



INTERNATIONAL FIRE
CONSULTANTS LIMITED

PRIVATE AND CONFIDENTIAL

FIRE SAFETY REVIEW

IFC REPORT FSA/19901/01A

FIRE SAFETY ANALYSIS

807 High Road, London, N17 8ER

PREPARED ON BEHALF OF;

F3 Architects

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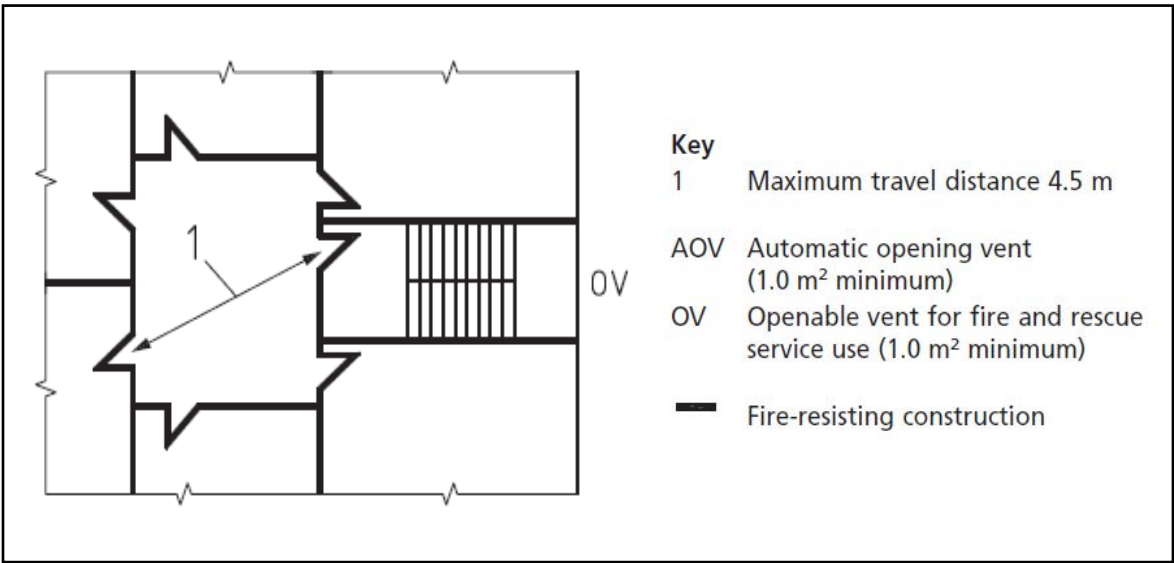
March 2020

Background

807 High Street, London, is a proposed mixed-use development consisting of commercial space and residential flats.

The residential flats will be assessed against British Standards 9991:2015 (BS9991) and the commercial space against British Standards 9999:2017 (BS9999). Where departures from the generic guidance occur due to proposed layout a performance-based design will be utilised with specific intent to satisfy the relevant regulation.

For a small-single storey building (under 11m to the tallest habitable floor), the residential flats under BS9991 would have the following to adhere to code compliance:



To Note:

- Travel distance can be increased to 7.5m with ventilation in the form of a natural smoke shaft or external wall automatic opening vent (AOV) of 1.5m²
- An automatic opening vent to top of common stair, 1m², is required.
- No connection to ancillary accommodation unless via a ventilated protected lobby (unless open sided car park).
- Service riser to open into the stair lobby and not into the stair (riser serving water pipe only is acceptable)

The commercial space is given a risk profile of A2 as occupants are considered awake but unfamiliar with the building.

Maximum travel distances for A2 are 22m in a single direction or 55m to the nearest alternative exit.

The minimum horizontal exit width for A2 is 3.6mm/person, and 3.8mm/person for vertical exit width. Doors should be at least 800mm wide or 850mm for unassisted wheelchair access.

A floor space factor of 5.0m²/person will be taken into account to approximate the maximum number of occupants in the commercial space.

Fire resistance is 60 minutes to all load bearing elements (excluding those only supporting roof).

All floors are 60 minute compartment floors therefore all vertical shafts are 60 minute protected shafts with FD30S doors to stairs and service risers, FD30 lift landing door to lift shaft.

