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London Borough of Barnet

The London Fire Commissioner is the fire and rescue authority for London

Date: 1st October 2024
Our Ref: 30/010303
Your Ref: 24/2686/OUT

Dear Sir/Madam

RECORD OF CONSULTATION/ADVICE GIVEN

TOWN AND COUNTRY PLANNING ACT 1990

SCOPE OF WORKS: Comprehensive, phased mixed-use redevelopment of the site comprising of residential (C2, C3, and Sui Generis) and a range of town centre uses, flexible commercial business and service, hotel, learning and non-residential (Use Classes E/C1/ F1/ Sui Generis), within a range of tall buildings, together with a new transport interchange, basement bus depot, public realm, car and bicycle parking, public open space, hard and soft landscaping and other associated works. (OUTLINE APPLICATION with full details in respect of access for phases 1, 3 and (in part) 2 and (in respect of part of phase 1) landscaping).

Further information provided by the applicant for consultation purposes only (not forming part of the formal description of development set out below):

The Outline Planning Application includes an Illustrative Scheme which indicates one way in which the development for which planning permission is being sought could be delivered. The Illustrative Scheme contains:

- New buildings including tall buildings up to 29 storeys
- 3,365 new homes (Use Class C3)
- 463 student or co-living units (Sui Generis)

in addition to a new transport interchange commercial, hotel, learning and non-residential uses, streets, open space, landscaping and public realm including improvements and public access to the Deans Brook Nature Reserve

PREMISES ADDRESS: Broadwalk Shopping Centre And Associated Surface Level Car Park, Edgware Bus Station, Edgware Bus Garage And Redhill Medical Centre And Deans Brook Nature Reserve Edgware HA8

DOCUMENTS REVIEWED:

- Outline Fire Statement, Edgware Town Centre, Ballymore, Rev. P04, 05/07/2024
- Outline Fire Strategy, Edgware Town Centre, Ballymore, Rev. P02, 05/07/2024

PLANS REVIEWED:

N/A

The London Fire Commissioner (the Commissioner) is the fire and rescue authority for London. The Commissioner is responsible for enforcing the Regulatory Reform (Fire Safety) Order 2005 (The Order) in London.

London Fire Brigade (LFB) has been consulted with regard to the above-mentioned premises and makes the following comments/observations:

Fundamental Concerns

1. We note the scope of works, as detailed in the 'Outline Fire Statement' does not seek to secure planning permission for many elements of the development including the detailed design of the bus garage, detailed fire strategy for the bus garage or transport interchange, and the detailed strategy for the provision of the EV bus fleet and associate infrastructure. While we appreciate some further design detail will follow, the fire strategy suggests that the bus garage will initially be expected to house 190 internal combustion engine buses, but will be expected to later house EV (Electric Vehicle) buses 'following agreement on the appropriate fire safety measures with the relevant fire authorities'.

   The structural integrity of many of the blocks above the bus garage are intrinsically dependent on the structural integrity of the bus garage below. This is particularly relevant in this proposal as the potential for so many EV buses poses risks that are not fully understood by the industry at this point in time. The general expectations of guidance may therefore be inadequate in protecting the structural elements of the garage in the case of an EV bus fire, and therefore may provide inadequate protection from structural collapse to the blocks of flats above. Therefore, in our view the different parts of the development cannot be viewed independently, and we recommend that the Planning Authority consider the site as a whole in the context of the London Plan 2021 policies D5 and D12, and to assist we provide further detail below.

   Furthermore, there may be limited scope for subsequent changes to the structure to appropriately address the risk posed by EV buses if not accounted for within the initial design. In our opinion, either the scheme should be designed with EV buses in mind from the outset, or a planning condition be set to require the scheme to be agreed before EV buses can be introduced. The general statement within the fire strategy to seek agreement from fire authorities is insufficient in our view, and should the scheme continue without fully accounting for EV buses and the potential remains for them to be introduced, LFB may consider the need to issue an alterations notice under the Regulatory Reform (fire safety) Order 2005.

2. We note that a QDR will be undertaken but would suggest that the QDR should examine the viability of the proposal itself, not just be relied upon as a route to justifying a pre-determined decision or outcome. In any event, we would expect that any design that falls outside the recommendations of, or scope of, guidance documents such as Approved Document B and BS 9999:2017 should follow a fire engineering framework similar to the framework detailed in BS 7974:2019; a process that demonstrates the validity of the fire safety design solutions.

