Development Description

3.1 Paddington Green Police Station Development

The Paddington Green Police Station site will be is located in Marylebone, London. It is adjacent to the West End Gate development and forms part of the overall masterplan. The design intent for this project is to construct 3 new mixed used blocks, identified as Block I, Block J and Block K. A site map of the development highlighting Blocks I, J and K is illustrated shown in .

Figure 1-Site Map

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Figure 1-Site Map

3.2 Blocks I, J and K Description

Each block consists of commercial units located on ground floor and residential areas on all other floors. Blocks I, J and K also share 2 common basement levels which contains ancillary and amenity areas. This fire statement relates to the shared basements of the development and Blocks I, J and K.

A summary of the blocks is illustrated in can be found in Table 4.

Table 4: Summary of Blocks I, J and K

Block Number	Number of floors	Building Height
I	24 Storeys	78.3 m
J	17 Storeys	55.65 m
K	39 storeys	128 m

3.2.1 Private Residential Dwellings - Block I

Block I will have a total of 149 residential units. Block I is provided with a firefighting shaft containing a firefighting stair and a fire main. The firefighting shaft will also contain two lifts. One lift will be designed as an evacuation lift and the other designed as a firefighting/evacuation lift. The design also incorporates an additional protected escape stair serving all floors above ground. A summary of the different unit types at each level is shown in Table 5. Figure 2 is a typical dwelling unit arrangement layout within Block I.

Table 5: Summary of Residential Units in Block I

Floor	Number of units	Unit Type
Level 1-14	98	42 × 1 Bedroom 42 × 2 Bedrooms 14 × 3 Bedrooms
Level 15-22	48	16 × 1 Bedroom 16 × 2 Bedrooms 16 × 3 Bedrooms
Level 23	3	3 x 4 bedrooms

Figure 2: Block I- Typical Dwelling Unit Layout

3.2.2 Private Residential Dwellings - Block J

Block J will have a total of 98 residential units. Block J is provided with a firefighting shaft containing a firefighting stair and a fire main. The firefighting shaft will also contain two lifts. One lift will be designed as an evacuation lift and the other designed as a firefighting/evacuation lift. A summary of the different unit types at each level is shown in Table 6. Figure 3 portrays a typical dwelling unit layout within Block J.

Table 6: Summary of Residential Units in Block J

Floor	Number of units	Unit Type
Level 1-3	18	9 × 2 Bedrooms 9 × 3 Bedrooms
Level 4-14	66	33 × 2 Bedrooms 33 × 3 Bedrooms
Level 15-16	14	6 × 1 Bedroom 2 x 2 bedrooms 4 × 3 Bedrooms 2 x 4 bedrooms

