

KENSINGTON FORUM FIRE SAFETY STATEMENT

AL4793/prm/38rock
8 October 2020

1.0 INTRODUCTION

Kensington Forum is a proposed mixed use development in the London Borough of Kensington and Chelsea. The site plan is shown in Figure 1.

The development will primarily comprise hotel and serviced apartments with the guestroom arranged across two towers. The northern tower is the tallest and extends to Level 28. The south tower extends to Level 21.

The same operator will run both the hotel and serviced apartments and will share the same communal areas. Access to the hotel at ground floor is from Ashburn Place with a secondary entrance from Cromwell Road. Mezzanine and first floors provide restaurant, bar, and conferencing facilities.

There are two levels of basement with a ball room/conference room located at B2. The basement will also include most of the back of house accommodation and plant.

The residential apartment building is located on the Courtfield Road side of the site.

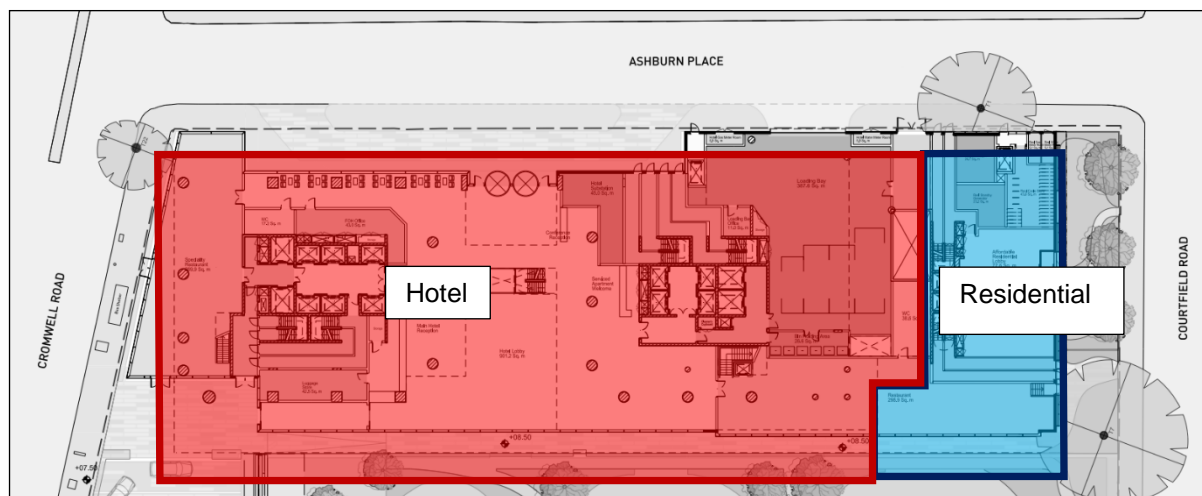


Figure 1- Kensington Forum Site Plan

This Fire Safety Statement report describes the fire strategy principles for the Kensington Forum project. This statement is to form part of the documentation submitted for planning and in particular to demonstrate compliance with Policy D12 of the Intend to Publish Version of the Draft London Plan.

The following sections describe the key fire safety principles and features for the Kensington Forum development. The fire strategy draws from contemporary guidance including the Building Regulations Approved Document B, BS9999 and BS9991 to ensure that the design achieves an appropriate standard of safety for all building users.

2.0 POLICY D12 FIRE SAFETY

Policy D12 of the Intend to Publish London Plan is given below:

- A In the interests of fire safety and to ensure the safety of all building users, all development proposals must achieve the highest standards of fire safety and ensure that they:
- 1) identify suitably positioned unobstructed outside space: a) for fire appliances to be positioned on b) appropriate for use as an evacuation assembly point
 - 2) are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems and passive and active fire safety measures
 - 3) are constructed in an appropriate way to minimise the risk of fire spread
 - 4) provide suitable and convenient means of escape, and associated evacuation strategy for all building users
 - 5) develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in
 - 6) provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.
- B All major development proposals should be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party, suitably qualified assessor. The statement should detail how the development proposal will function in terms of:
- 1) the building's construction: methods, products and materials used, including manufacturers' details
 - 2) the means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach
 - 3) features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans
 - 4) access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these
 - 5) how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building
 - 6) ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.