   One of the main factors in any such framework or QDR is the 'What if'/sensitivity study (BS 7974:2019, clause 5.5.3 refers) which includes assessment of system failures or foreseeable events which may negatively impact on the ability of the proposed design to demonstrate a suitable level of fire safety. This may include (but is not necessarily limited to):

   a. Failure of any proposed mechanical smoke ventilation system (MSVS);
   b. Failure of any automatic water fire suppression system (AWFSS);
   c. Failure of any other risk-critical active fire safety systems, such as fire and smoke curtains.

As you will appreciate, London Plan 2021 policy D12 expects the 'highest standards of fire safety' but an approach such as that highlighted above would be the minimum expected for a development such as this in our opinion.

Outline Fire Statement, Edgware Town Centre, Ballymore, Rev. P04, 05/07/2024

2.1 Application Information

Response to LFB Feedback – Item 4

3. We note the proposed design fire sizes. We highlight that the effects of a multiple electrical vehicle fire are not currently known in industry. Therefore, it is unclear why a 30MW peak heat release rate has been selected and what consideration has been given to multiple vehicles being involved in a fire which is foreseeable and should be a consideration of the design approach.

   Furthermore, it is unclear what physical testing will be carried out and how this will validate the proposed approach. We also highlight that a single physical test of an EV bus will not provide an understanding of all potential fire behaviour from EV buses as it will not capture the significant variability of potential EV fires, and will not assess the potential of multiple EV buses being involved.

Blocks 3.1 – 3.9

4. Whist we note the bus garage will be at basement level, we note that some blocks have two basement levels. It is unclear whether both basement levels will be used as part of the bus garage.

9. Local Development Document Policies Relating to Fire Safety

5. We note the proposal to include a firefighters lift, however there should be sufficient numbers of firefighters lifts provided so that if a firefighters lift is out of service (e.g. as a result of breakdown or maintenance), there is at least one that is still available for use from all areas of the building. Therefore, the level of provision should be reviewed for this design.

6. We note the proposal to include evacuation lift(s) and that a capacity assessment will follow. There should be sufficient numbers of evacuation lifts provided such that, if an evacuation lift is out of service (e.g., as a result of breakdown or maintenance), there is at least one that is still available for use from all areas of the building.

   Design teams and developers should be planning for the new requirements under the Building Safety Act for in scope buildings once occupied including the need to provide a safety case review. The design as currently proposed will, in our view, have implications on those responsible for demonstrating the ongoing safety in the building.

BWE-MOT-ZZ-XX-RP-YF-07004 Rev. P04

7. LFB note the commentary that is has been proposed that designing the road based to 12.5t has been deemed reasonable. We disagree with this, and it is our opinion that access requirements should be in accordance with Guidance Note 29: Access for Fire Appliances.

Outline Fire Strategy, Edgware Town Centre, Ballymore, Rev. P02, 05/07/2024 –

Note – the following aspects are raised as part of the planning consultation as they may be difficult to rectify later during the Building Regulations process if not accounted for at the outset.

2.3 Means of Escape

2.3.1 General

8. We note that it is proposed that the entire residential building will evacuate upon activation of a fire alarm in a circulation or non-residential area which is a significant departure from existing fire safety guidance. We expect that consideration will be given to ensure the residential building has the appropriate evacuation strategy, and is designed to account for that strategy.

9. We note the commentary that there will be the ability for the fire service to simultaneously evacuate the development. We expect instead that the residential buildings will be provided with a BS 8629 evacuation alert systems for use by fire and rescue services.

2.3.2.1 Disabled Refuges

10. It is noted that disabled refuges are to be provide within each stair/lobby of the non-residential areas. It is unclear where these areas are located and why the provision of an evacuation lift is not proposed for those unable to use the stairs.

2.3.3 Horizontal Escape

Bus Garage

11. We note the commentary that the bus garage will be comply with the travel distance noted in Table 2-5. It is unclear whether this refers to the 'Maximum Travel Distance' or 'Maximum Permittable Travel Distance with Additional Fire Protection Measures'. We also note that the bus garage will be provided with an L1/M fire detection and alarm system and may be provided with an aspirating system subject to the QDR assessment. This is an example where we question how it has been determined that an enhanced level of protection has been provided to this area before the QDR assessment has been carried out and the level of fire detection and alarm system has been determined. Therefore, in our opinion the system provided is not an enhancement and should not be used to justify the extended travel distances within the premises.

12. Whilst we note the fire detection and alarm system is subject to the QDR assessment, we question what consideration, if any, has been given to the potential for 'off gassing' from an EV, and how this will be detected at the earliest opportunity.

2.3.7 Vertical Escape

13. We note that it is proposed that two stairs will be provided to all residential buildings over 18m. We have been provided with floor plans with limited detail so have been unable to assess whether the proposed arrangements are suitable.

