



PADDINGTON GREEN
POLICE STATION

January 2023

Fire Statement (National Requirements)

Fire Statement (National Requirements) – January 2023 –

GLA0711 AMND Rev 01 January 2023

Berkeley
Designed for life

Paddington Green Police Station – Blocks I, J and K

Fire Statement – National Requirements



Project Name	Paddington Green Police Station – Blocks I, J and K
Report Title	Fire Statement – National Requirements
Description	National Requirements
Ref. No.	BER – PGP – FST – 001
Issue	01
Revision	03
Date	6 January 2023
Prepared by	Ella Leslie
Reviewed by	Kieran Davies
Approved by	Holy Liang/Jianqiang Mai
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Fire Statement Form

Application Information		
1.	Site address line 1	Paddington Green Police Station – Blocks I, J and K
	Site address line 2	
	Site address line 3	
	Town	London
	County	Greater London
	Site postcode (optional)	W2

2.	Description of the proposed development including any change of use (as stated on the application form).	<p>The Paddington Green Police station development will be located in Marylebone, London. It is proposed that the development will construct three new blocks, Blocks I, J and K. These blocks will have two shared basement levels. This fire statement relates to the shared basements of the development and Blocks I, J and K.</p> <p>Blocks I, J and K will be mixed-use buildings, all blocks will comprise of commercial units on the ground floor and residential apartments on the upper floors. All three Blocks will be greater than 18m in height. Therefore, a minimum of one fire-fighting shaft will be provided including a fire-fighting stair, fire-fighting lobby, a fire main and a fire-fighting lift. For means of escape, all blocks will be provided with two escape stairs in residential areas.</p> <p>Blocks I and J will be provided with 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. Whereas Block K will be provided with two firefighting stairs as the largest storey of Block K is more than 900 m² in area. Block K will have 2 lift cores, in each lift core will be one firefighting lift and one evacuation lift.</p> <p>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.</p> <p>The shared basement which consists of ancillary and amenity areas will be provided with four escape stairs to ground floor.</p> <p>The commercial area is located on ground floor and therefore no vertical evacuation is needed.</p> <p>Block I will contain 24 storeys and it will be approximately 78.3 m in height (as measured from the fire service access level to the highest occupied floor level). Block I will have a total of 149 residential units, that will include a mixture of 1-bedroom, 2-bedrooms, 3-bedrooms and 4-bedrooms apartments.</p> <p>Block J will approximately be 55.65 m in height with a total of 98 residential units which include 1-bedroom, 2-bedrooms, 3-bedrooms, and 4-bedrooms.</p> <p>Block K will approximately be 128 m in height with 39 storeys. Block K will have a total of 309 residential units which include 1-bedroom, 2-bedrooms, 3-bedrooms, and 4-bedrooms.</p> <p>Blocks I, J and K will share common basements, basement 1 will include 17 car parking spaces, cycle stores and ancillary areas. The basement 1 will be accessible by West End Gate car park on the west elevation of Block I. Basement 2 will contain only a proposed refuse holding area.</p>
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3.	<p>Name of person completing the fire statement (as per section 15, relevant qualifications and experience.</p> <p>Guide: no more than 200 words</p>	<p>This report has been signed off by Dr Jianqiang Mai, Technical Director of AESG UK Fire Engineering Division. A summary of Dr Mai's qualifications and experience has been displayed in the table below:</p> <table border="1"><thead><tr><th colspan="2">Qualifications / Experience-based (minimum requirements)</th></tr></thead><tbody><tr><td>Chartered engineer?</td><td>Yes – (CEng)</td></tr><tr><td>Member of Institute of Fire Engineers?</td><td>Yes – (MIFireE)</td></tr><tr><td>Fire engineering experience?</td><td>Yes – 20+ years</td></tr><tr><th colspan="2">Qualifications / Experience based (Additional)</th></tr><tr><td>Qualification 1</td><td>BEng, Hydraulic Machinery</td></tr><tr><td>Qualification 2</td><td>MEng, Fluid Machinery</td></tr><tr><td>Qualification 3</td><td>PhD, Mechanical Engineering</td></tr></tbody></table>	Qualifications / Experience-based (minimum requirements)		Chartered engineer?	Yes – (CEng)	Member of Institute of Fire Engineers?	Yes – (MIFireE)	Fire engineering experience?	Yes – 20+ years	Qualifications / Experience based (Additional)		Qualification 1	BEng, Hydraulic Machinery	Qualification 2	MEng, Fluid Machinery	Qualification 3	PhD, Mechanical Engineering
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Qualifications / Experience based (Additional)																		
Qualification 1	BEng, Hydraulic Machinery																	
Qualification 2	MEng, Fluid Machinery																	
Qualification 3	PhD, Mechanical Engineering																	
4.	<p>State what, if any, consultation has been undertaken on issues relating to the fire safety of the development; and what account has been taken of this.</p> <p>Guide: no more than 200 words</p>	<p>AESG has conducted a fire and life safety review of the proposed design. The review has been undertaken using the guidance detailed in British Standard Draft 9991:2021 and where appropriate BS 9999:2017. The purpose of the review was to ensure that the design can support a robust fire strategy, which is suitable and sufficient for the building use and occupancy. The main considerations are:</p> <ul style="list-style-type: none">• Means of warning and escape• Internal fire spread (linings)• Internal fire spread (structure)• External fire spread• Access and facilities for the fire service <p>The review has also established if the proposals would comply with the functional requirements of Part B – Schedule 1 of the Building Regulations 2010 (as amended in 2018) using the standard guidance of Draft BS 9991:2021 and BS 9999:2017 or if fire engineered solutions would be required in order to achieve the minimum performance criteria for the building.</p> <p>Based on the findings of the review, AESG has concluded that the new elements of the building will design in a code-compliant manner and that the existing fire safety provisions remain sufficient for the risks associated with the building.</p>																



