FIRE STATEMENT

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HAMPSHIRE
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VEMCO CONSULTING
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Copy No:- 1 *of*

PROPOSED DEVELOPMENT

AT

THE BLUE LION, 133 GRAYS INN ROAD, LONDON WC1X 8TU

FIRE STATEMENT

BASED ON THE LONDON PLAN GUIDANCE

AND

APPROVED DOCUMENT B V1 AND V2 2019 EDITION (INCORPORATING 2020 AMENDMENTS)

Report Produced For: Lambournes Surveyors Ltd

Report Produced By: Vemco Consulting

Report Date: March 2022

	Name	Signature	Date
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Note: The above form is for Vemco Consulting Ltd Client Satisfaction System purposes only.

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0.0 SCOPE AND LIMITATIONS

0.1 Scope

0.1.1 This report considers the 6 headings of the London Plan guidance document (London Plan Policy D12 (A1 – A6)). This report also refers to ADB B v1 and v2 2019 (with 2020 amendments).

0.1.2 This report applies to the Blue Lion proposed ~~mixed-use (residential and commercial) development~~.

0.2 Limitations

0.2.1 The scope of this report is strictly limited to that set out in Section 1.1.

0.2.2 This report is formulated on the basis of information and industry experience available at the time of preparation.

0.2.3 It is applicable to the named project only in accordance with the Client's instructions.

0.2.4 This report may only be distributed in its entirety, without amendment. However, the Client may redact names of those involved in the production of the report, product trade names and other material that they consider sensitive.

0.2.5 The report does not constitute a certification of the project assessed.

0.2.6 This assessment is based on information provided by the client. This may include (but is not limited to) architectural drawings, data sheets, etc. Our advice is limited to the information given in those documents and is necessarily dependent upon the accuracy and completeness of that information.

1.0 INTRODUCTION

1.1 Overview

1.1.1 Vemco Consulting has been instructed by Lambournes Surveyors Ltd to undertake a fire statement in accordance with London Plan Policy D12 on a proposed mixed-use development comprising a pub and residential flats: The Blue Lion 133 Grays Inn Road, London WC1X 8TU. ADB v1 has been used to assess the residential demise located on the ground floor to the fifth floor of the building. ADB v2 has been used to assess the commercial demise at the basement and ground floor levels. The site location is shown in Figure 1.1 below.

Figure 1.1: Site location

1.1.2 The property is situated some 900m north-west of Farringdon Train Station and falls under the planning jurisdiction of London Borough of Camden.

1.1.3 The proposed development ~~is a refurbishment and airspace development of an existing 4-storey building. It comprises the addition of two residential floors and retrofitting of an existing commercial facility (pub) located at basement and ground levels. Pre-planning~~ application ref: 2021/0543/PRE.

Table 1.1: Summary of building characteristics

Building Name & Address:	The Blue Lion, 133 Grays Inn Road, London WC1X 8TU
Number of Floors:	6 (ground, first, second, third, fourth, fifth) + basement
Building Height (to uppermost FFL) (m):	Approx. 16.5m
Purpose Group(s):	1(a) Residential, 4 shop and commercial
Sleeping Risk	Yes
Evacuation method:	Stay put (residential), simultaneous (commercial)
Property Tenants:	Owner-Occupier/Rental tenants
Approx. Occupancy Numbers:	**Commercial Demise**
	Maximum number of occupants within commercial demise based on Table D1 of ADB v2: Floor space factor for **basement seating area** is based on the number of seats. Floor space factor for **kitchen** is taken as **7m²** per person (Table D1 of ADB v2) **Basement floor** Commercial seating area: 35 people Kitchen/ storage: 10 people **Ground floor** Commercial area (bar area): 110 Total for commercial demise: **155 people**
	Residential Demise
	2 x 1-bedroom flats (2P) = 4 persons 1 x 2-bedroom flats (3P) = 3 persons 4 x 3-bedroom flats (4P) = 16 persons

