

2026

re:shape

Outline Fire Strategy (London Plan Fire Statement)

Ashley Park





Developed for:
Re:shape T Ltd

RIBA 2 Outline Fire Strategy (London Plan Fire Statement) Ashley Park, Former Ashley House Site

Haringey, London

Issue 02
18 August 2026

RIBA 2 Outline Fire Strategy (London Plan Fire Statement)

Ashley Park, Former Ashley House Site
Haringey, London

Project Reference: AHCF-ASH-ZZ-XX-TR-O-01000
Client: Re:shape T Ltd

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P01	10.08.2026	First issue for design team review	CK/BMD	BT	GT
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CK	Chris Kotidis	MEng (Hons) AIFireE	Graduate Fire Engineer
BMD	Ben McDermott	BEng (Hons) AIFireE MIEI	Graduate Fire Engineer
BT	Brett Tucker	BEng (Hons) AIFireE AMIMechE MSFPE	Fire Engineer
GT	George Tirkides	MEng (Hons) CEng MCIBSE MIFireE	Associate Fire Engineer

The checker has provided an internal review of the technical content of the report.

The approver confirms the report has undergone quality assurance in accordance with the principles of ISO 9001 and authorities its external release on behalf of Ashton Fire.

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1. INTRODUCTION

1.1 General

- 1.1.1 Ashton Fire has been commissioned by Re:shape T Ltd (henceforth referred to as Re:shape) in order to provide fire safety consultancy services for the proposed Ashley Park development at the former Ashley House site in Tottenham Hale, Haringey, London
- 1.1.2 The scheme will consist of two linear buildings, Blocks A and B, running east to west, located to the north and south of the site, with a central route through the middle. Block A rises 23-storeys (G+22) and will provide shared living accommodation. Block B rises 6 storeys (G+5) and will provide social housing accommodation.
- 1.1.3 The scheme description for the planning application is summarised below:
'Full planning permission for a phased mixed-use development comprising: (i) enabling works and operations; (ii) residential development (Use Class C3) including affordable housing; (iii) shared living accommodation (Sui Generis), (iv) commercial and community floorspace (Use Classes E and F2); and (v) site-wide and/or phase-specific access, servicing, public realm, blue-badge parking, cycle parking, open space, hard and soft landscaping, utilities, plant and all other associate works.'
- 1.1.4 This report documents the fire strategy developed for Ashley House at RIBA Stage 2. It is intended to represent the Fire Statement for the planning submission to the Greater London Authority (GLA) and to support ongoing design coordination for the project.
- 1.1.5 This document is confidential and for the exclusive benefit of Re:shape. It may not be assigned to or relied upon by a third party without the agreement of Ashton Fire in writing. Ashton Fire retains all copyright and other intellectual property in the document and its contents, unless transferred by written agreement between Ashton Fire and the Client.
- 1.1.6 This document is not intended to portray detailed design information for fire safety systems or construction specifications. As a strategic document supporting and informing the wider design, it should be read in conjunction with the wider project design documentation.

1.2 Legislation and basis of design

- 1.2.1 Fire safety in buildings is governed by two primary pieces of legislation in the UK. The Building Regulations 2010, Part B (fire safety)[1] applies to building design, whilst for fire safety management in buildings, compliance with the Regulatory Reform (Fire Safety) Order 2005 (FSO)[2] is required, including new duties introduced as part of the Fire Safety (England) Regulations 2022 (FSR)[3].
- 1.2.2 This strategy has been developed to meet the level of fire safety expected under the Building Regulations 2010 (as amended), which are set out under Part B, namely:
- B1 – Means of warning and escape
 - B2 – Internal fire spread (linings)
 - B3 – Internal fire spread (structure)
 - B4 – External fire spread
 - B5 – Access and facilities for the fire and rescue service
- 1.2.3 The proposed Block A will also be classified as a 'relevant building' under Regulation 7(4). As such, the requirements of Regulation 7(2) for construction of external walls and specified attachments will need to be satisfied