    We expect true alternative escape routes where occupants can turn their back on a fire to reach an alternate stair. These should be independent stairways with separate lobbies, where occupants are not required to pass through the lobby of one stairway to reach the other.

2.6 Means of Warning

2.6.1 Detection

14. We acknowledge the commentary that the residential buildings will include functionality for initiating total building evacuation. The London Fire Commissioner would recommend an

evacuation alert system for use by fire and rescue services in this specific complex building in accordance with BS 8629:2019 - Code of practice for the design, installation, commissioning and maintenance of evacuation alert systems.

To comply with the guidance in Approved Document B set by the Secretary of State for compliance to the Building Regulations, blocks of flats with a top storey more than 18m above ground level should be provided with an evacuation alert system for use by the fire and rescue services. It is therefore our expectation that that an evacuation alert system, designed and installed in accordance with BS 8629:2019, is provided to the building.

2.7 Internal Fire Spread

2.7.1 Structural Fire Resistance

15. As above, we question what consideration has been given to ensuring the structural integrity of the residential buildings that will be above the bus garage. We assume this will be part of the QDR assessment, that this may have significant implications for the design and therefore await the outcome.

2.7.2 Compartmentation – Bus Garage

16. We have several concerns with the proposed compartmentation:
    a. We note the proposed inclusion of fire barrier(s) between rows of buses. It is unclear what level of fire resistance or integrity these will offer, which will enable them to prevent fire spread.

    b. Whilst we note that fire shutters are proposed and consideration will be given to the prevention of smoke leakage, it is unclear how this will be assessed.

    c. We note that active fire shutter assemblies (hereafter referred to as the "fire shutter(s)" are proposed to be used between rows of buses. In our opinion, the use of fire shutters for the proposed application does not provide equivalence to traditional passive fire protection, composed of fire resisting walls and protected openings. This is in part due to the increased maintenance and testing expectations placed upon the responsible person by fire shutters. We recommend that the proposed use of fire shutters is appropriately justified with consideration given to the failure of the fire shutters as part of the QDR process for this application or for the proposals to be reconsidered.

    d. Significantly, it has not been satisfactorily demonstrated that the proposed measures are appropriate given the potential for an incident involving an EV emitting a toxic vapour, and the subsequent potential for a vapour cloud explosion if that cloud is confined.

2.8 Facilities for Fire and Rescue Service

2.8.1 Firefighting Shafts

17. We note that a minimum of 6 firefighting shafts are proposed to be provided in the bus garage. It is unclear whether these will be independent or descend from the blocks above.

2.8.2

18. We note the proposal to consider providing additional outlets within compartments if hose laying distances are not achieved. Connecting to an outlet within a fire compartment is not compatible with LFB's firefighting procedures and may pose a risk to firefighter safety. Therefore, we

recommend the design is revised to provide appropriate access to firefighting water supplies for attending fire crews.

2.8.3 Fire Mains

19. We note the proposal to include wet riser outlets around the perimeter corridors as per section 2.3.5 of the fire strategy and we also note the commentary to include dry falling mains. In our opinion, the suitability of the proposal to provide a combined fire main system should be considered as part of a QDR process for the development and this should consider aspects such as (but not limited to):

    - The potential vulnerability of fire main pipework distribution within the development, for example the potential for utility or other construction or repair works to damage a section of pipework and result in the non-availability of fire main provision to multiple buildings;

    - The resilience of the system and its components and any implications on safe occupation from any system failure;

    - The potential for multiple fire events to take place simultaneously, which would not normally be considered as part of the fire safety design for a single building, but which may be reasonably foreseeable for a site with multiple buildings and which may require the system design to exceed the minimum requirements of BS 9990;

    - Optimum locations of and access to isolation valves, as required in Clause 4.1.1 of BS 9990:2015;

    - The format in which information about the status of the system will be provided to building management staff and fire and rescue service personnel.

2.9.1 Smoke Control

20. We highlight the conflicting information being provided where the smoke extract rate is being determined based on a fire size of 60 MW, however the 'Outline Fire Statement' states a 30 MW fire size will be used (see comment 3). Further justification is required on the selected fire size, and in particular how it is proposed that a potential fire can/will be controlled to that extent and how this was determined. We also question how the provisional extract rate has been determined.

2.9.2 Bus Garage Fire Suppression Systems

21. We question what consideration, if any, has been given to the possibility that none of the four fire suppression systems being considered proves to be suitable to account for the potential risks of an EV bus fire, and how this will affect the design where spatial provisions are to be made based on them.