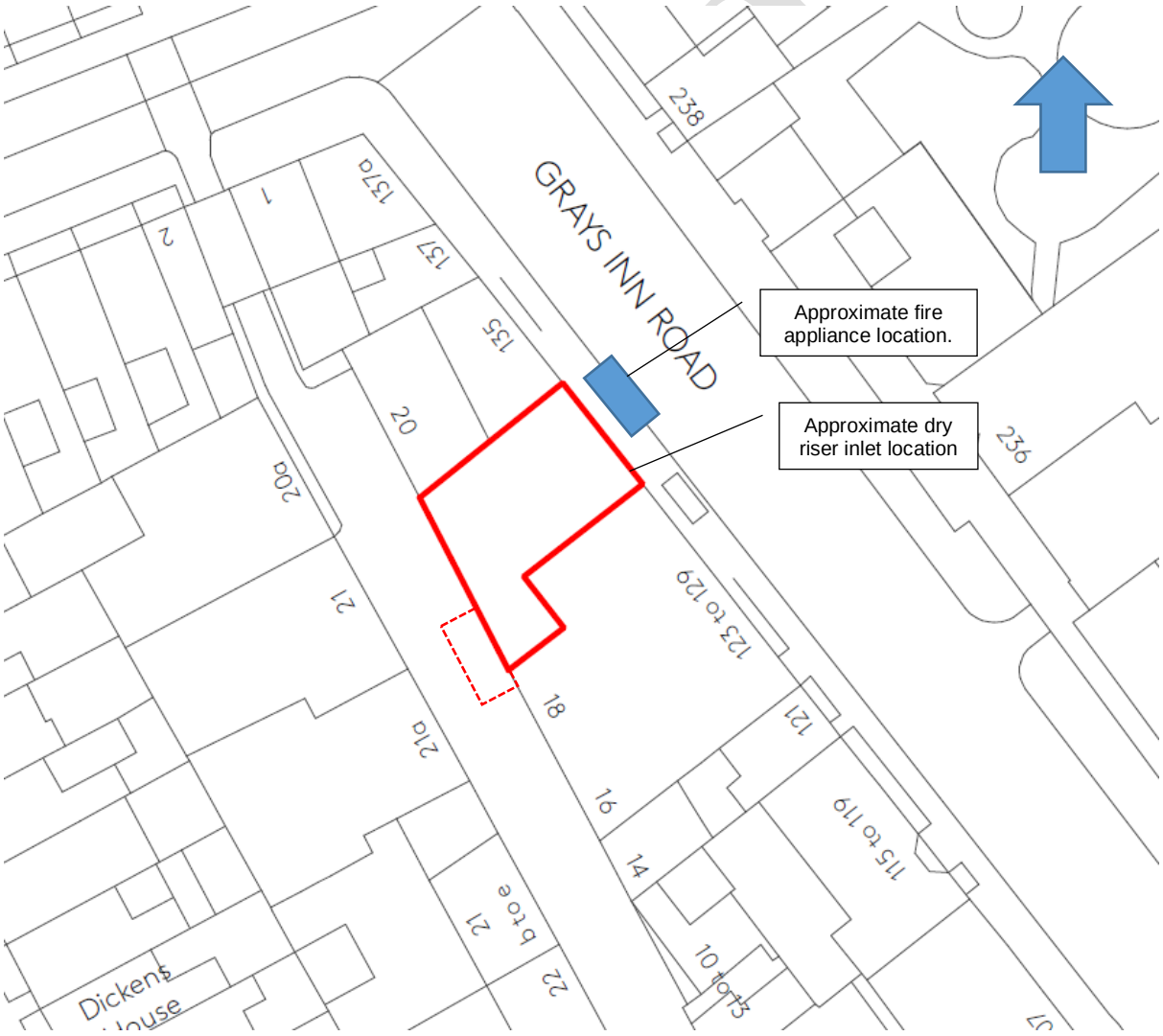
	Total: 23 persons

2.0 OUTSIDE SPACE FOR FIRE APPLIANCES AND ASSEMBLY POINTS

2.1 Areas where the Fire and Rescue Service pump appliance can be sited

2.1.1 The Fire and Rescue Service (F&RS) pump appliance can access the building from Grays Inn Road. This is the main road to the development. From here, the F&RS can access a dry riser inlet which will be sited on the front face of the building.

Figure 2.1: Relevant boundaries applicable to the development



2.2 Evacuation assembly point

2.2.1 The proposed building will be mixed-use comprising commercial and residential areas. The residential floors would not require an assembly point as they will be designed as individual flats with compartment walls and a stay-put evacuation strategy. Only occupants of the fire flat within the residential parts of the building will evacuate. The commercial demise will comprise staff and members of the public, therefore an assembly point is required for the commercial demise. The commercial demise is existing and has been confirmed (on 29/03/22) to be located outside 123 Gray's Inn Road (Eastman Dental Centre) as per the fire safety documentation of the existing pub demise.

3.0 FIRE ALARM SYSTEM AND PASSIVE AND ACTIVE FIRE SAFETY MEASURES

3.1 Active fire protection systems – fire alarm system

3.1.1 Residential means of escape is somewhat different to many other types of buildings in that only the particular apartment that has a fire in it is immediately evacuated. This is due to the level of compartmentation between each of the apartments and to reduce false alarms affecting all the people within the building. The Fire Service carries out evacuation of the other apartments if necessary. This philosophy is reflected by the stand-alone detectors / sounders, which are required in each apartment but not necessarily in the common corridors or escape routes. A smoke detection system may be required within the common areas but this is only to operate the life safety systems within that area if required i.e., automatic opening vents (AOVs).

3.1.2 The requirement is given in Part B of Schedule 1 to the Building Regulations 2010 in that 'The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire and appropriate means of escape in the case of a fire from the building to a place of safety outside of the building capable of being safely and effectively used at all material times.

3.1.3 In terms of early warning, a Grade D2 Category LD2 (owner occupied), or Grade D1 Category LD2 (rented) fire detection and fire alarm system should be installed within the residential accommodation. A L5 alarm system should be introduced within the communal areas of the residential accommodation. A minimum of Category M fire detection and alarm system should be introduced to the commercial areas. This is in accordance with BS 5839-1 and 6.

3.1.4 The smoke and heat alarms will be mains operated and conform to BS EN 14604 and BS 5446-2 respectively. The detectors will have a standby power supply in the form of a rechargeable battery and are therefore compliant with the requirements of Approved Document B v1. The positioning of the smoke and heat detectors is to accord with the guidance given in BS 5839-6.

3.1.5 The fire alarm cause and effect principles for the building can be summarised in Table 3.1 below.

Table 3.1 Fire Alarm Cause and Principles

Accommodation	Cause	Effect
Residential Accommodation – Apartments	• Single smoke or heat detector activated within the apartment	• Alarm signal sounds throughout the affected apartment only, invoking immediate evacuation. • No interlinks are proposed to any other accommodation.
Residential Accommodation – Common Areas	• Single smoke detector activated within the common corridor	• AOV at the top of the staircase will open. • Only the common corridor vents on the fire floor will open. Corridor vents on other floors remain closed.
Commercial Accommodation	• Single manual call point activated within the room	• Alarm signal sounds throughout the entire commercial area, invoking immediate and simultaneous evacuation.