- 1.2.4 Block A will have a top storey more than 18 m above ground level and will contain at least two residential dwellings, therefore, it will be classified as a *Higher-Risk Building (HRB)* in accordance with the Building Safety Act 2022. The proposed Block B to the north of the site will have a top floor height below 18m and it is understood that it does not meet the criteria for classification as a Higher-Risk Building.
- 1.2.5 The fire safety strategy will be developed to satisfy the requirements for fire safety as set out by the Building Regulations. The strategy has not been specifically developed to address property protection or insurer's requirements. However, features that are included for life safety, as required by the Building Regulations 2010, will contribute in some extent to business continuity and property protection.
- 1.2.6 In general, the necessary level of life safety will be achieved utilising the guidance in BS 9991:2024+C2 [4] (BS 9991) within the residential areas and BS 9999:2017 [1] (BS 9999) in the non-residential and ancillary areas.
- 1.2.7 Fire engineering principles may be employed to support alternative solutions where strict adherence to the guidance would conflict with the wider aspirations for the scheme. Unless otherwise stated, it is expected that all aspects of the design will be in accordance with the aforementioned design guidance documents, applicable British Standards and codes of practice.
- 1.2.8 On the basis that recommendations made within the guidance documents are followed, it is considered that the life safety requirements of the Building Regulations 2010 (as amended) will be satisfied, and that an adequate level of safety will be achieved throughout the premises.
- 1.2.9 Where departures from the guidance documents are identified, alternative proposals (including associated analyses) will be documented for facilitating review with the relevant approval authorities. In accordance with the fire safety engineering principles detailed in the PD 7974[6] codes of practice, it is considered appropriate that all fire precautions are determined based on there being one seat of fire (i.e. accidental fires).
- 1.2.10 Unless specifically covered in this report please refer to the adopted design guidance for further details.

1.3 Construction, Design and Management (CDM) Regulations 2015

- 1.3.1 The strategy has been developed in cognisance of the Construction (Design and Management) Regulations 2015 (CDM 2015)[7], which sets out what designers are required to consider to protect anyone involved in the construction or ongoing use of a project.
- 1.3.2 This strategy does not provide a comprehensive assessment of site fire safety during the building works or the phasing of these works, though a designer's review of construction site fire safety issues is recommended to be conducted during technical design. The Fire Protection Association and the Health and Safety Executive (HSE) [8] issued guidance on identifying and managing fire precautions during the works, which should be consulted by the contractor or their specialist advisor when developing their construction fire safety plan.

1.4 The London Plan 2021

- 1.4.1 The London Plan sets out various planning requirements to be applied to new and refurbished buildings. It contains relevant policies for fire safety that are considered further within this report, such as Policy D5[9] and Policy D12[10].

1.4.2 Policy D12 states, in the interest of fire safety and to ensure the safety of all building users, all developments proposals must achieve the highest standards of fire safety and ensure that they:

- Identify suitably positioned, unobstructed outside space:
 - For fire appliances to be positioned on.
 - Appropriate for use as an evacuation assembly point.
- 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.
- Are constructed in an appropriate way to minimise the risk of fire spread.
- Provide suitable and convenient means of escape, and associated evacuation strategy for all building users.
- Develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in.
- Provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.

1.4.3 Ashley House is a major development and therefore, the proposals should be submitted with a Fire Statement, which is accounted for within this fire strategy. Detail is given around how the development proposal will function in terms of:

- The building's construction: methods, products and materials used, including manufacturers' details (Section 4).
- 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 (Section 2).
- Features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans (Section 3 and Section 4).
- Access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and position of equipment, firefighting lifts, stair and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these (Section 5).
- How provision will be made with the curtilage of the site to enable fire appliances to gain access to the building (Section 5).
- Ensuring that any potential future modification to the building will consider and not compromise the base build fire safety / protection measures (Section 1.9).