3.0 SPRINKLERS

There is no Building Regulations requirement for hotels to be sprinklered. However, the fire strategy for the Kensington Forum Hotel has been developed based on the entire building being sprinklered. The provision of sprinklers significantly enhances the standard of fire safety in the building for all building occupants and will significantly improve conditions for fire fighting.

The sprinkler system will be designed in accordance with the relevant British Standards.

4.0 HOTEL MEANS OF ESCAPE AND EVACUATION

4.1 Fire Alarm and Evacuation

The hotel/serviced apartments will be provided with a comprehensive fire alarm system. Smoke detection will be provided in all bedrooms and throughout the remainder of the building to an L2 standard.

The hotel and serviced apartments will be operated by the same hotelier and have been designed based on a simultaneous evacuation strategy.

A staged fire alarm will be used to allow management to investigate a fire alarm and to minimise the risk of unnecessary disruption to both their guests and the fire and rescue service.

4.2 Escape Routes from the Guestroom Levels

The building has two towers from Level 9 upwards. Each tower is provided with two protected escape stairs within a central core with the guestrooms arranged around the perimeter accessed via fire protected corridors.

Figure 2 below shows the arrangement of the guestrooms in the north tower. There are sections of dead end corridor that are up to 9.5 m long. This marginally exceeds the 9 m benchmark but is considered reasonable given that all of the guestrooms are sprinklered. The overall corridor escape distance is up to 20 m and well within the permitted maximum of 35 m



Figure 2 - North Tower Escape Distance

The guestrooms at Levels 2 to 8 have access to all four protected stairs via a racetrack style corridor, see Figure 2. Travel distances at these levels are compliant.

The corridors will be designed as protected fire resisting corridors. Cross corridor fire doors will be provided in accordance with Approved Document B guidance.