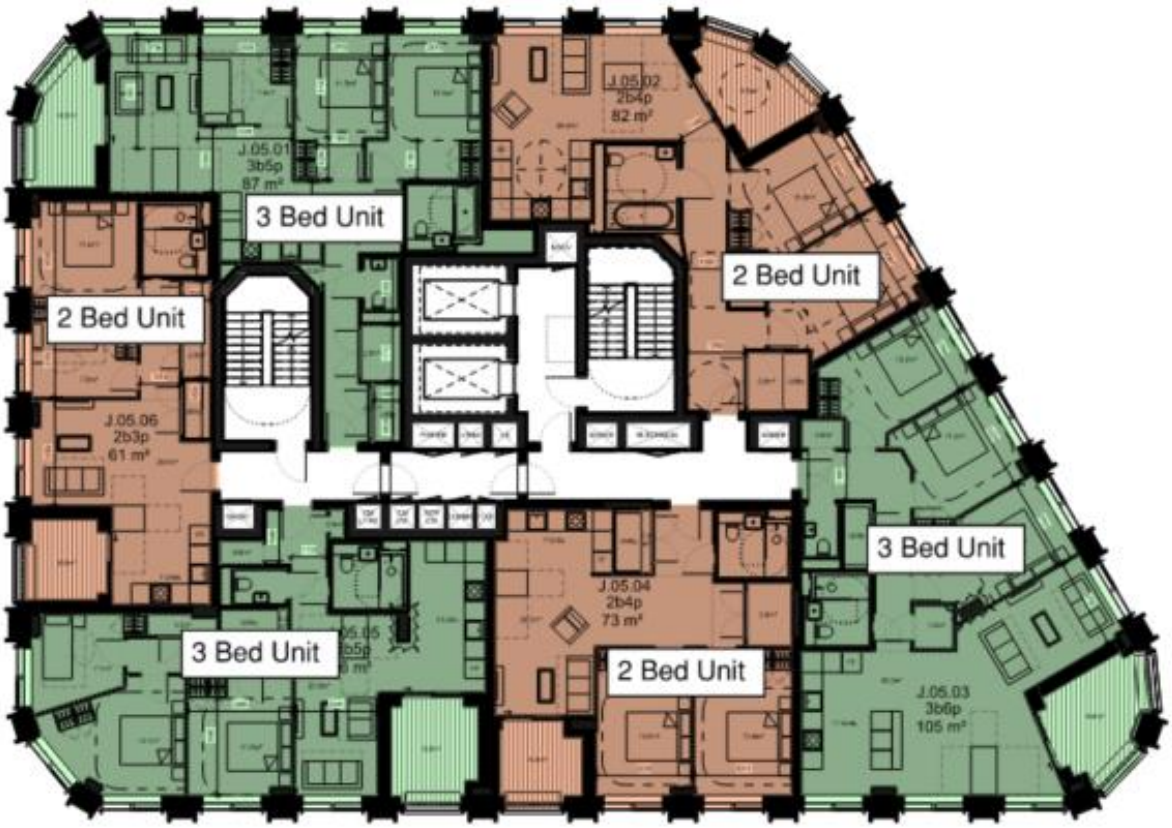

Figure 3: Block J - Typical Dwelling Unit Layout

3.2.3 Private Residential Dwellings - Block K

Block K will have a total of 309 residential units. Block K is provided with two firefighting shafts containing a firefighting stair and a fire main. Each firefighting shaft will also contain two lifts. One lift will be designed as an evacuation lift and the other designed as a firefighting lift. A summary of the different residential units at each level is shown in Table 7. Figure 4 illustrates a typical dwelling unit layout within Block K.

Table 7:- Summary of Residential Units in Block K

Floor	Number of units	Unit Type
Level 1	7	5 × 1 Bedroom 2 × 2 Bedrooms
Level 2	11	7 × 1 Bedroom 4 × 2 Bedrooms

Level 3-11	99	63 × 1 Bedroom 36 × 2 Bedrooms
Level 12	10	6 × 1 Bedroom 3 × 2 Bedrooms 1 × 3 Bedrooms
Level 13-16	40	24 × 1 Bedroom 12 × 2 Bedrooms 4 × 3 Bedrooms
Level 17-29	91	13 × 1 Bedroom 52 × 2 Bedrooms 26 × 3 Bedrooms
30-33	24	8 × 2 Bedrooms 16 × 3 Bedrooms
Level 34-37	24	8 × 2 Bedrooms 16 × 3 Bedrooms
Level 38	3	3 x 4 Bedrooms

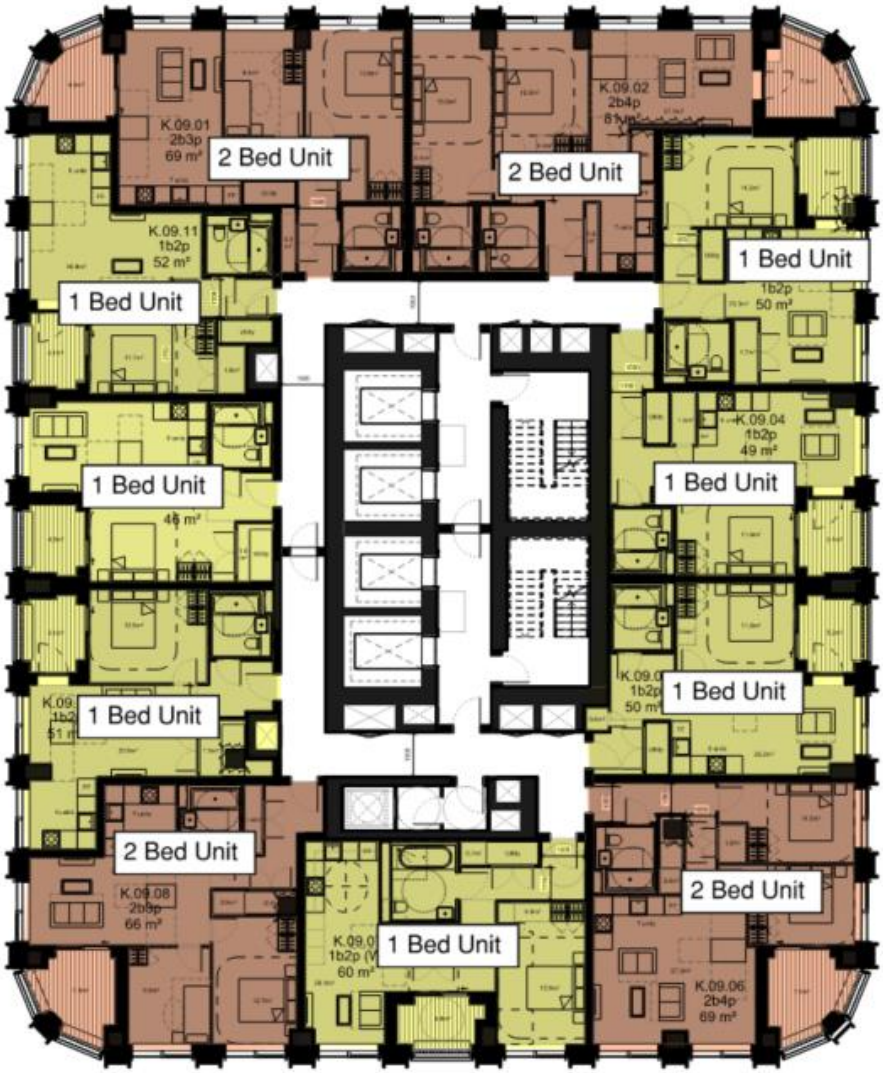

Figure 4: Block K - Typical Dwelling Unit Layout

3.3 Ancillary Areas and Car Park

Blocks I, J and K all share two basement levels accessed by a ramp to the left of block I. Basement 1 has 17 car parking spaces, cycle stores and ancillary areas. Basement 2 has a refuse holding area.