1.4.4 This document has been prepared in accordance with the items outlined above and may also be submitted as the London Plan Fire Statement, as referenced under London Plan Policy D12. However, it is intended to serve as a performance-based strategic document. Detailed design information, including methods of construction or the selection of specific products, is not included here and should be obtained from the relevant members of the design team. The specific planning requirements and any associated conditions should be confirmed through consultation between the planning consultant and the planning authority.

1.4.5 A separate document has been prepared as the Fire Statement required for the Gateway 1 planning submission due to its unique requirements.

1.4.6 In accordance with Policy D5 (Inclusive Design) of the London Plan, safe and dignified emergency evacuation is required to be incorporated into the building for all building users. As this building has

passenger lifts installed, the aforementioned policy stipulates that the lifts should be suitably sized for evacuation and should be provided in addition to any firefighting lift installed in a core.

1.4.7 Evacuation lifts and their associated provisions will be designed and constructed in accordance with the relevant standards and will incorporate the controls and functionality necessary to support their intended use. The proposed buildings will operate under a full management regime; accordingly, the operation of the evacuation lifts will be supported by appropriate management procedures and trained personnel.

1.4.8 The Client will be required to develop, implement, and maintain a suitable management plan detailing the operation, maintenance, testing, and control arrangements for the evacuation lifts to ensure their effective use in an emergency.

1.5 Relevant experience

1.5.1 The relevant experience of the authors and authorisers of this document are indicated in Table 1.

Table 1 - Qualifications and relevant experience

Name / Title	Academic qualifications	Membership of professional bodies	Relevant experience
Chris Kotidis Graduate Fire Engineer	MEng (Hons) in Mechanical Engineering	Associate with the Institution of Fire Engineers (AIFireE)	Under a years' experience in the development of fire strategies for residential buildings.
Ben McDermott Graduate Fire Engineer	BEng (Hons) in Fire Safety Engineering	Associate with the Institution of Fire Engineers (AIFireE) Member of the Institute of Engineers Ireland (MIEI)	2 years' experience in the design of fire strategies for residential and non-residential buildings, including high-rise buildings.
Brett Tucker Fire Engineer	BEng (Hons) in Mechanical Engineering	Associate with the Institute of Fire Engineers (AIFireE) Member with the Society of Fire Protection Engineers (MSFPE) Associate Member with the Institute of Mechanical Engineers (AMIMechE)	1+ years' experience in the development of fire strategies for a range of building types, including high-rise residential and performance-based design. 4+ years' experience in the construction and engineering industry in Australia.
George Tirkides Associate Fire Engineer	MEng (Hons) in Structural and Fire Safety Engineering	Chartered Engineer with the Engineering Council (CEng) Member with the Institution of Fire Engineers (MIFireE) Member with the Chartered Institution of Building Services Engineers (MCIBSE)	Over 7 years' experience in the development of fire strategies for a broad range of buildings including high-rise residential buildings, tall building design, and performance-based design

1.6 Referenced information

1.6.1 This strategy is based on information provided by the design team to Ashton Fire as listed in Table 2. Additional contradictory information or subsequent design variations to the information supplied may render the findings and recommendations of this report invalid.

1.6.2 The figures used within this report are indicative and whilst intended to convey the principles of the fire safety strategy, they may not be representative of the final arrangement. The fire safety principles

contained within this report are required to be maintained through any design amendments during the lifetime of the building.