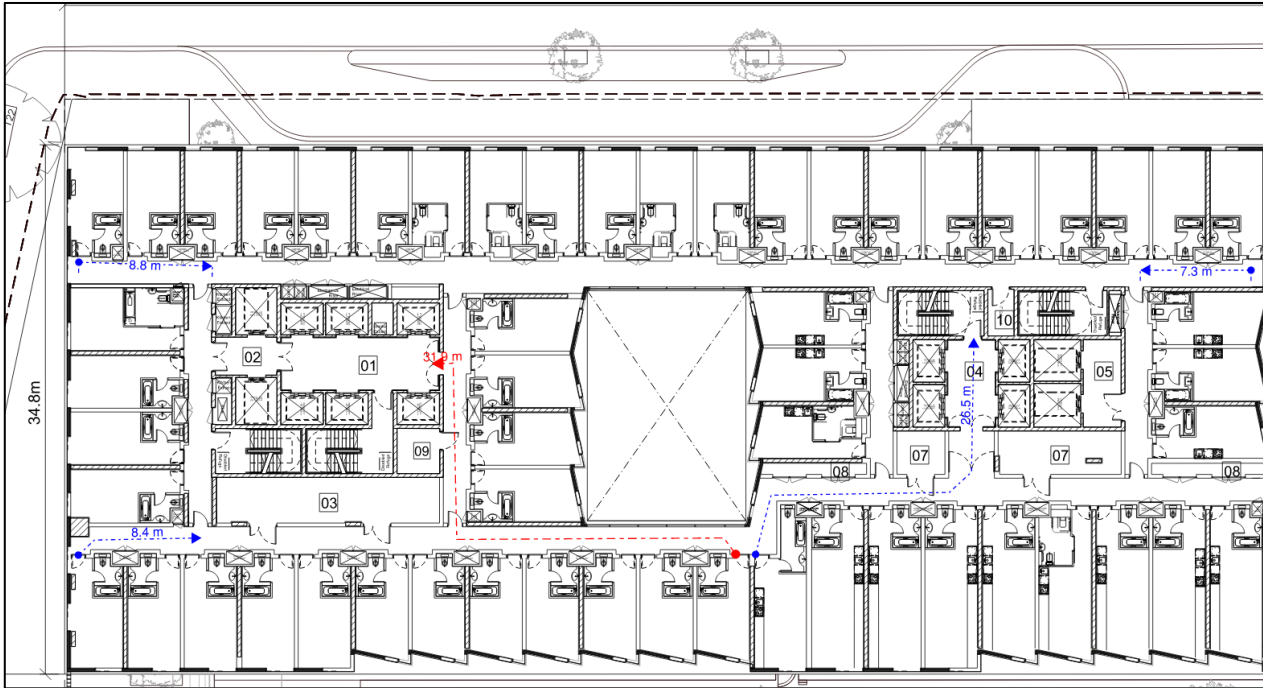


Figure 3 – Levels 2 to 8

It is recognised that some occupants may have difficulty in escaping via stairs. Additional features are proposed to ensure all the buildings guests can escape in a safe and dignified manner.

Each stair will be provided with a disabled refuge to provide a safe space for mobility impaired occupants to wait for assistance. Each refuge will have a two-way means of communication to ensure that a mobility impaired occupant can alert management of their need for assistance.

Each core will be provided with a lift that can be used by management to assist the evacuation of any mobility impaired guests. The lift will be provided with appropriate features to ensure it can be used in a fire e.g. secondary source of power etc.

A management plan for the evacuation of mobility impaired occupants will be developed prior to occupation.

4.3 Basement Conference and Pre-Function

Basement 2 contains the conference/ballroom. This is a flexible space that could be sub-divided to allow two or three different events simultaneously and has been designed to cater for up to 1,400 customers and staff and this will form the basis of the licensing agreement for that space.

The basement is served by six 1.4 m wide protected stairs which provide the required capacity.

The stairs are accessed via a protected corridor that runs around the perimeter of the conference room (as illustrated in Figure 4 below). This ensures that there are alternative routes of escape available allowing for any sub-division.

The racetrack corridor is approximately 150m long which means that escape distances within this corridor exceed 45 m. This can be justified on the basis that this will be designed as a protected corridor and the adjoining spaces are sprinklered. Sprinklers are designed to control fires to a small size and will reduce the quantity and temperature of the smoke produced. Longer distances are therefore possible given the reduction in overall risk. The travel distances in this area will be evaluated further in the next stage of design and any necessary analysis needed to support the arrangement will be provided.

The escape distances in some of the basement rooms needs review and may require some adjustment as the design develops after planning. These rooms will generally be limited to the recommended maximums of 18 m

in a single direction and 45 m where there is a choice. However, longer distances can be justified using fire engineering due to the reduction in risk as the building is sprinklered.