3.2 Active fire protection systems – Sprinkler system

3.2.1 ADB requires an Automatic Fire Suppression System (AFSS) to be fitted to properties with floors more than 11m above ground level. At approximately 16.5m in height, the building requires a sprinkler system in accordance with BS 9251:2021.

3.2.2 All residential compartments should be fitted with sprinklers. BS 9251 defines blocks of flats above 11m but below 18m in height as requiring a Category 2 sprinkler system. This building is approximately 16.5m to the uppermost finished floor level, therefore a Category 2 sprinkler system is required (see Table 3.2).

Table 3.2 Extract from BS 9251:2021, Table 1 – Category of Sprinkler System

Table 1 — *Category of system*

Category of system	Description of building/occupancy
1	Single family dwellings such as: • dwelling house; • individual flat[A]; • individual maisonette; and • transportable home Houses of multiple occupation (HMOs) [B] Bed and breakfast accommodation [B] Boarding houses [B]
2	Blocks of flats [C], [D] Small residential care premises with 10 residents or fewer [D] Sheltered and extra care housing [C], [D]
3	Residential care premises with more than 10 residents [D], [E], [F] Student accommodation [E], [F] Dormitories (e.g. attached to educational establishments) [D], [E] Hostels [D], [E]
4 [F]	All residential buildings 18 m or higher

3.2.3 The minimum design discharge densities, number of design sprinklers that should be capable of operating simultaneously in a compartment, and duration of supply should be in accordance with Table 2 of BS 9251 (see Table 3.3).

Table 3.3 Extract from BS 9251:2021, Table 2 – Minimum Sprinkler Design Parameters

Table 2 — *Minimum design parameters*

Category of system (see Table 1)	Minimum design discharge density	Number of design sprinklers (see 5.3.2)	Minimum duration of supply
	mm/min		min
1	2.10 [A]	1 or 2	10
2	2.80 [B]	1 or 2	30
3	2.80 [C]	2 to 4 [D]	30
4	2.80 [C]	2 to 4 [D]	60 [E]

3.2.4 The non-residential demise should be provided with a sprinkler system in accordance with BS EN 12845-2015.

3.2 Active fire protection systems – Smoke control

3.2.1 Smoke control will not be provided within the non-residential demise. Smoke control will be provided within the residential demise. The smoke control system may be mechanical or natural. Natural vents should comply with either of the following:

a. Located on an external wall with minimum free area of 1.5m^2.
b. discharge into a vertical smoke shaft, closed at the base, that meets all of the following:

i. The shaft should conform to the following:
- Have a minimum cross-sectional area of 1.5m^2 (minimum dimension 0.85m in any direction);
- Open at roof level, minimum 0.5m above any surrounding structures within 2m of it horizontally; and,
- Extend a minimum of 2.5m above the ceiling of the highest storey served by the shaft.

ii. The area of vents should be a minimum of 1m^2 in the following areas.
- From the corridor or lobby into the shaft;
- At the opening at the head of the shaft;
- at all internal locations within the shaft (e.g. safety grilles).

iii. The smoke shaft should be of a class A1 material. The shaft should be vertical from base to head, with a maximum of 4m at a maximum inclined angle of 30 degrees.

iv. If smoke gets into the common corridor or lobby and is detected, two actions should take place:

- Vents should simultaneously open on the storey where the fire is sited, at the top of the smoke shaft and the stair.
- Vents within the corridors on all other storeys should remain closed, even if smoke is subsequently detected on storeys where the fire is not located [1].

3.2.2 Smoke control is required in the communal corridors and lobbies next to the stairways on all floors in accordance with Diagram 3.7 of ADB v1 and Paragraph 3.50 of ADB v1. This will be introduced within the building.

3.2.3 The protected stairways should be provided with an Automatic Opening Vent (AOV) at the top of the shaft with a minimum 1.0m2 opening area.

3.3 Active fire protection systems – Manual Fire Fighting / Extinguishers

3.3.1 Manual firefighting equipment is not necessary for the residential floors of this development under Building Regulations. Whilst the Fire Safety Act 2021 requests that first aid firefighting facilities should be provided, this is only relevant to in places of work.

3.3.2 The commercial areas on the basement and ground floors require manual firefighting equipment.

3.3.3 Selection and positioning of fire extinguishing equipment shall comply with BS5306-8:2012. The commercial areas have floor areas each of less than 400m^2, therefore the minimum quantity of extinguishers with an A rating should be as follows:

- at least two extinguishers with a Class A rating; having a combined minimum total fire rating of 26A.

3.3.4 Extinguishers should be sited in such a way that it is not necessary to travel from the site of any fire to reach an extinguisher further than the maximum distance stipulated for a Class A fire. Extinguishers should be located no more than every 30m along an escape route[2]. (Note that a 9 litre (2 gallon) water extinguisher can achieve a 13A rating).

3.3.5 Extinguishers should be available for immediate use at all times and should be located:

- in conspicuous positions on brackets, on floor stands or within cabinets;
- where they will be readily seen by persons following an escape route;
- most suitably, near to room exits, corridors, stairways, lobbies and landings;
- in similar positions on each floor, where floors are of similar appearance; and,
- where they are visible and mounted so as to position the handle approximately 1.5m from the floor.