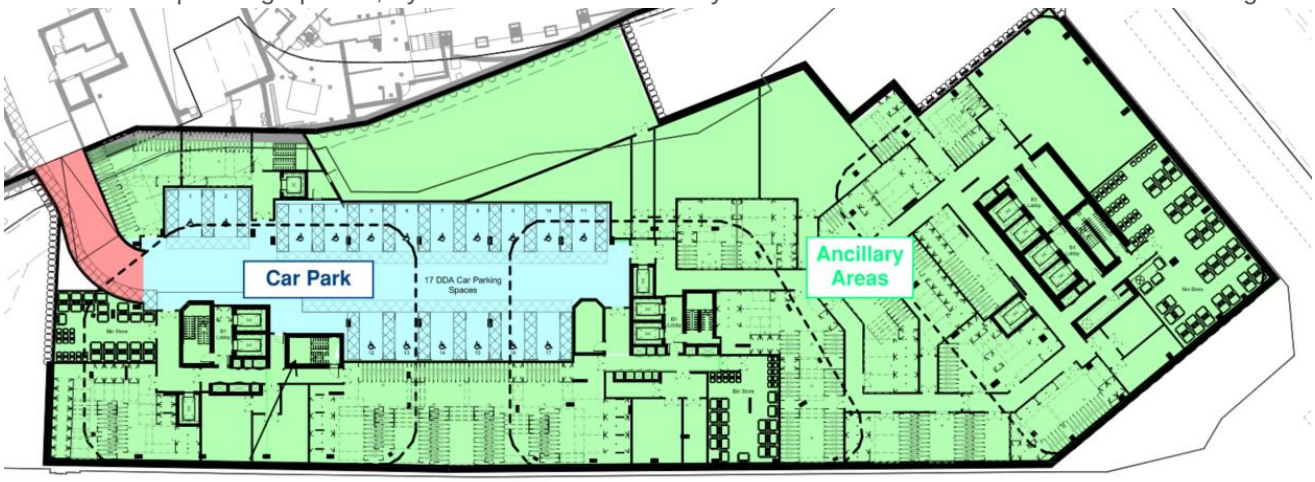

Figure 5Figure 6 below highlight these areas. Basement 1 will be provided with four escape stairs and basement 2 will be provided with two escape stairs.