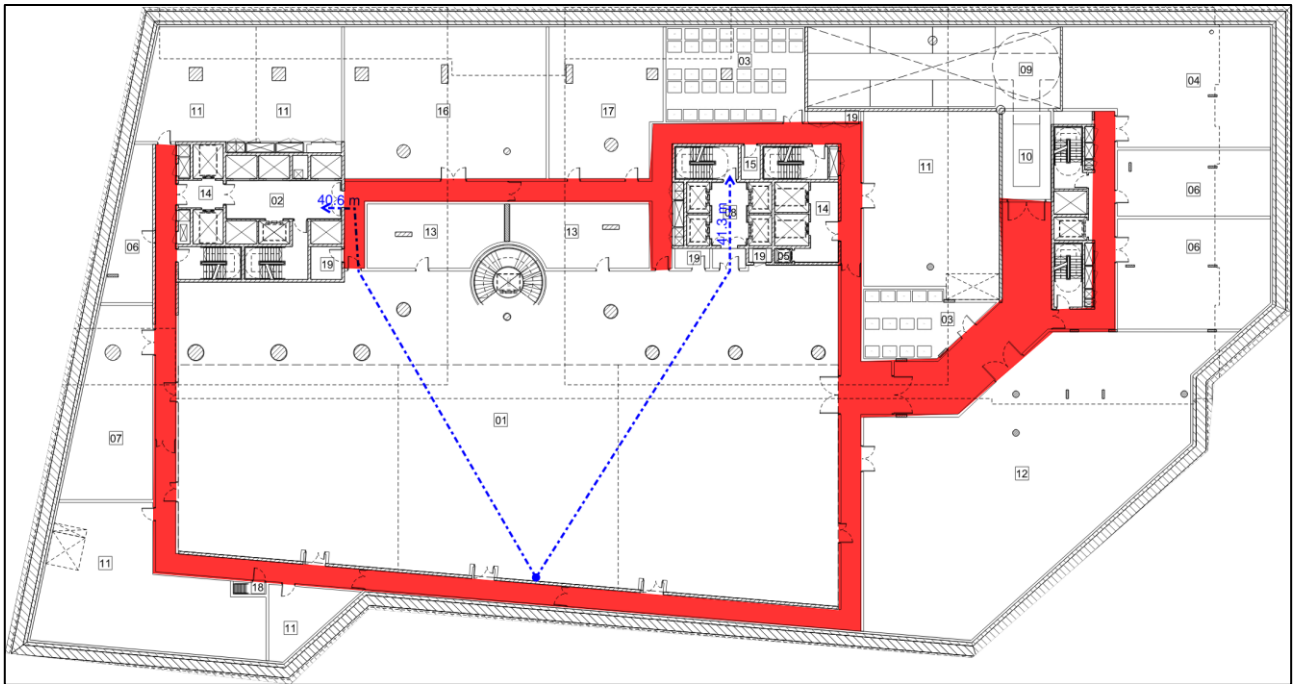


Figure 4 - Basement Conference Room and Racetrack Escape Corridor

4.4 Mezzanine and First Floor Business and Restaurant Areas

There are restaurants and syndicate/conference areas at mezzanine and first floor. These areas are served by four 1.4 m wide protected escape stairs. The stairs are sufficient to deal with 1,340 customers and staff on both levels at the same time with no more than 840 occupants on any one level.

4.5 Stair Sizing

The stairs have been sized based on the stair capacities given in Table 3.2 of the Approved Document B. They are sufficiently sized to deal with the calculated occupancy of the guestroom levels (2 occupants per room) and the design occupancies specified in the previous sections for the function areas.

4.6 Protected Escape Stairs and Final Exits

All stairs in the hotel are designed as protected stairs. These will be separated from the accommodation by fire resisting lobbies or fire protected corridors.

The stairs are inboard and exit to a place of safety outside the building via protected corridors. The final exit doors will open in the direction of escape.

The stairs serving the basement are separate stairs to those serving the above ground levels and have separate final exit corridors leading to outside. This arrangement ensures that a fire at basement level cannot impact on escape from the above ground sleeping areas.

4.7 Assembly Area

There final exits lead onto the pavements adjoining Cromwell Road, Ashburn Place, and Courtfield Road and allows occupants to rapidly disperse away from any potential risk.

There is an extensive garden area within the hotel demise to the west of the building which could be used as an assembly point, see Figure 5.