3.4 Passive fire protection systems

3.4.1 Compartment floors will be introduced on all floors of the building. Paragraph 8.11(c) of ADB v2 indicates that, except in small premises, the floor of the ground storey should be a compartment floor if the building has at least one basement. The building under assessment cannot be classified as a small building (as defined by paragraph 4.2 of ADB v2). Therefore, the floor of the ground floor should be a compartment floor.

3.4.2 Compartment walls will be introduced between occupancies on the ground floor and between each flat on all residential floors. The stair will be a protected shaft with 60 minutes fire resisting enclosure. The kitchen will be enclosed by fire resisting construction of no less than 30 minutes in accordance with Paragraph 2.44 of ADB v2.

3.4.3 All doors serving as the front doors to flats will FD30S doors with self-closing devices. All doors within the protected entrance hall enclosure of flats will be FD20. Doors to the protected shafts will be FD30S. Doors enclosing plant rooms will be FD30. These provisions are in accordance with Table C1 of ADB.

4.0 CONSTRUCTION MATERIALS

4.1 External Wall Details

4.1.1 The following wall types have been identified at The Blue Lion.

Table 4.1 Summary of Wall Type 1 Materials

Material name	Combustibility	Reference
Masonry external leaf	Class A1	n/a
Non-combustible insulation	Class A1	e.g. Rockwool. [cited 21 April 2021]. Available from: https://p-cdn.rockwool.com/siteassets/rw-uk/downloads/datasheets/rw-slabs.pdf?f=20201025061832
SFS system	Class A1	n/a
Plasterboard and skim finish	Class A2	e.g. Gyproc FireLine Product Data Sheet – Gyproc FireLine [Internet]. British Gypsum. 2020 [cited 25 June 2020]. Available from: https://www.british-gypsum.com/products/gyproc-fireline?tab0=0

Table 4.2 Summary of Wall Type 2 Materials

Material name	Combustibility	Reference
Corrugated sheet metal	Proposed to be A1 metal	n/a
Non-combustible insulation	Class A1	e.g. Rockwool. [cited 21 April 2021]. Available from: https://p-cdn.rockwool.com/siteassets/rw-uk/downloads/datasheets/rw-slabs.pdf?f=20201025061832
SFS system	Class A1	n/a
FireLine plasterboard	Class A2	e.g. Gyproc FireLine Product Data Sheet – Gyproc FireLine [Internet]. British Gypsum. 2020 [cited 25 June 2020]. Available from: https://www.british-gypsum.com/products/gyproc-fireline?tab0=0

Table 4.3 Summary of Wall Type 3 Materials

Material name	Combustibility	Reference
Proposed A1 brickslip	Proposed to be A1 material	n/a
Non-combustible insulation	Class A1	e.g. Rockwool. [cited 21 April 2021]. Available from: https://p-cdn.rockwool.com/siteassets/rw-uk/downloads/datasheets/rw-slabs.pdf?f=20201025061832
SFS system	Class A1	n/a
FireLine plasterboard	Class A2	e.g. Gyproc FireLine Product Data Sheet – Gyproc FireLine [Internet]. British Gypsum. 2020 [cited 25 June 2020]. Available from: https://www.british-gypsum.com/products/gyproc-fireline?tab0=0

4.1.2 The above mentioned materials are not deemed to present a significant risk to life safety as they are non-combustible materials.

4.1.3 It is proposed that balconies will comprise non-combustible decking material with steel balustrading. The balconies are therefore not deemed to present a significant risk to life safety as they will be constructed of non-combustible materials.

5.0 MEANS OF ESCAPE

5.0.1 The following sections (5.1 to 5.7) demonstrates how the building will achieve compliance in respect of means of escape on each floor in line with ADB v1 and v2.

5.1 Means of Escape – Basement Floor

5.1.1 The plan in Figure 5.1 shows the intended layout of the basement floor level.

5.1.2 Table 2.1 of ADB v2 requires that travel distances from any point on the storey to the storey exit of shops and commercial purpose groups should be a maximum of 18m for one direction and 45m for more than one direction of travel. Note-1 of Table 2.1 stipulates that, *"if the internal layout of partitions, fittings, etc. is not known, direct distances, rather than travel distances, should be assessed. The direct distance should be assumed to be two-thirds of the actual travel distance".* The internal layout of the basement floor is known; therefore the actual travel distances can be used. The travel distances are compliant on the basement floor as shown in Figure 5.1.

5.1.3 Paragraphs 2.6b and 3.3b of ADB v2 indicate that in order for a single escape route at the basement floor to be compliant, the basement floor should have a maximum occupancy of no more than 60 people and the travel distance on this floor should also comply with Table 2.1 of ADB v2. There will be no more than 60 people within the basement floor at any one time and the travel distances are compliant as stated in clause 5.1.2 above.

5.1.4 According to Paragraph 3.16 of ADB v2 all stairs serving basements should be designed to accommodate simultaneous evacuation. Table 3.2 of ADB v2 indicates that a stairway serving one storey with a width of 1300mm can simultaneously evacuate a maximum of 260 occupants. This is greater than the permitted occupant capacity of 60 persons (see above). The stair width is therefore deemed to be compliant.