Table 2 - Referenced project documentation

Description	Drawing No.	Revision	Author
PROPOSED SITE PLAN	AHCF-DLA-ZZ-XX-DR-A-20016	P01	DLA
GROUND FLOOR PLAN	AHCF-DLA-ZZ-00-DR-A-20200	P13	
LEVEL 01 PLAN	AHCF-DLA-ZZ-01-DR-A-20201	P10	
LEVEL 02 PLAN	AHCF-DLA-ZZ-02-DR-A-20202	P10	
LEVEL 03 PLAN	AHCF-DLA-ZZ-03-DR-A-20203	P10	
LEVEL 04 PLAN	AHCF-DLA-ZZ-04-DR-A-20204	P10	
LEVEL 05 PLAN	AHCF-DLA-ZZ-05-DR-A-20205	P10	
LEVEL 06 PLAN	AHCF-DLA-ZZ-06-DR-A-20206	P11	
LEVEL 07 PLAN	AHCF-DLA-ZZ-07-DR-A-20207	P11	
LEVEL 08 PLAN	AHCF-DLA-ZZ-08-DR-A-20208	P10	
LEVEL 09 PLAN	AHCF-DLA-ZZ-09-DR-A-20209	P10	
LEVEL 10 PLAN	AHCF-DLA-ZZ-10-DR-A-20210	P10	
LEVEL 11 PLAN	AHCF-DLA-ZZ-11-DR-A-20211	P10	
LEVEL 12 PLAN	AHCF-DLA-ZZ-12-DR-A-20212	P10	
LEVEL 13 PLAN	AHCF-DLA-ZZ-13-DR-A-20213	P10	
LEVEL 14 PLAN	AHCF-DLA-ZZ-14-DR-A-20214	P10	
LEVEL 15 PLAN	AHCF-DLA-ZZ-15-DR-A-20215	P10	
LEVEL 16 PLAN	AHCF-DLA-ZZ-16-DR-A-20216	P10	
LEVEL 17 PLAN	AHCF-DLA-ZZ-17-DR-A-20217	P10	
LEVEL 18 PLAN	AHCF-DLA-ZZ-18-DR-A-20218	P10	
LEVEL 19 PLAN	AHCF-DLA-ZZ-19-DR-A-20219	P10	
LEVEL 20 PLAN	AHCF-DLA-ZZ-20-DR-A-20220	P11	
LEVEL 21 PLAN	AHCF-DLA-ZZ-21-DR-A-20221	P10	
LEVEL 22 PLAN	AHCF-DLA-ZZ-22-DR-A-20222	P10	
ROOF PLAN	AHCF-DLA-Z1-RF-DR-A-20230	P11	
PROPOSED SITE ELEVATION A	AHCF-DLA-ZZ-XX-DR-A-20250	P06	
PROPOSED SITE ELEVATION B	AHCF-DLA-ZZ-XX-DR-A-20251	P07	
PROPOSED SITE ELEVATION C	AHCF-DLA-ZZ-XX-DR-A-20252	P06	
PROPOSED SITE ELEVATION D	AHCF-DLA-ZZ-XX-DR-A-20253	P06	
PROPOSED SITE ELEVATION E&F	AHCF-DLA-ZZ-XX-DR-A-20254	P07	
PROPOSED SITE SECTION A-A	AHCF-DLA-ZZ-XX-DR-A-20260	P04	
PROPOSED SITE SECTION B-B	AHCF-DLA-ZZ-XX-DR-A-20261	P04	
PROPOSED SITE SECTION C-C	AHCF-DLA-ZZ-XX-DR-A-20262	P04	
PROPOSED SITE SECTION D-D	AHCF-DLA-ZZ-XX-DR-A-20262	P04	
LANDSCAPE PLAN	AHCF-BOSK-ZZ-00-DR-L-1000	P14	Studio BOSK

1.7 Building description

- 1.7.1 The project comprises the development of a new mixed-use residential led scheme, which consists of two blocks (Blocks A&B). A site layout is shown in Figure 1.
- 1.7.2 The proposed Block A, located to the south of the site, will be a 23-storey (G+22) building, designed as a shared living block. The building will have a footprint of approx. 2,000m² and will have a top occupied floor height of approx. 70m.
- 1.7.3 The proposed Block B, located to the north of the site, will be a 6-storey (G+5) building, designed as a social housing block with commercial areas at Ground Floor. The building will have a footprint of approx. 1900m² and a top occupied floor height of approx. 16m.
- 1.7.4 The development, as described in planning application, is also summarised below:

“Full planning permission for a phased mixed-use development comprising: (i) enabling works and operations; (ii) residential development (Use Class C3) including affordable housing; (iii) shared living accommodation (Sui Generis), (iv) commercial and community floorspace (Use Classes E and F2); and (v) site-wide and/or phase-specific access, servicing, public realm, blue-badge parking, cycle parking, open space, hard and soft landscaping, utilities, plant and all other associate works.”