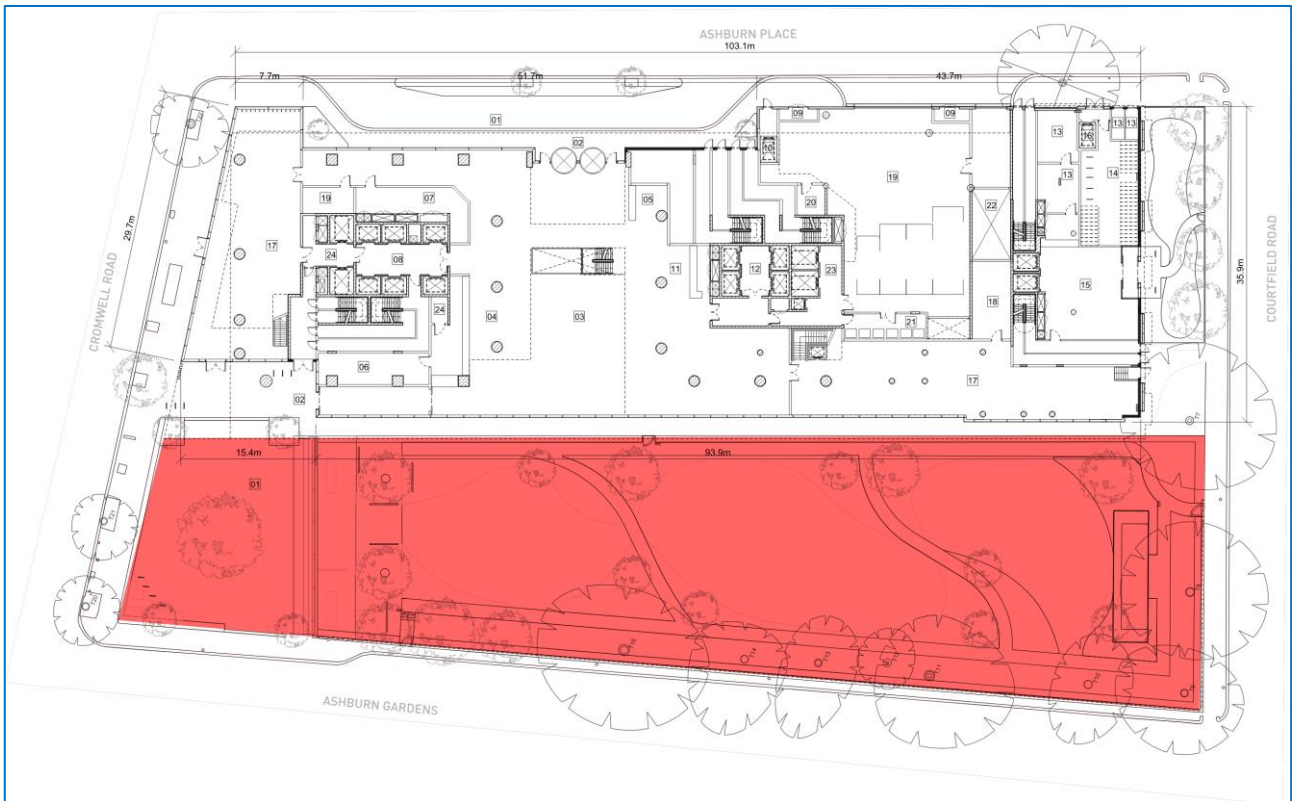


Figure 5: Fire Evacuation Points

5.0 CONSTRUCTION AND COMPARTMENTATION

5.1 Structure

Structure will be designed to achieve 2 hours fire resistance.

5.2 Compartmentation

All floors in the hotel will be designed as compartment floors achieving at least 90 minutes fire resistance. There will be some openings between basement, ground, mezzanine and first floors to allow open circulation stairs. A fire engineering case will be developed to permit this on the basis that the building is sprinkered and these floors are separated from areas of sleeping risk by compartment floors.

Any risers or service shafts and lifts penetrating compartment floors will be designed as protected shafts achieving 90 minutes fire resistance.

The firefighting shafts will be enclosed in construction achieving 2 hours fire resistance.

The guestroom corridors will be enclosed in construction achieving 30 minutes fire resistance.

The hotel will be separated from the residential apartments by 2 hours fire resistant compartment walls.

Services such as pipes and ducts will be designed to maintain the integrity of any compartment or fire barrier through which they pass using conventional solutions e.g. fire dampers, fire resisting ductwork, proprietary fire sealing systems etc.

5.3 Internal Wall and Ceiling Surfaces

The internal wall and ceiling surfaces will be designed to meet the guidance in Section 6.1 of the Approved Document B Volume 2.

5.4 External Walls

The external walls of the building will be designed using non combustible materials.

The risk of fire spread to adjacent buildings has been evaluated. The elevations are sufficiently far enough from the relevant boundary to minimise the risk of fire spread to adjacent buildings.

5.5 Cavities

Cavity barriers will be provided in accordance with the guidance in the Building Regulations Approved Document B Volume 2. This includes both internally within floor and ceiling voids and also any cavities in external walls where appropriate. Openings and similar penetrations will also be provided with appropriate cavity barriers, cavity closers etc in order to achieve the required fire separation as set out in Building Regulations guidance.