22. Whilst the type of suppression is yet to be determined, we question what consideration has been given to the management of toxic water runoff.

Car Parks

23. We note that the proposals include enclosed residential car parking areas and recommend that consideration is given in relation to electric vehicle (EV) charging units, together with the potential fire risk posed by their battery systems. The following should be considered, preferably as part of a Qualitative Design Review (QDR) and, following the recommendations given in BS

7974. This is not intended to be an exhaustive list of considerations:

- Whether the smoke ventilation provisions for car parks are sufficient to manage the products of combustion from a fire involving one or more EVs
- Whether AWFSS require enhancements beyond the minimum recommendations of the relevant standards
- Whether the fire resistance of elements of structure should be increased beyond the minimum recommendations of this code of practice
- Whether car parking spaces served by EVCUs should be located closer to the access points to the car park for the fire and rescue services and to any fire main outlets in order to assist firefighters in applying extinguishing media to the fire
- Whether there should be provision for the safe removal of any EV car that has been involved in a fire and may still pose a risk of reignition. If access to the space is only via a car lift, for example, this may not provide such suitable provision
- Whether the water supplies provided for the fire and rescue services should be enhanced beyond the minimum requirements of BS 9990 and other relevant standards, in particular with regard to the duration of water supply available
- Suitable protection to car park internal surfaces and drainage systems to facilitate post-fire clean-up and environmental protection

This list is not intended to be exhaustive. However, it covers some of the areas of consideration that we would expect to be addressed by the project design team. We would also recommend liaising with the relevant insurance provider as they may have their own requirements.

A means of isolating the power supply to EVCUs should be provided for the fire and rescue services in a suitable location associated with, but outside of, the fire resisting enclosure to any car park containing EVCUs. This should be at the main designated access point to the building or car park for the fire and rescue services. Signage should be provided to identify the power supply isolation controls and this should state:

"FIREFIGHTERS ELECTRICAL ISOLATION SWITCH FOR CAR PARK ELECTRIC VEHICLE CHARGING UNITS"
The signage should be conform to BS 5499-1.
The location(s) of power supply isolation controls serving EVCUs should be indicated on premises information provided for firefighters.
The power supply to all EVCUs should also be automatically isolated upon actuation of the fire warning and detection system or sprinkler system serving the car park in which they are located.
EVCUs should be provided with a suitable level of water resistance to ensure that they do not pose a hazard to firefighters should they become immersed in water, either as a result of the activation of the sprinkler system or firefighting operations.
It is our strong recommendation that car parks containing EVCUs should be provided with sprinkler coverage in accordance with BS 9251:2021 or BS EN 12845:2015+A1, irrespective of whether a building is otherwise provided with a sprinkler system.

Electric Bikes

24. The proposals include a cycle storage area. It is our opinion that consideration is given to the storage (and potential charging) of electric bikes and electric scooters and the potential fire risk posed by these electric powered personal vehicles (EPPVs) which may be located within these areas. There is increasing evidence showing that EPPVs can spontaneously ignite and burn for long periods so there is an increased potential for toxic gases/smoke/fire spread. If EPPVs are to be stored in this location, then a fire risk assessment may identify this room as a place of special fire hazard and appropriate fire safety measures should be provided, taking into account the guidance provided in RISC Authority RC59 Recommendations for fire safety

when charging electric vehicles.

Secure By Design

25. It is unclear if secure by design is being considered for this premises however if there is intended to be restricted access to floors by key or electronic entry systems the following guidance should still be considered. Free firefighter access would prevent firefighting delays and damage to fire doors that might restrict the use of the premises post fire.

    Where Secure by Design guidance is to be followed, it is imperative that the fire and rescue service should have unrestricted access to all floors in the event of an emergency. The 'SECURED BY DESIGN HOMES 2023' guide provides specific guidance for larger developments containing more than 25 flats, apartments, bedsits or bedrooms shall have a visitor door entry system and access control system. The technology by which the access control system operates is outlined within UL 293, however it must provide the following attributes:

    - Where unlawful free internal movement is restricted via the lift then the fire service must be afforded access via a 'firefighter's mode' or an evacuation lift in 'evacuation mode'.

    - If unlawful free internal movement has been restricted via an access control system acting on dedicated external doorsets and any additional doorsets providing access to individual floors/ landings, then an electronic release must be incorporated within the system to allow the fire and rescue service free access to all of the communal areas of the building. The electronic release system must be weatherproof, easily identifiable and located close to the entrance that Fire and Rescue Teams would use in the event of an emergency.