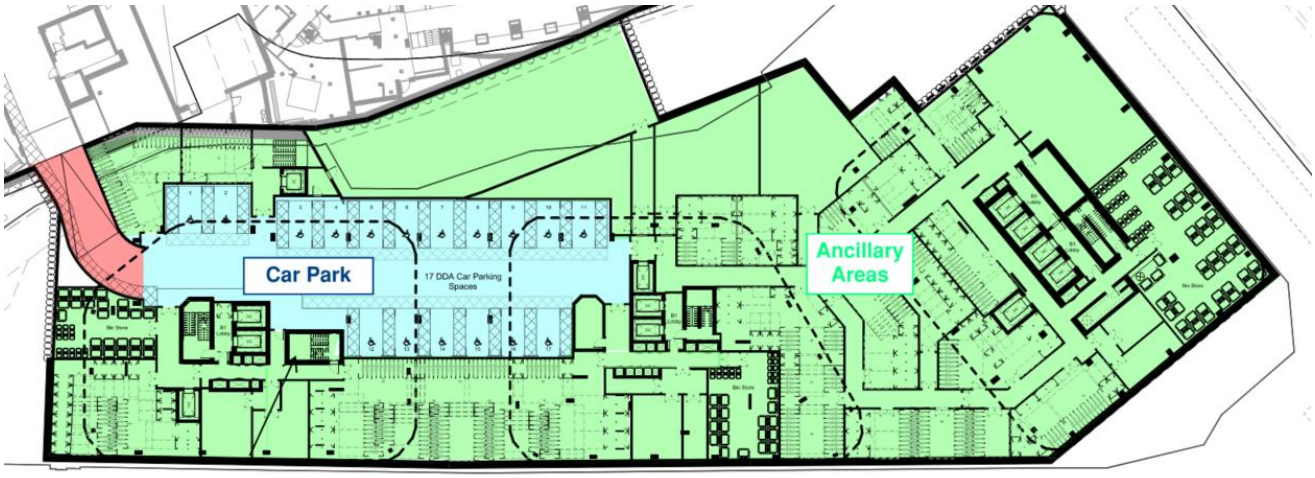

Figure 5:-Layout of Basement 1 - Highlighting Car Park and Ancillary Areas

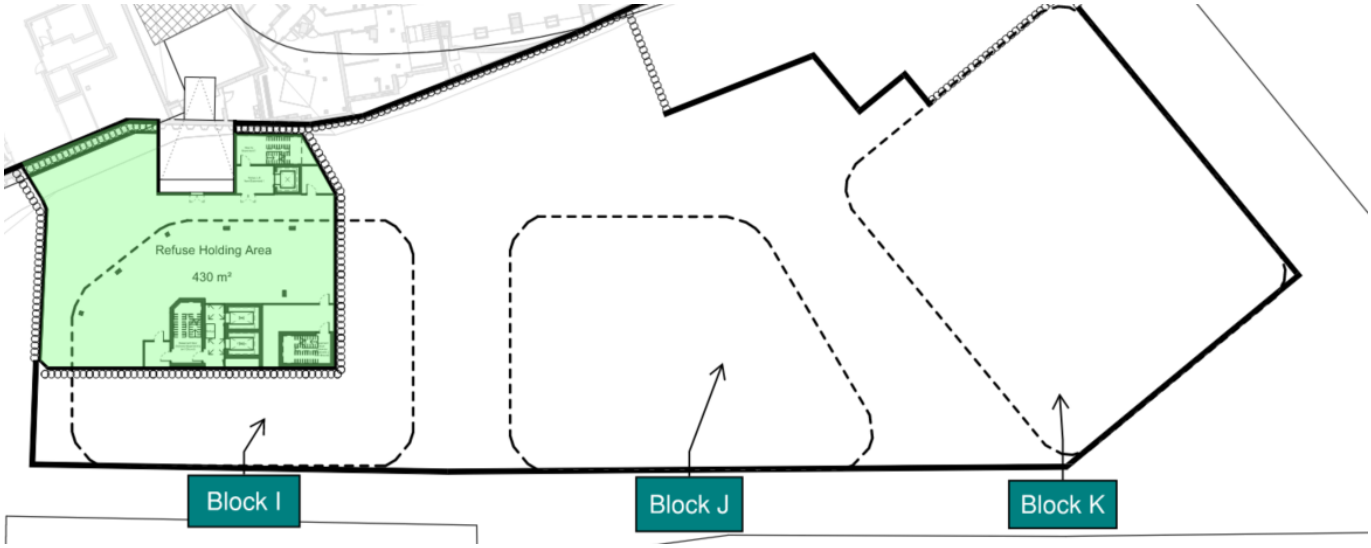

Figure 6-Layout of Basement 2 - Highlighting Ancillary Area

3.4 Commerical Areas

The commercial areas are located on ground floor in each block, a detailed design of the commercial units have not yet been proposed. Figure 7- Layout of Ground floor- Highlighting commercial areasFigure 7 highlights these areas.

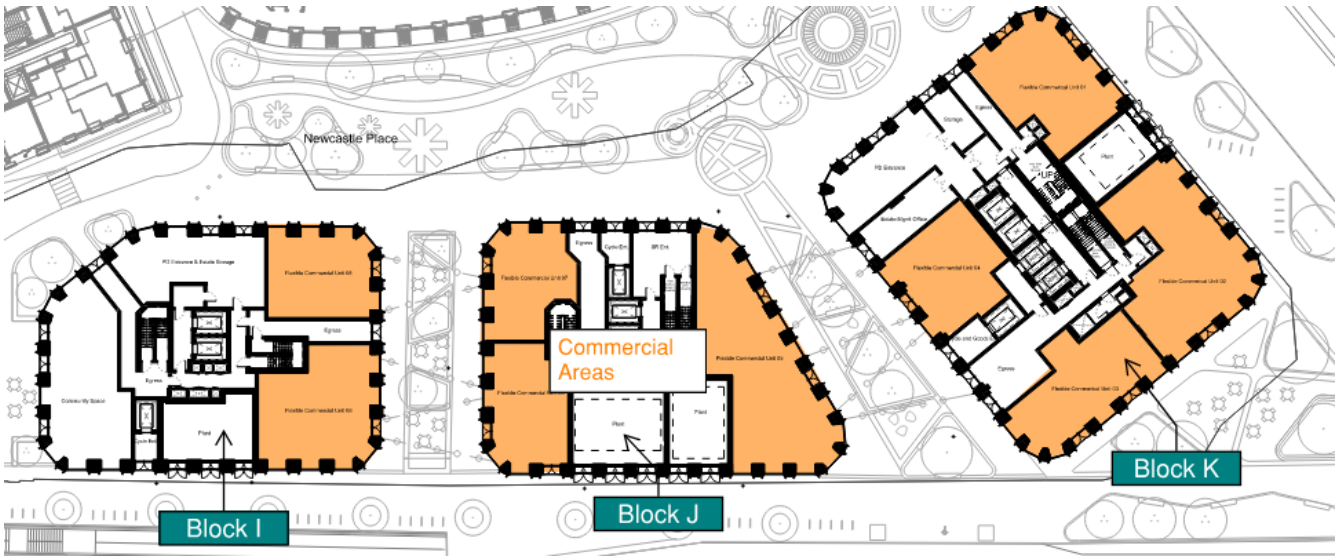

Figure 7- Layout of Ground floor- Highlighting commercial areas

3.5 Risk Profiles

Blocks I, J and K will be mixed-use buildings, therefore an occupancy assessment to determine the risk profile has been conducted as shown in Table 8.

Table 8 Risk Profiles

Location	Familiar with Building?	Fire Growth Rate	Sleeping Risk	Special Risks Identified	Risk Profiles [1]
Residential Areas [2]	Yes	Slow	Yes	No	C1
Commercial Units	No	Medium	No	No	B2
Ancillary Areas	Yes	Medium	No	No	A2

[1] Note [1]: BS 9999:2017 states that where sprinkler suppression is provided the fire growth rate can be reduced by 1 level. The information in Table 8 reflects this guidance.

[2] Note [2]: A risk profile for residential areas have been included for completeness. This is compliant with Draft BS 9991:2021.