Figure 1 - Proposed site layout
Shared living block (Block A)

- 1.7.5 The proposed Block A will be served by three cores, with two being located adjacent to each other towards the west side of the building and the third towards the east. Given the block has a top floor height above 18m and floors with an area above 900m², it should be provided with at least two firefighting shafts in accordance with Clause 46.2.1 of BS 9991. Figure 2 - Figure 6 overleaf show typical floors in Block A. A summary of the building stairs/cores is provided below:

- Core 1 will be a firefighting shaft consisting of a firefighting stair, two dual purpose lifts (firefighting and evacuation) and a lift lobby at each storey. The final exit to outside at ground level is via a protected passageway to the north elevation.
- Core 2 consists of a protected stair, one dual purpose lift (firefighting and evacuation) and a lift lobby at each storey. The final exit route to outside at ground level is via a protected passageway to the south elevation.
- Core 3 consists of a firefighting shaft consisting of a firefighting stair, two dual purpose lifts (firefighting and evacuation) and a lift lobby at each storey. The final exit route to outside at ground level is via a protected passageway to the south elevation.

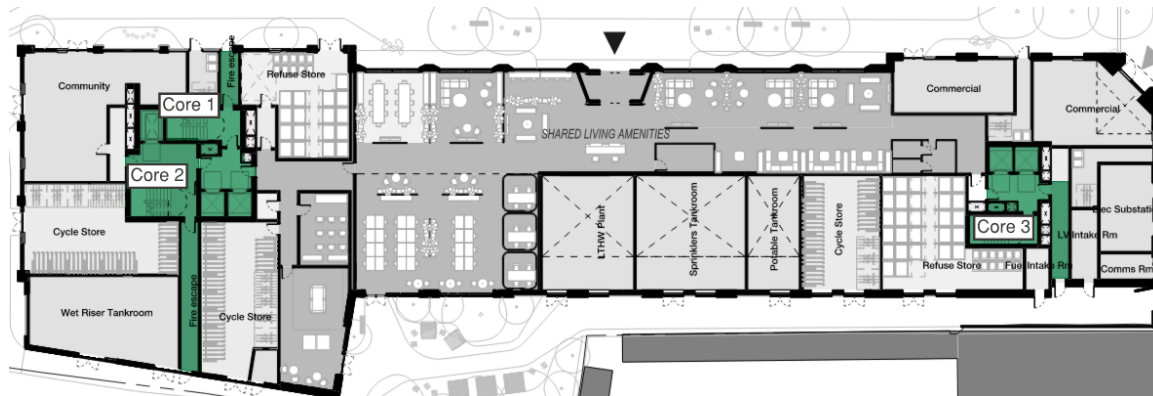