Site layout plan with block numbering as per building schedule referred to in 6			
5.	Plans must be consistent with other plans drawings and information submitted in connection with the application.	Tick one:	
		Provided as a separate plan	Inserted into form
		✓ (See Appendix A)	

The principles, concepts and approach relating to fire safety that have been applied to the development. Where instructed to do so you must select one of the options in the relevant section of the Table at the end of this Form.										
6.	Building Schedule									
	Site information				Building information			Resident safety information		
	a) • Block no. as per site plan layout	b) • Block height (m) • Number of storeys excluding basements • Number of stories including basements	c) • Proposed use (one per line)	d) • Location of use within the block by floor level	e) • Standards relating to fire safety/approach applied	f) • Balconies	g) • External wall systems	h) • Approach to evacuation	i) • Automatic suppression	j) • Accessible housing provided
	Block I, J and K	Block I: • Approx. 78.3 m • 24 storeys (ground + 23 floors) Block J: • Approx. 55.65 m	Residential Flats	Block I: 1 st to 23 rd floor Block J: 1 st to 16 th floor Block K: 1 st to 38 th floor	Draft BS 9991:2021	Class A2-s1, d0 or A1	Class A2-s1, d0 or better	'Defend in Place' for residential units	Provided (In accordance with BS 9251)	90% of apartments is M4(2) Category 2: Accessible and adaptable dwellings. 10% of apartments is M4(3) Category 3: Wheelchair user dwelling



	Block I, J and K	<ul style="list-style-type: none">17 storeys (Ground+16 floors) Block K: <ul style="list-style-type: none">Approx. 128 m39 Storeys (ground + 38 floors) Basements <ul style="list-style-type: none">2 shared basement level in all blocks	Commercial units	Block I, J and K: Ground floor	BS 9999:2017	NA	Class A2-s1, d0 or A1	Simultaneous evacuation	Provided (In accordance with BS 12845)	NA
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Specific technical complexities