5.1.5 Paragraph 5.40 of ADB v2 states that a lift shaft that serves storeys above ground level should not also serve a basement if only one escape stair is serving stories above ground level and there is a likelihood of smoke from a basement fire adversely affecting escape routes in the upper storeys. The lift shaft discharges onto a lobby that in turn gives access to a bike store. This arrangement reduces the risk of smoke entering the lift shaft and

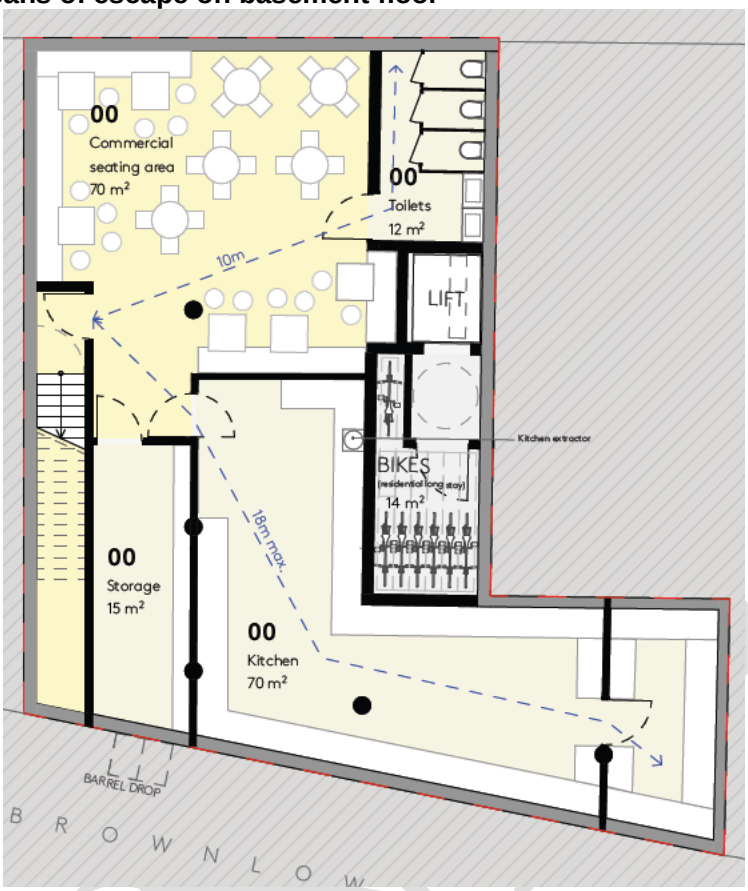
adversely affecting escape from the upper storeys. On this basis, the lift shaft is deemed to be compliant. The lift should be an evacuation lift.

5.1.6 The stairs serving the residential floors terminate at the ground floor level and do not go down to the basement. The basement storey is served by separate escape stairs. This is compliant. [3]

5.1.7 The kitchen will be enclosed by fire resisting construction of no less than 30 minutes in accordance with Paragraph 2.44 of ADB v2.

5.1.8 Paragraph 18.3 of ADB v2 requires that basements be provided with smoke outlets connecting directly to the open air with the exception of basement storeys that have a floor area of less than 200m^2 and are no more than 3m below ground level. The basement meets the afore-mentioned criteria and therefore does not require smoke outlets connecting directly to the outside.

Figure 5.1: Means of escape on basement floor



Fire resistance required to external walls:

- Less than 1m from relevant boundary: 60 minutes each side separately
- Greater than or equal to 1m from relevant boundary: 60 minutes from the inside
- This does not include the permitted unprotected areas

5.2 Means of Escape – Ground Floor

5.2.1 The plan view in Figure 5.2 shows the intended layout of the ground floor level.

5.2.2 The ground floor level comprises residential and commercial demises. However, they do not share common escape routes as shown in Figure 5.2 in accordance with Paragraph 2.5 of ADB v2. The ground floor level is therefore compliant in this regard.

5.2.3 Table 2.1 of ADB v2 requires that travel distances from any point on the storey to the storey exit of shops and commercial purpose groups should be a maximum of 18m for one direction and 45m for more than one direction of travel. The travel distances are compliant on the ground floor as shown in Figure 5.2.

5.2.4 Paragraph 3.58 of ADB v1 stipulates that access openings to refuse storage chambers should not be sited next to escape routes or final exits. The ground floor is compliant in this regard as the refuse store access doors are far enough away from the final exit for the residential demise that it should not affect means of escape from the residential parts of the building. The bin (refuse) store will be separated from other parts of the building (entrance lobby) by fire resisting construction of 60 minutes in accordance with Paragraph 3.56 of ADB v1.

5.2.5 The stair enclosure on the ground floor houses a bike storage area. The bike store will be separated from the stair enclosure by a 30 minute fire rated enclosure and FD30S door.

5.2.6 Where a storey has two or more storey exits, it should be assumed that one exit will become unavailable in the event of a fire. The remaining exits should be wide enough to accommodate all evacuees. There are two exits from the ground floor. Exit 2 (the wider exit) has been discounted to model it becoming blocked in the case of a fire. When one exit is discounted, the remaining exit has the capacity to accommodate 110 persons. The GF commercial area will therefore contain no more than 110 persons.