    It has been agreed between the police and fire and rescue services that the most practical means of achieving this aim is to install a switch within an Access Control Box (ACB). The key system for the ACB should be of a restricted type acceptable to the local fire and rescue service. In London this is commonly a Gerda lock.

26. Please note, as highlighted above it is our opinion that that the premises would constitute a serious risk if any change is made, such as the inclusion of EV buses without the design appropriately accounting for them. Therefore, due to the nature of this project and our unresolved concerns in respect of The Order and firefighter safety, the planning applicant and the future operator of the building should be advised that we are considering whether an alterations notice will be served on the responsible person with respect to the premises under Article 29 of The Order.

General

27. The fire strategy submitted appears to cover a number of different buildings of varying heights and complexities. It is our recommendation that extensive developments such as this are addressed by a site-wide fire strategy report with individual as-built fire strategy reports for each block. The fire strategy report covers several buildings on the development which, in our opinion, makes it unclear and it also lacks sufficient detail of the specific fire provisions of each occupancy group and area of the buildings to enable us to comment fully on compliance with the Regulatory Reform (Fire Safety) Order 2005.

Open plan flats

28. Whilst we note the commentary that cooking appliances will not be adjacent to the apartment entrance, it is unclear how close they will be positioned. Guidance (ADB V1 paragraph 3.18 and BS 9991:2015, clause 9.1) recommends that cooking facilities are remote form the main entrance door and located in such a way that they do not prevent escape if they are involved in a fire. In this case, we note that the location of the cooking appliance is close to the door and that an assessment has been carried out in the form of a radiated heat analysis, in order to demonstrate its suitability. While we acknowledge that this is primarily a matter for the approving authority, it is our view that other factors should have been considered in the assessment, some of which are detailed in a – e below:

    a. the human behaviour e.g. willingness to pass a fire;
    b. the (accumulated) radiated heat, toxicity and time period for which they will be exposed;
    c. the potential fire spread;
    d. the visibility conditions;
    e. the requirement for an early warning of a fire which meets the recommendations of BS 5839 part 6 with regards to the inner room protection e.g. a smoke detection should be positioned in all access rooms and along the means of escape.

It is therefore our opinion that any analysis carried out should include the above factors and suitably demonstrate to the approving authority that the facilities are remote from the main entrance door and do not impede the escape route from anywhere in the flat.

Table 2-5: Maximum Travel Distance

29. While it might be a matter for the further detailed design and approval at Building Regulations stage, we note that an L1/M fire alarm has been proposed instead of a type M (Manual) alarm system in order to apply a BS 9999 15% reduction/increase where necessary. We disagree that a manual alarm system would be appropriate and would expect that a suitable and sufficient fire risk assessment would include an automatic fire detection and alarm system for this type of building. Therefore, in our opinion the system provided is not an enhancement and should not be used to justify the extended travel distances within the premises.

30. Whilst we note the commentary that the maximum travel distances can be increased when the ceiling height is greater than 11m, it is unclear whether this is the case and whether this enhancement is being applied.

2.3.4 Escape Route Design

31. It is unclear whether the minimum exit width per person will be reduced through the use of additional fire protection measures and if so, where this will be applied.

2.3.5 Bus Garage Perimeter Corridor

32. LFB note the proposal for the bus garage perimeter corridor. We expect this proposal to be considered as part of the QDR process with travel distances, location in relation to the proposed fire control centre, wayfinding, firefighter communications (leaky feeders), potential bridge head locations within the perimeter corridor. This is not an extensive list. We refer you to comment 26 below and await the outcome of the QDR.

Fire Control Centre

33. We note the proposal to include fire control centres, we expect these to be designed in accordance with the requirements of guidance as per BS 9999:2017, clause 24.

Figure 2-7: Bus Garage Fire Fighter Access

34. Whilst we note the access facilities provided for the bus garage, we are of the opinion that it is unintuitive for firefighters. In our opinion, the proposed design will result in a considerable delay for firefighters to commence firefighting operations. Furthermore, consideration should be given towards the additional requirement for resources for firefighting personnel, complications in wayfinding, command and control and an increased physiological impact upon firefighting personnel. We await further details on this proposal in the Building Regulations Consultation.

Any queries regarding this letter should be addressed to FSR-AdminSupport@london-fire.gov.uk. If you are dissatisfied in any way with the response given, please ask to speak to the Team Leader quoting our reference.

Yours faithfully,

Assistant Commissioner (Prevention & Protection)

The London Fire Brigade promotes the installation of sprinkler suppression systems, as there is clear evidence that they are effective in suppressing and extinguishing fires; they can help reduce the numbers of deaths and injuries from fire, and the risk to firefighters.