All compartment walls at top storey to be extended to roof level and suitably fire stopped.

Fire service should be able to access all points in the building within 45m otherwise a dry riser will need to be installed for the flats.

The flats will have LD2 smoke alarm system and common stair/corridor will have Category L5 to operate smoke ventilation system.

The commercial space will have an L5 + M smoke alarm system, as inner rooms are expected. Travel distance to a call point must be no more than 45m.



Fire service access and boundaries

From the location of the parked pump appliance the distance to the furthest point in the building should be no greater than 45m.

The pump can park either in the front of the commercial space on High Road or Percival Court for the rear residential flats. For the front flats, the total distance is 53m to the furthest point on the Third Floor, and for the rear flats its 49m. Both stair cores therefore require dry risers to be installed. Inlets should be located on the external wall of the building within 18m of the parked pump appliance. There should be outlets on each floor within the stair, the Ground Floor outlet no more than 18m from the inlet. Suggested points are below (blue are inlets and red are outlets). The dry riser outlets on the ground Floor of the West stair is recommended on the half landing to line up with the stair on the upper floors. Conformation that this is acceptable should be sought from the local Fire Service.

The amount of permitted unprotected area to the non-load bearing elements is dependent on the distance to the boundaries, over 3.5m 100% unprotected area is permitted for the flats. For the retail it has been calculated individually. It is assumed there are compartment floors between the Ground and First Floor retail.