Table 5.1 Exit capacity

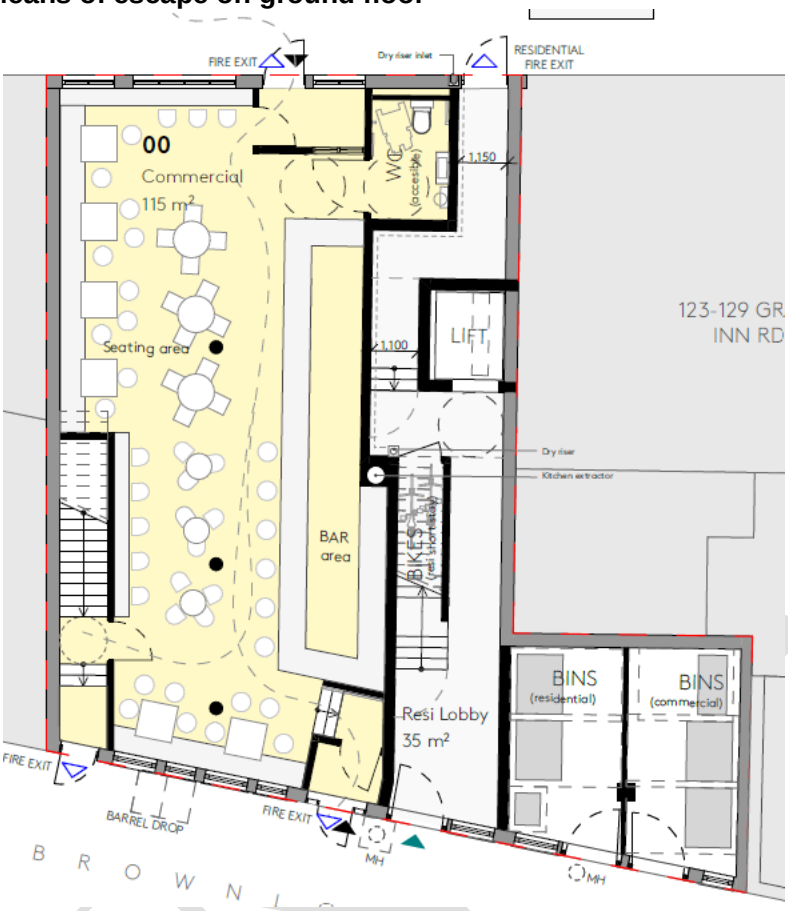
Exit No.	Width (mm)	Maximum number of people (based on Table 2.3 of ADB v2)	Total occupant capacity
1	810	110	110
~~2~~ (discounted)	~~920~~	~~220~~	

5.2.7 Paragraph 5.11 of ADB v2 states that: *"the door of any doorway or exit should be hung to open in the direction of escape whenever reasonably practicable. It should always be hung to open in the direction of escape if either of the following conditions applies.*

a. More than 60 people might be expected to use it during a fire.
b. There is a very high risk of fire with potential for rapid fire growth, such as with some industrial activities."

5.2.8 There are two exits from the GF, each door will accommodate less than 60 persons, therefore the doors are permitted to open inwards.

Figure 5.2: Means of escape on ground floor



Fire resistance required to external walls:

- Less than 1m from relevant boundary: 60 minutes each side separately
- Greater than or equal to 1m from relevant boundary: 60 minutes from the inside
- This does not include the permitted unprotected areas

5.3 Means of Escape – First to Fifth Floor

5.3.1 The plan view in Figure 5.3 to 5.7 shows the intended layout of the 1st to 5th floor levels.

5.3.2 Each floor comprises flats with a single escape route via a lobby leading to the protected stair enclosure. According to paragraph 3.27 of ADB v1, a single escape route and single common stair is acceptable under two conditions. Firstly, a protected lobby or common protected corridor should separate each flat from the common stair and secondly, the maximum travel distance for escape in one direction should not be surpassed (in this case 7.5m). The communal areas on all floors are compliant with the above provisions as there will be a lobby separating the stair from the accommodation and the travel distance within the lobby is <7.5m.

5.3.3 The protected lobby will be provided with smoke ventilation in accordance with Diagram 3.7 of ADB v1. This is proposed to be a 0.6m2 mechanical ventilation shaft which should be designed and installed in accordance with BS EN 12101. A 1.0m2 AOV will be located at the head of the stair.

5.3.4 All habitable rooms in all flats open directly into protected entrance halls. The travel distance within these protected entrance halls is less than 9m. All flat protected entrance halls are therefore compliant in this regard.

5.3.5 All protected entrance halls will have a fire resistance of 30 minutes each side separately. The doors within the flats that give access to the protected entrance hall will be FD20 doors. The front door of flats opening onto the protected lobby will be FD30S with self-closing devices. The above is in accordance with Table C1 of ADB v1.

5.3.6 Paragraph 7.21 of ADB v1 states that "*Stairs and service shafts connecting compartments should be protected to restrict the spread of fire between the compartments. These are called protected shafts.*" The protected stair and any service shafts spanning compartments will therefore be enclosed within 60 minutes fire resistance each side separately.

5.3.7 The lift is located within the enclosure of protected stairway. This is compliant, provided that the stair enclosure achieves 60 minutes fire resistance each side separately [4].