4 B1-Means of Warning and Escape

4.1 Evacuation Strategy

Table 9 provides a summary of the evacuation strategies which will used throughout the development. Blocks I, J and K will have two means of escape stairs in residential areas. Blocks I and J will have one firefighting stair and one protected stair. Blocks I and J will also have one firefighting/evacuation lift and one evacuation lift in one lift core.

Block K will be provided with two firefighting stairs as its largest storey area is greater than 900 m^2. Block K will have 2 lift cores, in each lift core will be one firefighting lift and one evacuation lift.

It is important to note that the design of Blocks I, J and K has changed from one stair to two stairs to improve means of escape provisions.

The shared basement which consists of ancillary and amenity areas will be provided with four escape stairs to ground floor.

The commercial area is located on ground floor and therefore no vertical evacuation is needed.

Table 9: Evacuation Strategy

Building Use	Area	Evacuation Strategy	Comments
Residential floors	Residential units	Defend in Place	This will be supported by the robust compartmentation provided within the design.
Ancillary areas	Basement	Simultaneous	The fire alarm system will not interlink with residential units. Therefore, upon activation of

			the fire alarm all occupants within the ancillary areas will evacuate.
Commercial Units	Ground floor for all blocks	Simultaneous	The alarm system will not interlink with residential units. Therefore, upon activation of the fire alarm all occupants within the commercial areas will evacuate.

4.1.1 Measures to Support a Defend in Place Evacuation Strategy

Residential apartments will utilise a defend in place evacuation strategy. This type of evacuation will be supported by both passive and active measures as described in Section 6.1 and 6.2 of this report.

4.1.2 Emergency Evacuation System

Each block will be provided with an Emergency Evacuation System (EAS). The EAS will allow the fire service to manually actuate sounders within individual units, across a whole floor or throughout the entire building. The EAS system is used when the building fails to perform as expected and the Fire Service determine that the primary evacuation strategy is no longer suitable. The EAS will need to be designed and installed in accordance with BS 8692:2019.

As the EAS may be used to initiate simultaneous evacuation of the building, the means of escape provisions must be sized to facilitate the safe escape of all expected occupants within the building. The total occupancy is determined by the number of residents each flat is designed to accommodate. The clear width of storey/final exits, corridors and stairs may need to be increased from the minimum requirements of BS 9991 to account for this scenario. The common corridors widths may need to be increased to comply with the wheelchair access requirements from Approved Document M.

4.1.3 Measures to Support a Simultaneous Evacuation Strategy

A simultaneous evacuation will be incorporated in the ancillary and commercial areas of each building.

The expected occupancy within commercial areas will be determined by using floor space factors. Storey and final exits will then be adequately sized to support simultaneous evacuation for the total amount of people present in these areas.

4.2 Fire Detection and Alarm System

Table 10 provides a summary of the fire detection and alarm system that will be incorporated throughout each block.

Table 10: Fire Detection and Alarm System

Building Use	Proposed System	Comments
Residential Areas	Grade D LD1[1]	Smoke detectors will be included throughout the apartment apart

		from a heat detector in the kitchen area.
Commercial Areas	L2	N/A
Ancillary Areas	L2	N/A
Escape routes	L5	Linked to associated active systems.

[1] Note [1]: There are 2 types of Grade D system within apartments:

Grade D1 is a system of one or more mains-powered detectors, each with a tamper-proof standby supply consisting of a battery or batteries. Grade D1 systems are recommended for fire detection and fire alarm systems in rented dwellings, whether new or existing, due to the potential for a higher level of reliability that is appropriate because occupants of rented dwellings tend to be at higher risk.

Grade D2 is a system of one or more mains-powered detectors, each with an integral standby supply consisting of a user-replaceable battery or batteries. Grade D2 systems are recommended for use in new owner-occupied dwellings. Owing to the possibility that the standby battery might be removed from the alarm.

4.3 Means of Escape- Residential Units

4.3.1 Internal Arrangements

Where a residential unit incorporates a protected entrance hall, travel distance within this area is limited to 9 m.

Open plan layout apartments contain no protected entrance halls and bedrooms that are inner rooms to the living/kitchen area. These flats will be designed in accordance with section 9.5 of Draft BS 9991: 2021. Where an apartment incorporates an open plan layout, travel distance is limited to 20 m.

Where flats have an unenclosed kitchen, cooking hobs will be located remotely from the escape route. A preliminary hob assessment has been conducted to determine if the radiated heat an occupant experiences whilst escaping is acceptable. The assessment has shown that the fractional effective dose is within satisfactory limits. Further calculations may be required during RIBA Design Stage 3 should the internal layouts of the residential units change.

4.3.2 Common Corridor

All apartments have direct access to a ventilated common corridor. The common corridor provides a protected route from the apartment entrance to the escape stair entrance. Each of the three blocks has a building height exceeding 30m, in accordance with section 22.3.2.2 of Draft BS 9991:2021, a mechanical smoke ventilation system or a pressure differential system will be provided in common corridors.

4.3.3 Fire Exits

The design of Blocks I, J and K will reasonably accommodate facilities for M4(2) occupants and M4(3) occupants. This includes increasing door widths, providing evacuation lifts and suitably ramped egress routes instead of stepped routes. The force required to open doors will be 30 N to 22.5 N from 30° to 60° angle of opening cycle. Push buttons, handles etc. will be located at a height suitable for occupants such as wheelchair users. A full list of design considerations will be provided as part of the Fire and Life Safety Strategy for the building.