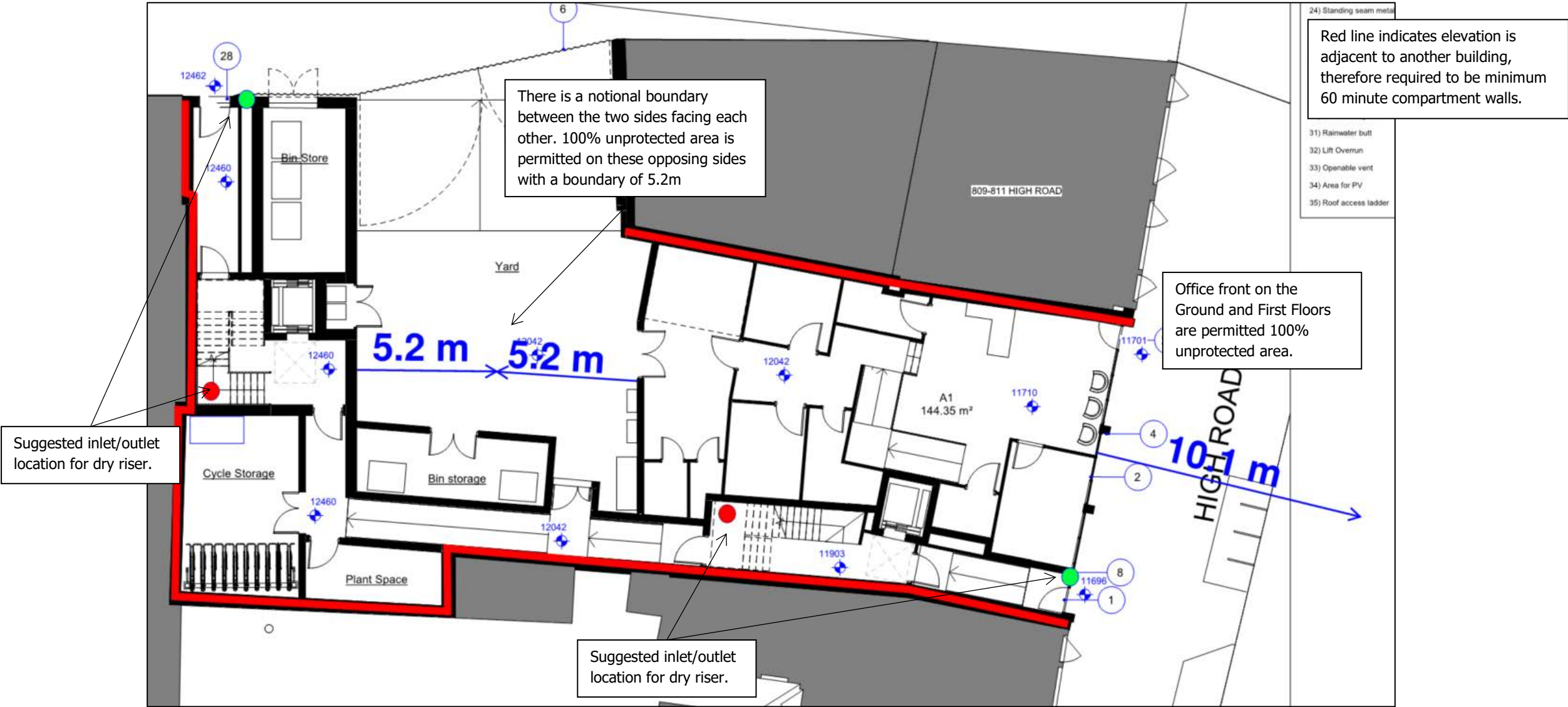


Figure 1 – Site Boundaries

Prepared By: Jessica Price

Checked By: Lee Morgan Date: 12/03/2020

Ground Floor

The retail space contains inner rooms, which are permitted as total travel distances from within the inner rooms to an exit are compliant. The maximum number of occupants expected is 29. 2 exits have been provided and all travel distances are compliant. Inner rooms should have an alarm linked to the access room to give earlier warning of a fire or suitable vision panels.

Access should be level for disabled persons, and it is expected that they can evacuate without assistance if they entered the commercial space without assistance.

The residential stairs should exit directly outside through a sterile area. Between the Plant space and Cycle Storage and the two residential stairs there needs to be a ventilated lobby. A minimum 1.5m² smoke shaft to outside will be provided.

The bin storage, cycle storage and plant space require 60 minutes fire resistant compartment. Where they open into the car park space or ventilated lobby an FD30S doorset is required.

The yard will act as an enclosed car park. Natural ventilation requires permanent vents of an area at least 2.5% of the floor area (approximately 3.6m²). As the space is small, IFC are in the opinion that it is fine to have all of the ventilation on the opening side via a grilled shutter (i.e. the opening). There will need to be a smoke detector in the car park, and when activated, the car park shutter should automatically open (this is because persons might be escaping from the car park area).