Figure 5.3: Means of escape on first floor

Figure 5.4: Means of escape on second floor

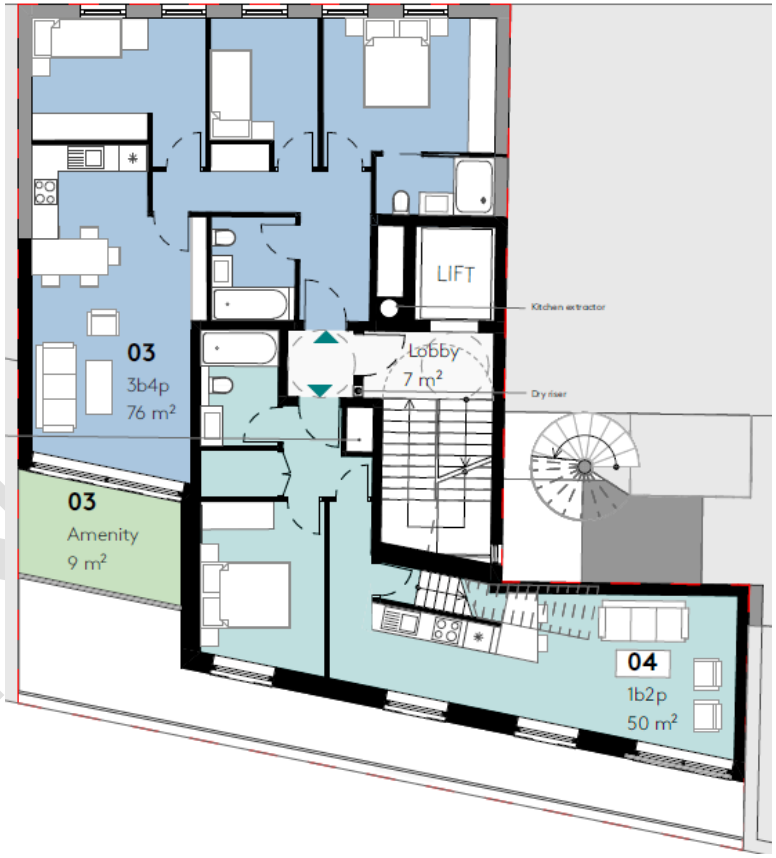


Figure 5.5: Means of escape on third floor

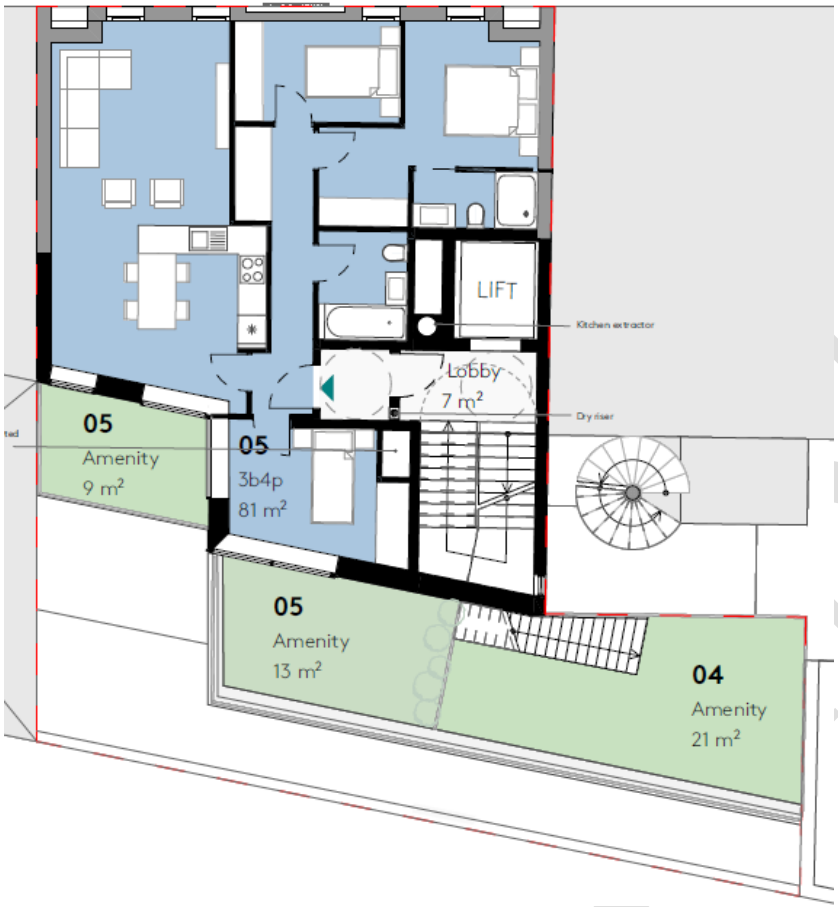
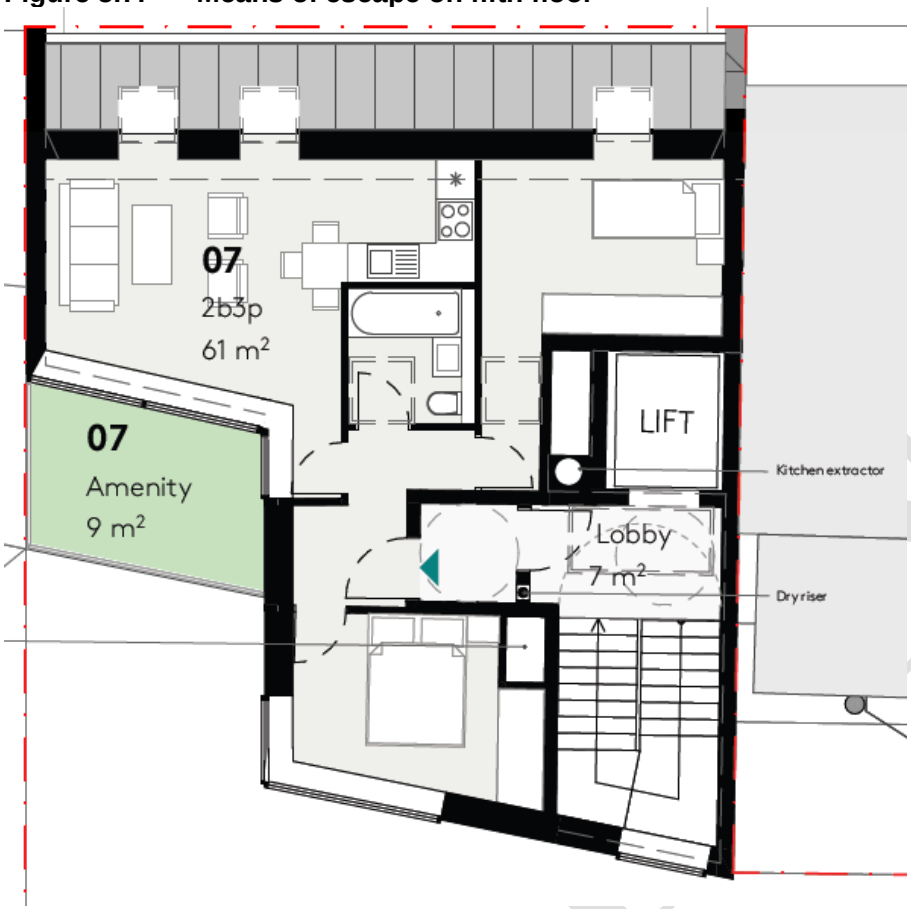