7.	<p>Explain any specific technical complexities in terms of fire safety (for example green walls) and/or departures from information</p> <p>Guide: no more than 500 words</p>	<p>The height of all blocks will exceed 50 m and therefore a full Qualitative Design Review will be carried out within the RIBA Stage 3 fire strategy, a concept QDR has been completed to support the planning stage. The QDR will determine if the minimum requirements of BS 9991 and BS 9999 are suitable for use in a building of this height or whether fire engineered solutions will be required.</p> <p>AESG acknowledges that a new version of BS 9991 is due to be published. Therefore, the fire safety design of Blocks I, J and K is based on Draft BS 9991:2021, this has complexities as it has not been used before.</p> <p>Blocks I, J and K all share two basement levels which can have complications to the structural integrity and spread of fire in all building blocks.</p> <p>A Computer Fluid Dynamics (CFD) study will be conducted within the fire strategy to ensure the mechanical smoke extract system can return the residential common corridor to tenable conditions.</p> <p>Blocks I and J will be provided with two lifts (firefighting/evacuation lift and dedicated evacuation lift) which will be located within the firefighting shaft. Whereas, Block K will be provided with four lifts (two evacuation lifts and two firefighting lifts/evacuation lift). In accordance with the London Plan 2021 requirements, occupants must be able to enter, use and exit a building safely and with dignity therefore a minimum of one lift per core will suitably size as an evacuation lift within the design.</p> <p>As all blocks will be mixed-use, an interaction of alarm systems will need to be implemented this may affect the evacuation procedure of each block.</p> <p>It is intended that within Block I, J and K, 90% of all apartments will be designed in accordance with the Approved Document M, Regulation M4, Category 2. Within this document Regulation, M4 has been amended and is now titled 'Access and use of dwellings'. Category 2 relates to dwellings that provide a higher level of accessibility that is particularly beneficial to older and disabled occupants, including some wheelchair users. The remaining 10% will be designed in accordance with the Approved Document M, Regulation M4, Category 3. Category 3 related to dwellings that provide for wheelchair users.</p> <p>All open plan flats will design in accordance with section 9.5 of Draft BS 9991:2021 which requires a 1.8 m separation distance between cooking hobs and the escape route. Where this distance is not achieved a preliminary hob assessment has been conducted to determine if the radiated heat an occupant experiences</p>
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		whilst escaping is acceptable. The assessment has shown that the fractional effective dose is within satisfactory limits. Further calculations may require during RIBA Design Stage 3 should the internal layouts of the residential units change. If any non-compliant issues are identified during the design development, a suitable robust fire engineering design will be applied.
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Issues which might affect the fire safety of the development		
8.	<p>Explain how any issues which might affect the fire safety of the development have been addressed</p> <p>Guide: no more than 500 words</p>	<p>Blocks I, J and K will be above 18 m in height, therefore it is required for a firefighting shaft to be in each block. 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. 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 m².</p> <p>The height of all blocks exceeds 50 m which requires a qualitative design review (QDR) as stated in Draft BS 9991:2021.</p> <p>All residential floors in each block will be constructed as compartment floors, which will be the same fire rating as the structure of the building in this case 120 minutes.</p> <p>The shared basement will have an individual stair in each block that only leads to ground floor, all other floors within the building will be provided with a separate stairway.</p> <p>Blocks I, J and K will be 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. This is compliant with the requirement of Draft BS 9991:2021. It is recommended to perform hydraulic calculation for the wet rising main system.</p> <p>All blocks will be fitted with a sprinkler protection system throughout. The Residential demise will be provided with a category 4 system 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. 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 will 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.</p> <p>The shared car park will be required to provide a mechanical smoke extract system with a minimum extraction capacity of 10 air changes per hour.</p> <p>Means of escape for residential floors will design in accordance with figure 9, Draft BS 9991:2021. The design limits the travel distance to 30 m as two means of escape stairs will be provided. The protected common corridor will be provided with a mechanical smoke control system.</p> <p>All open plan flats will be designed in accordance with section 9.5 of Draft BS 9991:2021 which requires 1.8 m separation distance between cooking hobs and the escape route. Where this distance is not achieved 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 require during RIBA Design Stage 3 should the internal layouts of the residential units change.</p> <p>Recent changes to the Building Regulations 2010 (as Amended 2018) require installation and provision of 'wayfinding signage' for the fire service use in purpose group 1a' (Residential (Block of Flats)) with a floor exceeding 11 m 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.</p> <p>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 will need to be provided at a suitable distance from the building in proximity to the road of Newcastle Place. Emergency assembly</p>