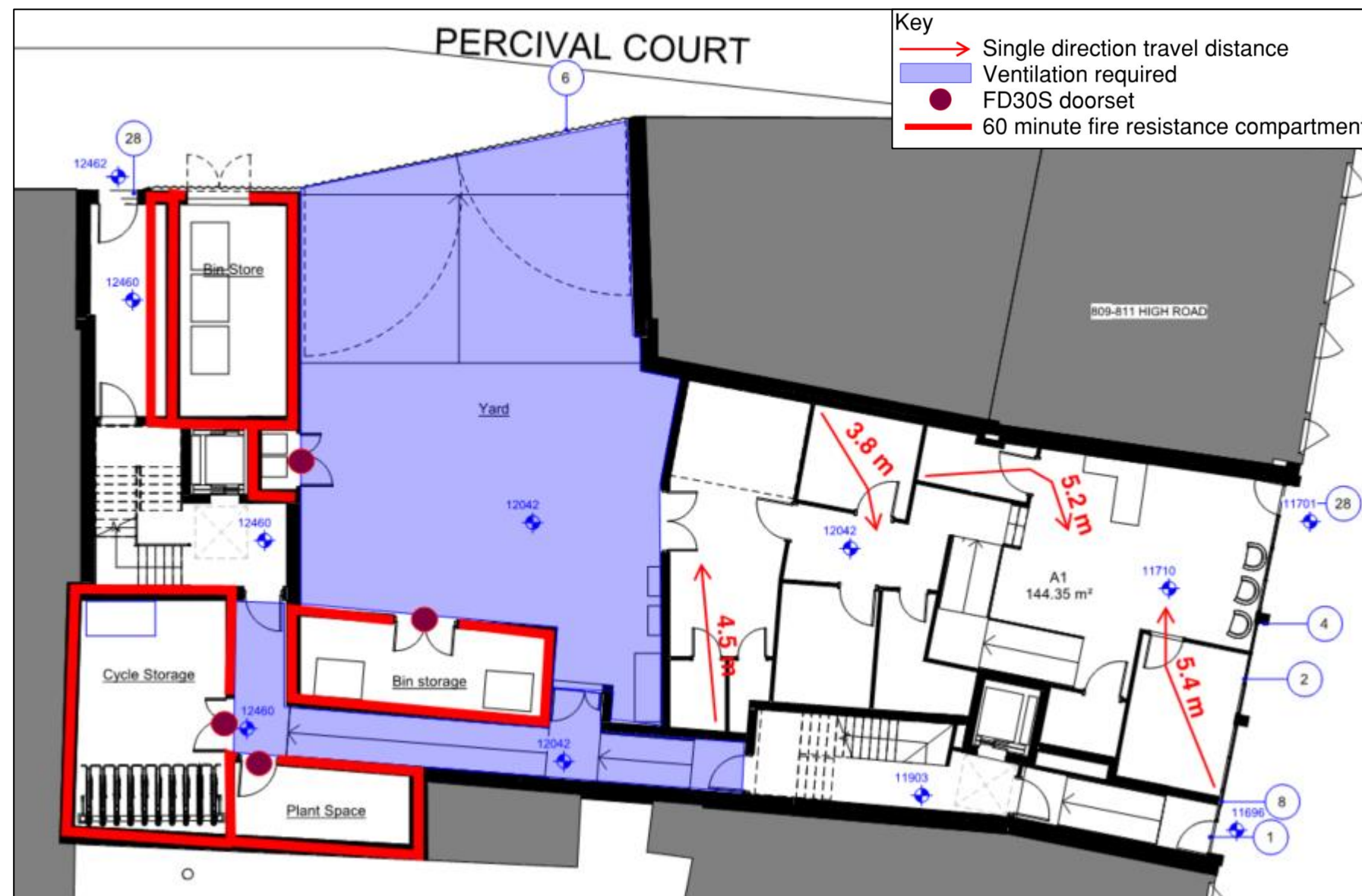


Figure 2 – Ground Floor



First Floor

There will need to be a protected lobby between the commercial unit and the stair in order for compliance (can be seen below). The maximum occupancy of the retail space is 38 persons, so a single exit is compliant. Travel distances and stair width are also compliant.

Disabled persons can access the First Floor using the lift, therefore there should be a disabled refuge in the stair. It should measure 900mm x 1400mm and not impede on the flow of persons escaping – a complaint refuge has been implemented as seen below.

Travel distance in the residential area is compliant and no ventilation is required. Flats are designed with protected hallways less than 9m and therefore compliant.

The playground and community amenity space require a low noise sounder and visual alarm. Travel distance on the amenity space is under 60m and therefore compliant.