6.0 FIRE FIGHTING ACCESS AND FACILITIES

6.1 Fire Vehicle Access

Fire vehicles can readily access the building via Cromwell Road, Ashburn Place, and Courtfield Road. Fire vehicles can park within 18 m and in sight of the final exit from the fire fighting stair and lift cores.

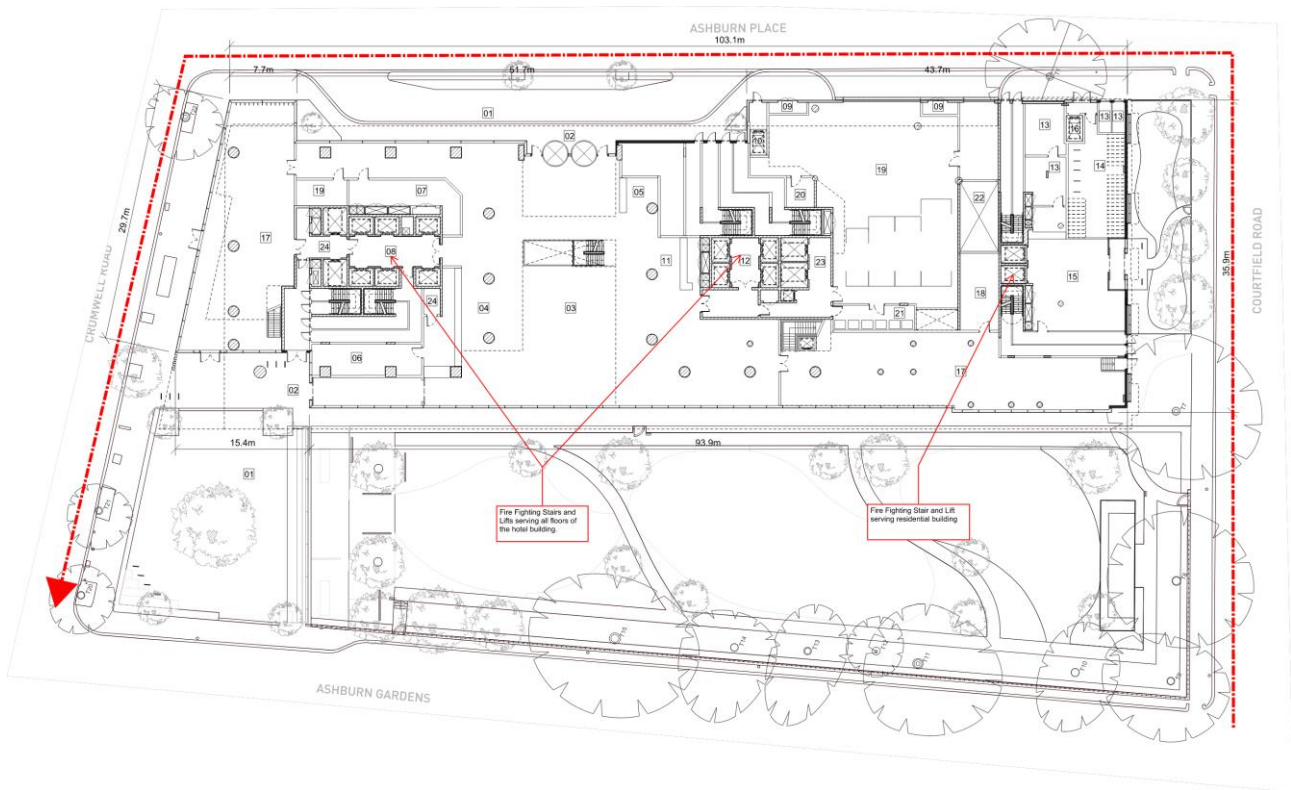


Figure 6: Fire Vehicle Access and Fire Fighting Cores

6.2 Fire Fighting Stairs and Lifts

Fire fighting stairs and lifts will be provided to serve all floors of the hotel (both above and below ground levels). The lifts and the stairs will be connected by a smoke vented fire fighting lift lobby at every level.

A suitable mustering area will be provided in front of the fire fighting lift at ground floor to assist fire fighters upon entry.