4.3.4 Evacuation Lifts

Blocks I, J and K will incorporate two lifts per core in accordance with section 7.6.1 of Draft BS 9991:2021. All lifts will be designed as evacuation lifts. The design and operation of evacuation lifts should be in accordance with BS EN 81-20:2020. The evacuation lift in each block will have trained competent staff to operate the lift car at all times. Further information on evacuation lifts will be provided as part of the fire and life safety strategy. The routine testing and maintenance will form part of the buildings management strategy. The building management strategy will also include policies and procedures of the use of evacuation lifts in a fire scenario.

4.4 Means of Escape- Commercial Units

4.4.1 Exit Width

The commercial units will be located on the ground floor of each block. Therefore, each unit will have independent means of escape directly to a final exit. The exit widths will be calculated in the fire and life safety strategy in accordance with section 16.2 of BS 9999:2017.

5 B2-Internal Fire spread (Linings)

5.1 Linings

Linings should adequately resist the spread of fire over their surfaces. In addition, if ignited, linings should inhibit the rate of heat release or the rate of fire growth. In order to achieve this, limitations will be imposed on the classification of linings used in different areas of the building. The installation methods, products and material used, including manufacturers' details of internal linings will be determined in the detailed design stage. A summary of minimum performance requirements is provided in Table 11.

Table 11-Minimum Performance Requirement of Linings

Location	Minimum Classification (National Class)	Minimum Classification (European Class)
Circulation spaces within dwellings	1	C-s3, d2

Other circulation spaces, including the common areas of blocks of flats	0	B-s3, d2
Small rooms (< 4m^2 and <30m^2 in non-residential buildings)	3	D-s3, d2
Sleeving where a pipe penetrates a compartment wall or floor	Non-combustible materials must be used	
Walls of a flue that penetrates a compartment floor or wall	Non-combustible materials must be used	

6 B3-Internal Fire Spread (Structure)

Elements of structure will be adequately protected to ensure that a fire will not cause any element to fail resulting in the collapse of the building. A summary of the minimum period of fire resistance for the building is provided in Table 12.

Table 12- Minimum Fire Resistance for All Blocks

Height of All Blocks	Sprinklered	Minimum Period of Fire Resistance
>30m	Yes	120 minutes for load bearing [1]

[1] Note [1]: The QDR will determine if fire resistance will need to be increased.

6.1 Passive Fire Protection

6.1.1 Compartmentation and Fire Resistance Requirements

Table 13 provides a summary of the fire resistance required for compartmentation and fire-resistant enclosures.

Table 13: Minimum Fire Resistance and Fire Doors of All Blocks

Elements within All Blocks	Fire Resistance (REI)	Fire Door Type
Compartment floors	120 minutes	N/A
Lift shafts	120 minutes	FD60
Service riser	The same fire resistance as the element through which they pass, in this case 120 minutes	FD60S[1]

Refuse storage	60 minutes	FD60S
Construction separating individual flats	60 minutes	N/A
Construction separating flats with common corridor	60 minutes	FD30S
Wheelchair Storage	30 minutes	FD30S

[1] Note [1]: All riser doors will be provided with smoke seals due to the QDR.

6.1.2 Fire Resistant Enclosures

Ancillary accommodation and places of special fire hazard will be enclosed in a fire-resistant construction in order to separate them from escape routes and other areas of the building. Fire resistant enclosures will be provided with appropriate fire doors.

A full schedule of fire-resistant enclosures and associated fire doors will be provided in Blocks I, J and K Fire and Life Safety Strategy which will be submitted to Building Control and the Fire and Rescue Service for approval.

6.1.3 Fire doors

Where access is required between fire compartments, appropriate fire doors will be provided and smoke seals if necessary. Fire doors on escape routes will be provided with self-closing mechanisms so that compartmentation is maintained once an occupant has passed through it. All fire doors will achieve a similar fire resistance to the element in which they are located, as seen in Table 13.

A full schedule will be provided as part of the Fire and Life Safety Strategy. All fire doors will be designed in accordance with Draft BS9991:2021 and installed and tested to BS EN 1634:2008.

6.2 Active Fire Protection

6.2.1 Sprinkler Suppression

Automatic sprinklers are required in all buildings above 11 m in height and are provided throughout Blocks I, J and K. The sprinkler system for residential areas must be a category 4 system which will be designed and installed in accordance with BS 9251:2021. All wheelchair storage rooms located in dwellings must be provided with a Category 2 suppression system as a minimum. As all flats will be provided with a Category 4 suppression, it may be that the suppression system within the wheelchair storage room is enhanced to the same level as the rest of the unit for consistency. All non-residential areas will be provided with a commercial sprinkler suppression system designed and installed in accordance with BS 12845:2015.

6.2.2 Active Systems – Smoke Control

A Mechanical smoke extract system will be provided in common corridors. The mechanical ventilation system should be designed in accordance with the SCA Residential Smoke control System Guide and be supported by Computational Fluid Dynamics (CFD) simulation and analysis.

In accordance with Draft BS9991:2021, section 22.3.2.2 states buildings over 30 m in height should be provided with mechanical smoke ventilation system (MSVS).