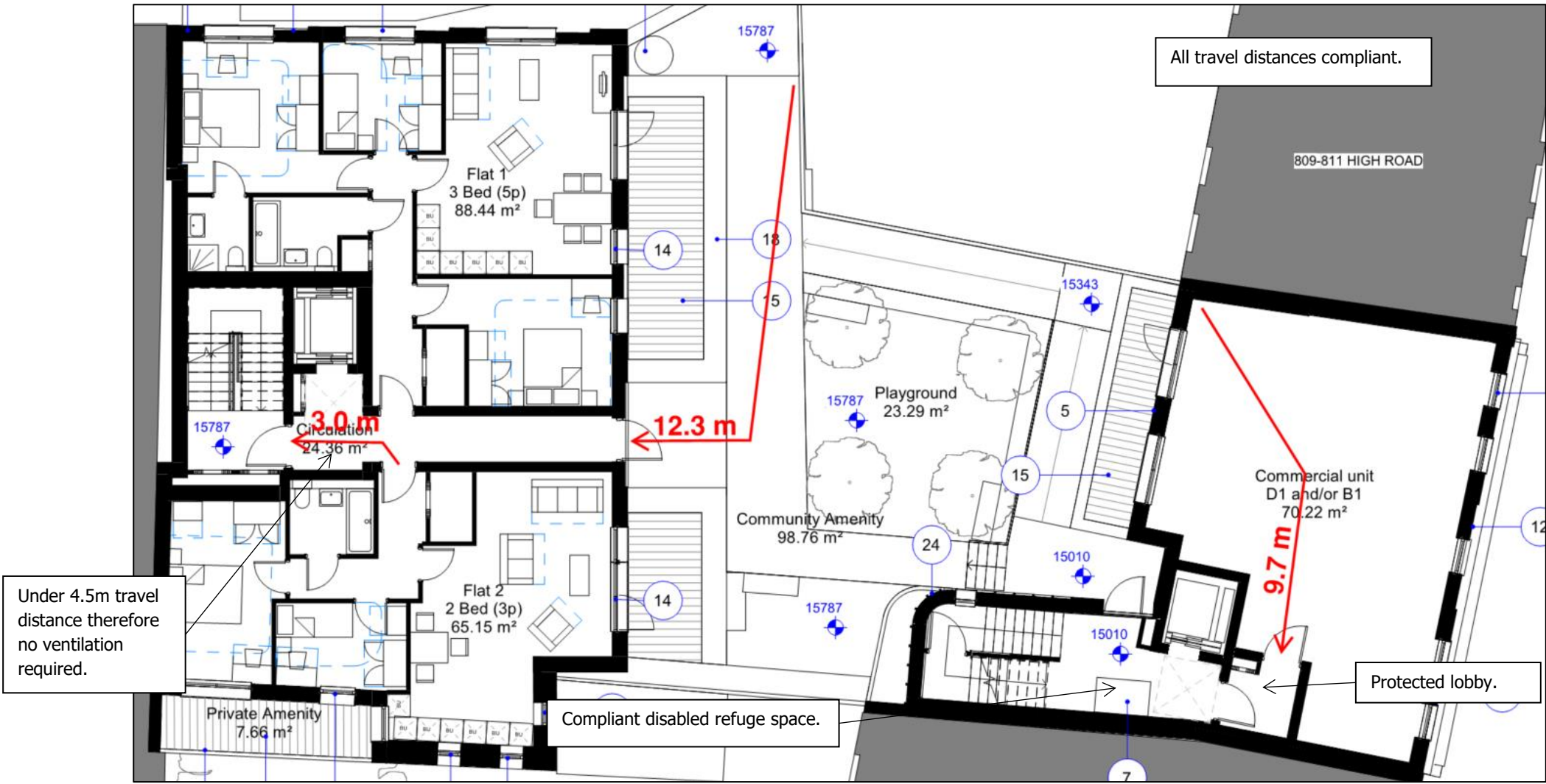


Figure 3 – First Floor



Second and Third Floors

Travel distances in the residential areas are compliant and no ventilation is required. As there is only a single flat per story on the East Wing, it is permitted to open directly into the stair. Flats are designed with protected hallways less than 9m and therefore compliant.