		<p>points in this location will allow occupants to move away from the scene of operations and to a place of ultimate safety. 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.</p> <p>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.</p> <p>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.</p>
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Local development document policies relating to fire safety		
9.	<p>Explain how any policies relating to fire safety in relevant local development documents have been taken into account</p> <p>Guide: no more than 500 words</p>	<p>AESG are not aware of any local development documents that have been provided for consideration in matters relating to fire safety.</p>

Emergency road vehicle access and water supplies for firefighting purposes		
Fire Service Site Plan		
10.	<p>Explanation of fire service site plan(s) provided in 14. including what guidance documents have informed the proposed arrangements for fire service access and facilities?</p> <p>Guide: no more than 200 words</p>	<p>Fire service access will be designed as per the guidance within Section 8 of Draft BS 9991:2021.</p> <p>The Fire service vehicle will approach the site from Newcastle place, the north side of all blocks.</p> <p>Due to the height of the buildings a wet riser main will be provided in each building. As the buildings will be provided with a wet riser main, the fire service pumping appliances will require to site within 18 m of the entrance point to a wet fire main in accordance with Section 50.1, Draft BS 9991:2021. 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.</p> <p>For upper and basement floors, the fire service will have access to all areas on each floor within 60 m from the fire main outlet. The fire service appliance parking location will be provided within 18 m at access level from the firefighting stair in each block.</p> <p>In each block at ground (access) level, the fire service will reach all areas within 60 m of fire hose coverage from the fire engine. The distance will measure from the outlet to the most remote area on ground (access) floor along a route suitable for laying hose.</p> <p>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 measures will be implemented. A tank will be provided where water will be held, which can be filled using a town main or by the fire service.</p> <p>One Firefighting shaft will be provided in Blocks I and J and two firefighting shafts will be provided in Block K. The firefighting shaft will consist of a firefighting lobby, firefighting stair, firefighting lift and firefighting wet riser main.</p>



		<p>Blocks I, J and K will 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.</p> <p>An evacuation alert system (EAS) will be provided to enable the fire and rescue to initiate operation of evacuation alert sounders throughout the building. The EAS will be designed, installed and in accordance with BS 8692:2019.</p>
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Emergency road vehicle access			
11.	Specify emergency road vehicle access to the site entrances indicated on the site plan Guide: no more than 200 words	Fire Service and other emergency road vehicles can approach Blocks I, J and K directly from the north via Newcastle Place.	
		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 mark in positions that prevent any vehicle from impeding this route.	
		Other emergency service vehicles such as ambulances can be sited on the existing roadways around the west and south perimeter of the building.	
Is the emergency vehicle tracking route within the site to the siting points for appliances clear and unobstructed?		Tick one:	
		<div>Yes</div>	<div>No</div>
		<div>✓</div>	

Siting of fire appliances		
12.	<p>Where possible provide information on which fire service appliances are accommodated by the site</p> <p>Guide: no more than 200 words</p>	<p>The two main vehicles used by the Fire Service are pumping appliances and high-reach appliances. As the buildings will be above 18 m, it is anticipated that the predetermined attendance will include a high-reach appliance.</p> <p>As per Table 20 of BS 9999:2017, provides minimum weight carrying capacity and width measurement of the roadway suitable for different fire service appliance types such as high reach.</p>