In this case a mechanical smoke ventilation system will be required for the escape stair and firefighting lobby as all blocks exceed 30 m.

6.2.3 Active Systems – Emergency Lighting and Signage

Emergency lighting which complies with BS 5226-1:2016 will be provided in all common escape routes. Escape and other emergency signage will also be provided. A complete signage strategy will be developed as part of the project to ensure that the information and way finding signage are adequate. Signage will be compliant with BS 5499:2013.

6.2.4 Active Systems – Emergency Power

Emergency backup power will be provided for all life safety systems that require electricity to function as intended. The secondary back up power supply is to be provided by a separate standard generator.

7 B4-External Fire Spread

To reduce the risk of external fire spread from one building to another, the amount of unprotected area that is permitted on any one elevation may be limited. The percentage of unprotected area depends on compartmentation within the building, the boundary distance, the radiation intensity of the fire and whether the building contains automatic suppression systems.

To calculate the percentage of the unprotected area permitted within a given elevation, external fire spread calculations will be completed. The methodology described in 'BR 187 External fire spread: building separation and boundary distances' will be used to perform these calculations.

A full set of calculations will be included in the Fire and Life Safety Strategy document.

Where an elevation is located within 1000 mm of a relevant/notional boundary, 100% of the elevation will be protected.

External wall construction material, such as surface materials, insulation, and membranes all should achieve the European classification A2-s1, d0 or above. The installation methods, products and material used, including manufacturers' details will be determined in the detailed design stage.

8 B5-Access and Facilities for the Fire and Rescue Service

8.1 External Access

Fire Service and other emergency road vehicles will approach Blocks I, J and K directly from the north via Newcastle Place as seen in Figure 8.

Each of the three blocks will have a building height exceeding 50m therefore a wet riser main will be provided. Access will be provided to allow a fire service pumping appliances to be sited within 18

m of the entrance point to a wet fire main. As well as this, the fire main inlet should be provided within sight of fire appliance stopping position for the emergency replenishment of the suction tank.

Access to the firefighting stair cores within Blocks I, J and K will be provided from Newcastle Place. In order to maintain an unobstructed access route, parking locations will be marked in positions that prevent any vehicle from impeding this route.

The public hydrant will require to be within 90 m of the fire main entry point of each block, should this not be met, a private hydrant will need to be proposed.