Figure 4 – Second Floor

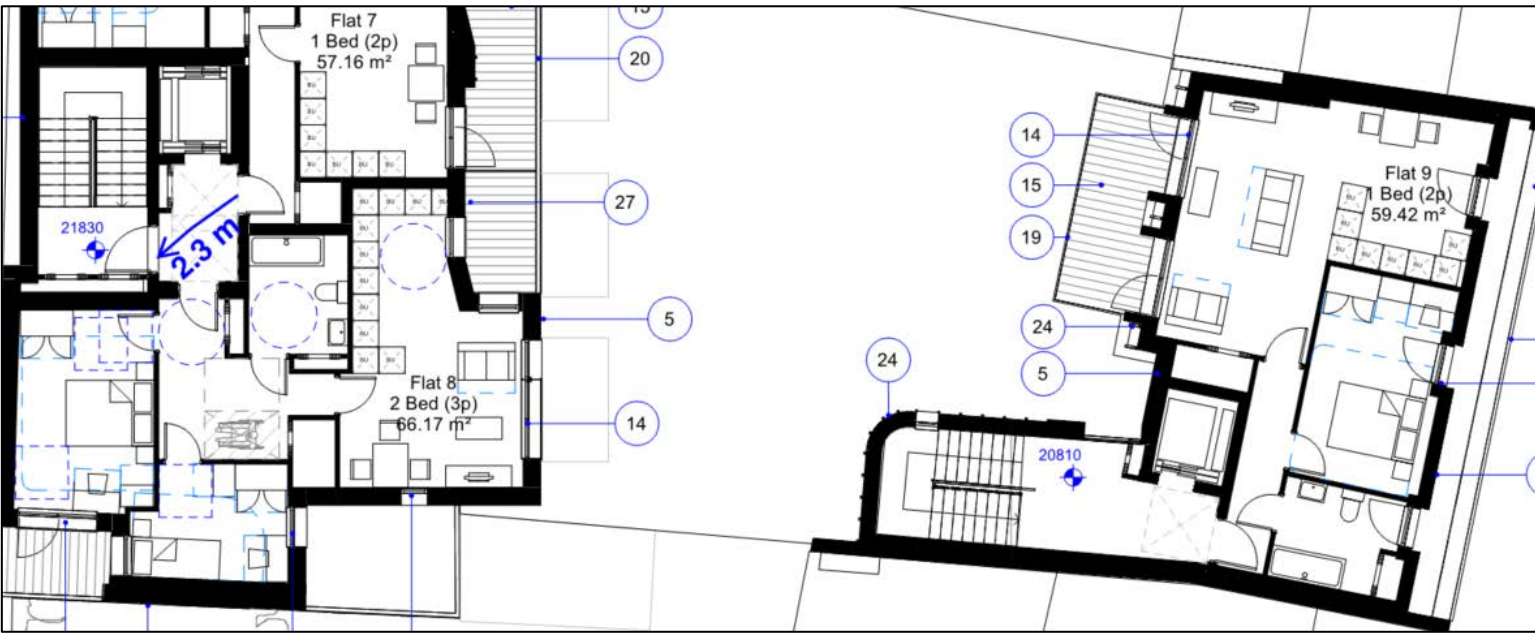


Figure 5 – Third Floor



CONCLUSIONS

The buildings, overall, are in compliance with BS9991/BS9999. Below are outlined is the review of the key features:

Fire Service Access

For the front flats, the total distance is 53m to the furthest point on the Third Floor, and for the rear flats its 49m. Both stair cores therefore require dry risers to be installed. Inlets should be located on the external wall of the building within 18m of the parked pump appliance. There should be outlets on each floor within the stair, the Ground Floor outlet no more than 18m from the inlet.

External Boundaries

The amount of permitted unprotected area to the non-load bearing elements is dependent on the distance to the boundaries, over 3.5m 100% unprotected area is permitted for the flats. For the commercial it has been calculated individually. It is assumed there are compartment floors between the Ground and First Floor commercial.

Ground Floor

All travel distances are compliant in the commercial space. Inner rooms should have an alarm linked to the access room to give earlier warning of a fire. Access should be level for disabled persons. Between the Plant space and Cycle Storage and the two residential stairs there needs to be a ventilated lobby. It can be ventilated via an actuated AOV door leading to outside.

First Floor

There will need to be a protected lobby between the commercial unit and the stair in order for compliance. A single exit is compliant. Travel distances are also compliant. Disabled persons can access the First Floor using the lift, therefore there should be a disabled refuge in the stair. It should measure 900mm x 1400mm and not impede on the flow of persons escaping. A disabled refuge and lobby have been provided.

Travel distance in the residential area is compliant and no ventilation is required. Flats are designed with protected hallways less than 9m and therefore compliant.

Second and Third Floors

Layout of the common area and the internal layout of flats are compliant. AOV's are required at the head of the stairs for ventilation.

LIMITATIONS

Our advice is strictly limited to the scope of our current brief i.e. to provide fire safety analysis of the proposed scheme for 807 High Road, as regards compliance with the prescriptive fire safety codes applicable. IFC have not reviewed any other fire safety issues arising within this development, other than those identified in our report. We offer no comment on the adequacy of any other fire safety precautions within the development, and the absence of comment on such issues should not be regarded as any form of approval. The advice should not be used for buildings other than that named in the title.

Prepared by:

A handwritten signature in black ink, appearing to read 'Jessica Price'.

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