Siting of fire appliances																											
13.	<p>Suitability of water supply for the scale of development proposed</p> <p>Guide: no more than 200 words</p>	<p>The primary water supply will be the wet riser main in each block and 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.</p> <p>Tick one:</p> <table><thead><tr><th colspan="4">Nature of water supply</th></tr></thead><tbody><tr><td>Open water-limited</td><td></td><td>Open water - unlimited</td><td></td></tr><tr><td>Hydrant - public</td><td>✓</td><td>Hydrant - private</td><td></td></tr><tr><td>Tank supply</td><td>✓</td><td></td><td></td></tr></tbody></table> <p>Tick one:</p> <table><thead><tr><th colspan="2">Does the proposed development rely on existing hydrants and if so, are they currently usable/operable?</th></tr></thead><tbody><tr><td>Yes</td><td></td></tr><tr><td>No</td><td></td></tr><tr><td>Don't know</td><td>✓</td></tr></tbody></table>		Nature of water supply				Open water-limited		Open water - unlimited		Hydrant - public	✓	Hydrant - private		Tank supply	✓			Does the proposed development rely on existing hydrants and if so, are they currently usable/operable?		Yes		No		Don't know	✓
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Does the proposed development rely on existing hydrants and if so, are they currently usable/operable?																											
Yes																											
No																											
Don't know	✓																										

Fire service site plan						
14.	<p>The fire service plan should clearly illustrate the following:</p> <ul style="list-style-type: none">• Emergency road vehicle routes/tracking• Siting of appliances for firefighting purposes• Main fire personnel access points to buildings• Any dry/wet risers	<p>Tick one:</p> <table><thead><tr><th>Provided as a separate plan</th><th>Inserted into form</th></tr></thead><tbody><tr><td>✓ (See Appendix A)</td><td></td></tr></tbody></table>	Provided as a separate plan	Inserted into form	✓ (See Appendix A)	
Provided as a separate plan	Inserted into form					
✓ (See Appendix A)						



	<ul style="list-style-type: none">• Locations of any evacuation assembly points• Any cores and lift features (any firefighting lifts/evacuation lifts)• Locations of water hydrants the proposals rely on and associated distances <p>Guide: no more than 200 words</p>	
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Fire statement signed off by		
15.	Signature	
16.	Date	



Table for completion of Box 6

Tables below highlight the key elements of the building and fire safety packages incorporated within the design.

6cA. Purpose use		
Choose 1 of the following per line for box 6		
Residential flats, maisonettes, studios	Hotel	Hospital
Residential houses	Shop	School
Residential bedsits, cluster flats	Restaurant, café, hot food take-away, drinking establishment	Community use, childcare (not school)
Supported accommodation	Office, research and development	Prison, detention centre
Student accommodation	Industrial, storage or distribution	Car parking
Serviced apartments	Care home	Service area
Other residential accommodation	Health care	Flexible use

6eA. Standards relating to fire safety/ approach applied (including to external wall systems)		
Choose 1 of the following per line for box 6		
Approved Document B vol 1 (Wayfinding and Signage)	BS 9999 (Commercial)	HTM0502
BS 9991 (Residential units)	Fire engineered approach (if CFD is used)	BS 7974
Approved Document B vol 2	BB100	

6fA. Balconies		
Choose 1 of the following per line for box 6		
No balconies	Class A2- s1, d0 or better	Worse than Class A2-s1, d0



6gA. External wall systems		
Choose 1 of the following per line for box 6		
Class A2- s1, d0 or better	Worse than Class A2-s, d0	

6hA. Approach to evacuation		
Choose 1 of the following per line for box 6		
Simultaneous (Restaurant/ Amenity and ancillary areas)	Staged	Progressive horizontal
Phased	Defend in Place (Residential)	Delayed

6iA. Automatic suppression		
Choose 1 of the following per line for box 6		
Yes- residential sprinklers, full	Yes- commercial sprinklers, full	Yes- other
Yes- residential sprinklers, partial	Yes- commercial sprinklers, partial	Not provided

6jA. Accessible housing provided		
Choose 1 of the following per line for box 6		
None	M4(2) & M4(3)	N/A non-residential
M4(2)	M4(3)	



APPENDIX A

FIRE STRATEGY DRAWINGS