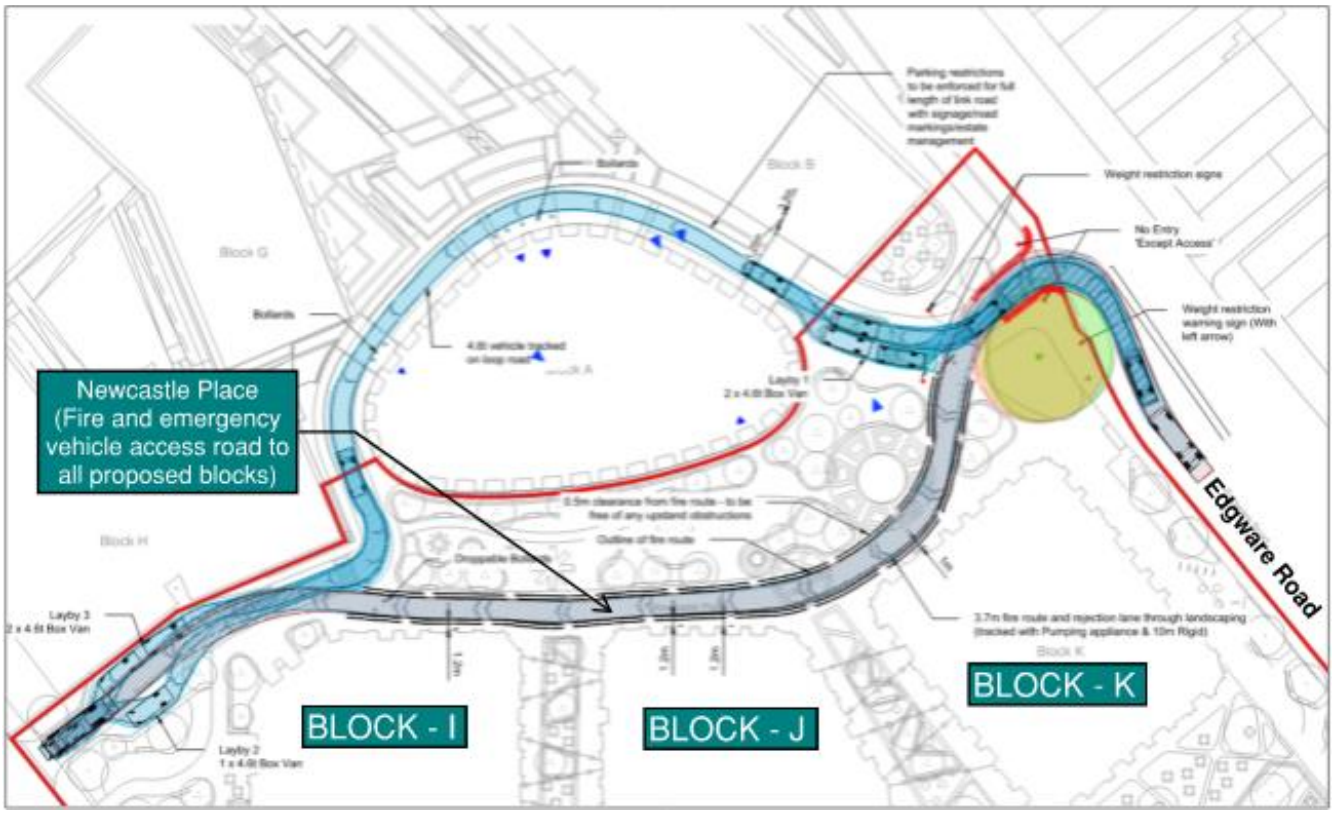

Figure 8-Access Road Site Map

8.1.1 Fire Appliance Access Route

The access road will meet the size and weight criteria as stated in BS 9999:2017 table 20, which is defined in Table 14.

Table 14-Size and Weight Requirement

Appliance Type	Minimum Width of Road (m)	Minimum with of Gateways (m)	Minimum Turning Circle between Kerbs	Minimum Turning Circle between Walls	Minimum Clearance Height (m)	Minimum Carrying Capacity (tonnes)

			(m)	(m)		
Pump	3.7	3.1	16.8	19.2	3.7	12.5
High reach	3.7	3.1	26.0	29.0	4.0	17

8.2 Internal Access

Blocks I, J and K are over 50 m in height and therefore each block will be provided with a wet rising main. The fire service can access all areas on each floor within 60 m from the fire main provided at each level. The fire service appliance will be within 18 m from the firefighting stair in each block.

Recent changes to the Building Regulations 2010 (Amended) require installation and provision of 'wayfinding signage' for the fire service use in purpose group 1a (Residential (Block of Flats)) with a floor exceeding 11m above ground level, see MHCLG circular letter dated 26th May 2020. A suitable emergency lighting and signage strategy will be provided in all common escape routes and stairs in the commercial area, ancillary areas, and residential areas.

8.3 Firefighting Shafts

The firefighting stair, firefighting lobby, firefighting lift within the firefighting shaft will all be enclosed in 120 minutes fire resistance construction. As well as this, the firefighting wet main will be located in the firefighting lobby or firefighting stair of each shaft, which is defined in the fire strategy drawings in Appendix A. Blocks I and J will have one firefighting shaft and block K will have two firefighting shafts due to storeys exceeding an area of 900 m^2.

8.4 Water Supplies

The primary water source will be the wet riser main located within firefighting shaft of each block as well as the public hydrant. A tank will be provided where water will be held, which can be filled using a town main or by the fire service. In addition, The London Fire Brigade (LFB) pumping appliance will contain approximately 1365 litres of stored water. A site survey will be conducted to demonstrate that all hydrants are in suitable locations to each block, in accordance with BS 9991 (Draft) hydrants must be 90m from the building. If the existing provisions are not sufficient, alternative measurers will be implemented.

8.5 Premise Information Box

Block I, J and K must be provided with a premise information box (PIB) in accordance with Draft BS 9991: 2021. The information included in the PIB will be stated in the Fire and Life safety Strategy.

8.6 Assembly Point

Currently, there is no guidance document regarding the creation and location of assembly points, and it is not a requirement under the current building regulations. However, it is suggested that these be provided at a suitable distance from the building in proximity to the road of Newcastle Place. AESG proposes that evacuation assembly points are provided within the landscaped area adjacent to the West Mark Tower and also on the existing pedestrianised area adjacent to Harrow Road. This notional location is shown on the fire strategy drawings in Appendix A. We are showing notional assembly points which could be used irrespective of which block the fire is in.

Emergency assembly points in this location will allow occupants to move away from the scene of operations and to a place of ultimate safety. Assembly points in this location will also allow other emergency services such as the Ambulance Service to site their vehicles and provide treatment without compromising firefighting operations.

9 Building Information

If during its lifecycle the building undergoes any design modification or changes of use, the fire strategy must be reviewed. The document will provide details of all the components which are required to be maintained in order to support the existing strategy. Any changes to the existing design must be assessed against this information to ensure that the changes to not negatively impact the existing provisions.

Where internal layouts are modified, the fire strategy drawings must be reviewed to ensure that compartmentation within the building is not compromised. This is particularly important in residential buildings where a ‘defend in place’ evacuation strategy is used.

Where a building is being refurbished and no changes to the design are being made, it must be ensured that the works achieve the same performance criteria as detailed in the fire strategy.

Where necessary, a new fire strategy must be produced. Any changes to the building, or the fire strategy as a whole, must be discussed and agreed with planning authorities, building control and the fire service prior to work commencing.

With regards to this project, the particular items which must be reviewed as part of any future works are as follows;

- Do the changes affect the proposed means of escape?
- Has the compartmentation within each block been maintained? (This includes any new service penetrations which pass-through fire-resistant construction).
- Does the protected route from the stair to a final exit been maintained and remains fire sterile?
- If additional floors are added, then the fire resistance of the structural elements will need to be reviewed. The existing fire resistance may not be sufficient of the building height is increased.

- Do any changes affect the distance a firefighter must travel in order to reach the most remote parts of the building?

This is not an exhaustive list; however, it highlights the particular aspect of the project which are critical to the current strategy.

Appendix A

FIRE STRATEGY DRAWINGS