Lobby smoke venting will be via a fan assisted smoke shaft.

6.3 Wet Risers and Hose Cover

The towers are > 50 m above ground. Wet riser fire mains will be provided in the building. All areas will be within 60 m hose cover.

The inlet connection to the emergency replenishment of the suction tank of the wet riser fire main will be within 18 m and in sight of the fire appliance set down point.

6.4 Basement Smoke Control

The two basement levels will be provided with mechanical smoke extract designed to achieve 10 air changes per hour. This system will operate upon activation of the fire alarm or sprinklers to assist fire fighting operations.

6.5 Hydrants

It is anticipated that the existing fire hydrants provided in the adjacent public roads will adequately serve this building. However, this will be reviewed and if necessary additional hydrants will be provided to satisfy the parameters in the Approved Document B.

7.0 RESIDENTIAL

7.1 Sprinklers

The residential will be sprinklered. This is in line with changes to the Regulations that are due to come into effect in late 2020 and will ensure a high standard of fire safety for residents.

7.2 Evacuation

Apartment buildings have traditionally been designed on a defend in place or stay put strategy. This strategy will be the base case for the apartment building. However, the intention is that there will be a facility built into the apartment fire alarm systems that will enable the fire brigade to initiate a full or partial evacuation of the building at their discretion.

7.3 Corridors, Stairs and Lifts

The apartment building could be designed with a single escape stair. However, it is proposed that two stairs are provided. These serve all levels with the exception of mezzanine level and roof which will only have access to a single stair.

The following fire safety features will be provided in the communal areas:

- The communal residential corridors will be separated from the apartments by fire resisting walls.
- The corridors will be provided with smoke vents or smoke extract system to vent smoke from the corridor and to protect the escape stair.
- The corridor escape distance is compliant (<15 m)
- The escape stairs will be enclosed in fire resisting walls and accessed through fire doors.
- Both stairs exit to outside via a protected corridor
- One of the lifts will be designed as a fire fighting lift (See Figure 6).
- Fire mains (wet or dry as the height of the building dictates) will be provided in the staircases to assist fire fighting operations.

The provisions provided in an apartment building are designed to minimise the risk of fire spread beyond the flat on fire and allows the residents of non fire flats to stay in their own homes (stay put strategy). This strategy applies to all occupants both able bodied and mobility impaired.

For that reason, Building Regulations guidance does not make any specific recommendation for the need for any additional features to assist mobility impaired occupants who use the building. However, the design will comply with the policy in the intend to publish London Plan and the second lift will also be provided with additional features e.g. standby power etc to enable it to be used as part of the strategy for the evacuation of mobility impaired occupants.

Fire fighter wayfinding signage will be provided in the building in accordance with latest Building Regulations Guidance.

7.4 Construction Methods and Materials

The external walls will be designed to comply with the Regulation 7 of the Building Regulations and the latest guidance in the Approved Document B.

In particular, all parts of the external wall will be constructed of either A1 or A2-s1, d0 materials. This includes specified attachments such as balconies.

There are specific exemptions noted in Regulation 7(3) and these will be followed as appropriate.

The building's structure will achieve two hours fire resistance. Compartmentation, fire stopping, cavity barriers etc will comply with Building Regulations guidance following the principles set out in Section 5 above.

8.0 MANAGEMENT AND FUTURE MODIFICATIONS

Prior to occupation, a detailed fire safety manual will be produced that provides an explanation of the overall fire safety strategy, the various fire safety systems and the requirements for management in terms of maintenance, evacuation, etc.

There is further guidance on fire safety management in BS9999 which building management can draw from when developing their emergency plans.

A Fire Risk Assessment will be carried out at the time of occupation and will be reviewed at least annually or whenever there is a change.

Any future modifications that comprise building work will be required to be designed and installed to meet the buildings fire strategy and Building Regulations at the time that work is being carried out.

9.0 ABOUT THE AUTHORS OF THIS STATEMENT

JGA are a highly experienced team of specialist fire engineers that have been operating in the UK and Ireland for more than 26 years. The lead engineer on this project is a Chartered Fire Engineer with over 20 years of fire engineering experience.