Figure 5.6: Means of escape on fourth floor

Figure 5.7: Means of escape on fifth floor



6.0 EVACUATION STRATEGY

6.1 Residential Demise

6.1.1 The evacuation strategy from the residential demise will be stay-put. This means that in the event of a fire in one flat, only the occupants of the fire flat will evacuate. All other occupants in the remaining compartments will stay-put.

6.1.2 The evacuation strategy from the non-residential demise will be simultaneous evacuation. This means that in the event of a fire in the non-residential demise, all occupants of the area will evacuate simultaneously to an area of ultimate safety outside the building.

7.0 FIREFIGHTING EQUIPMENT

7.1 Fire Mains and Hydrants

7.1.1 There is a fire hydrant located on Guilford Street. It is located approximately 40m from the building. This is within 100m of the building, therefore there is no requirement to provide additional private hydrants.

Figure 7.1 Location of fire hydrant

7.2 Fire Tender Vehicular Access

7.2.1 For flats, either of the following provisions should be made:

a. Provide access for a pumping appliance to within 45m of all points inside each flat of a block, measured along the route of the hose, or;
b. Provide fire mains in accordance with the following:

- Access should be provided for a pumping appliance to within 18m of each fire main inlet connection point. Inlets should be on the face of the building.
- The fire main inlet connection point should be visible from the parking position of the appliance.

7.2.2 The distance from the fire appliance to the furthest part of the furthest flat on the topmost floor has been measured. See Table 7.1.

Table 7.1 Hose length

Location	Length (m)*
Fire appliance to base of residential stair	9.88
Base of stair to head of stair at 5th floor level	43.15
Head of stair to furthest point of furthest flat at 5th floor level	13.3
Total hose length	**66.3**
* Lengths are based on drawings (listed in Appendix A).	

7.2.3 As shown in Table 7.1, the 45m rule is not met. A dry riser should therefore be installed within the building. The fire main should be comply with paragraph 7.2.1 b of this report.

7.2.4 Fire main outlets should be located within the protected stairway enclosure (clause 14.4 ADB v1).

7.2.5 Access routes, hardstandings and turning facilities should comply with the guidance in below given Table 7.2 [5].

Table 7.2: Typical fire and rescue service vehicle access route specification

Appliance type	Minimum width of road between kerbs (m)	Minimum width of gateways (m)	Minimum turning circle between kerbs (m)	Minimum turning circle between walls (m)	Minimum clearance height (m)	Minimum carrying capacity (tonnes)
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	17.0

Notes:

- Fire appliances are not standardised. The building control body may, in consultation with the local fire and rescue service, use other dimensions.
- The road base can be designed to 12.5 tonne capacity. Structures such as bridges should have the full 17-tonne capacity. The weight of high reach appliances is distributed over a number of axles, so infrequent use of a route designed to accommodate 12.5 tonnes should not cause damage.

7.2.6 The access road to the building is Grays Inn Road. This road complies with the minimum road width as shown in Table 7.2.

A.0 Appendix A – List of drawings

SITE PLAN

- Location & Block Plan_754-001

FLOOR PLANS

- Proposed Lower Ground Floor Plan_754-100
- Proposed Ground Floor Plan_754-101
- Proposed First Floor Plan_754-102
- Proposed Second Floor Plan_754-103
- Proposed Third Floor Plan_754-104
- Proposed Fourth Floor Plan_754-105
- Proposed Fifth Floor Plan_754-106
- Proposed Roof Floor Plan_754-107

ELEVATIONS

- Proposed East and West Elevations_754-110

SECTIONS

- Proposed Section A-A_754-120
- Proposed Section B-B_754-121
- Proposed Section C-C_754-122
- Proposed Section D-D_754-123

REFERENCES

[1] HMGovernment. approved document B. Fire safety. HM Government; 2019 Para 3.51
[2]Fire extinguishing installations and equipment on premises. London: British Standards Institution; 2012. BS5306-8:2012
[3] HMGovernment. Approved document B. Fire safety. HM Government; 2019 Para 3.71 and 3.72
[4] HMGovernment. Approved document B. Fire safety. HM Government; 2019 Para 3.99
[5] HMGovernment. approved document B. Fire safety. HM Government; 2019 Table 13.1