Figure 2 - Block A proposed Ground Floor layout

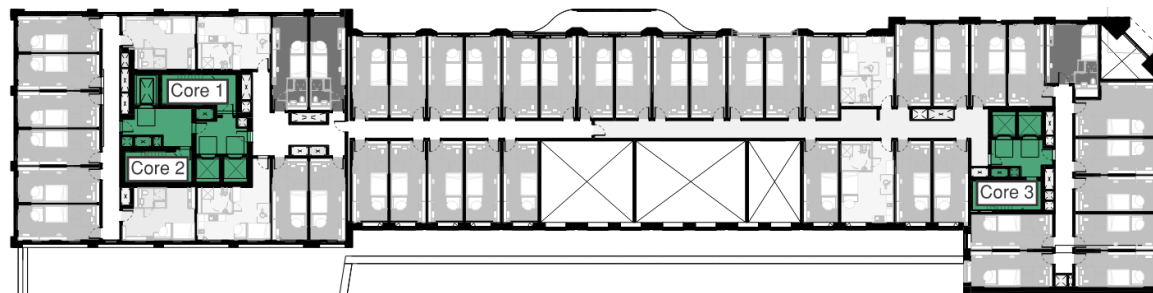


Figure 3 - Block A proposed L01 Floor layout

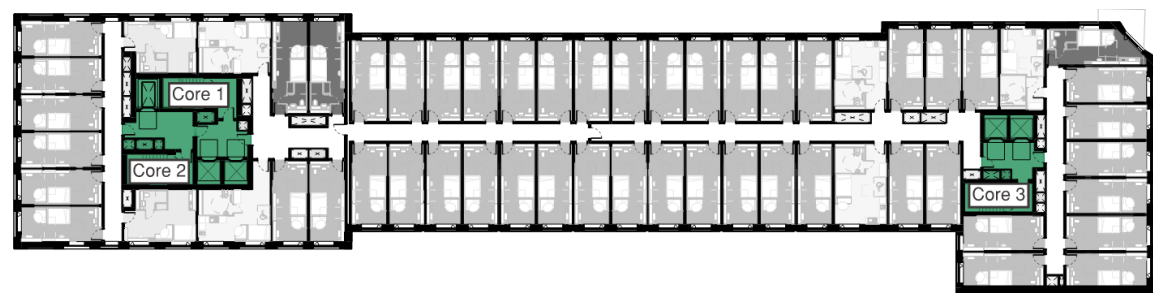


Figure 4 - Block A proposed L02-L06 Floor layout

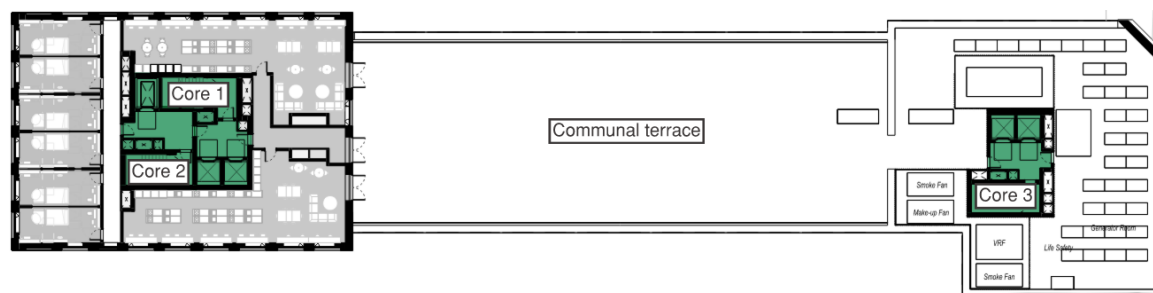


Figure 5 - Block A proposed L07 Floor layout

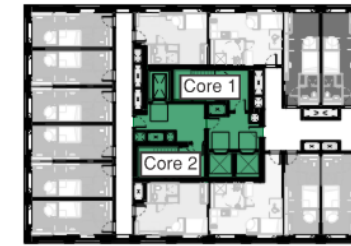


Figure 6 - Block A proposed L08-22 Floor layout

- 1.7.6 The Ground Floor of Block A will primarily consist of plant, commercial, ancillary and shared living amenities areas. Floors 01-20 will mostly comprise residential accommodation in the form of studio units. Floor 21-22 will comprise shared amenities.
- 1.7.7 Additionally, at Floor 07, the building steps back from the façade line, creating a large terrace, while only a reduced portion of the floor plate, with an area of approx. 600m² to the west of the block, continues above. An indicative section of Block A is shown in Figure 7 below.
- 1.7.8 Cores 1&2 will serve all floors of the building, while Core 3 will serve the floors up to (and including) the communal rooftop terrace.
- 1.7.9 The proposed general arrangements, along with fire strategy mark-ups can be found in the fire strategy mark-ups attached in Appendix A.
- 1.7.10 A summary of the uses of the space across the student residential accommodation building is presented in Table 3 below.

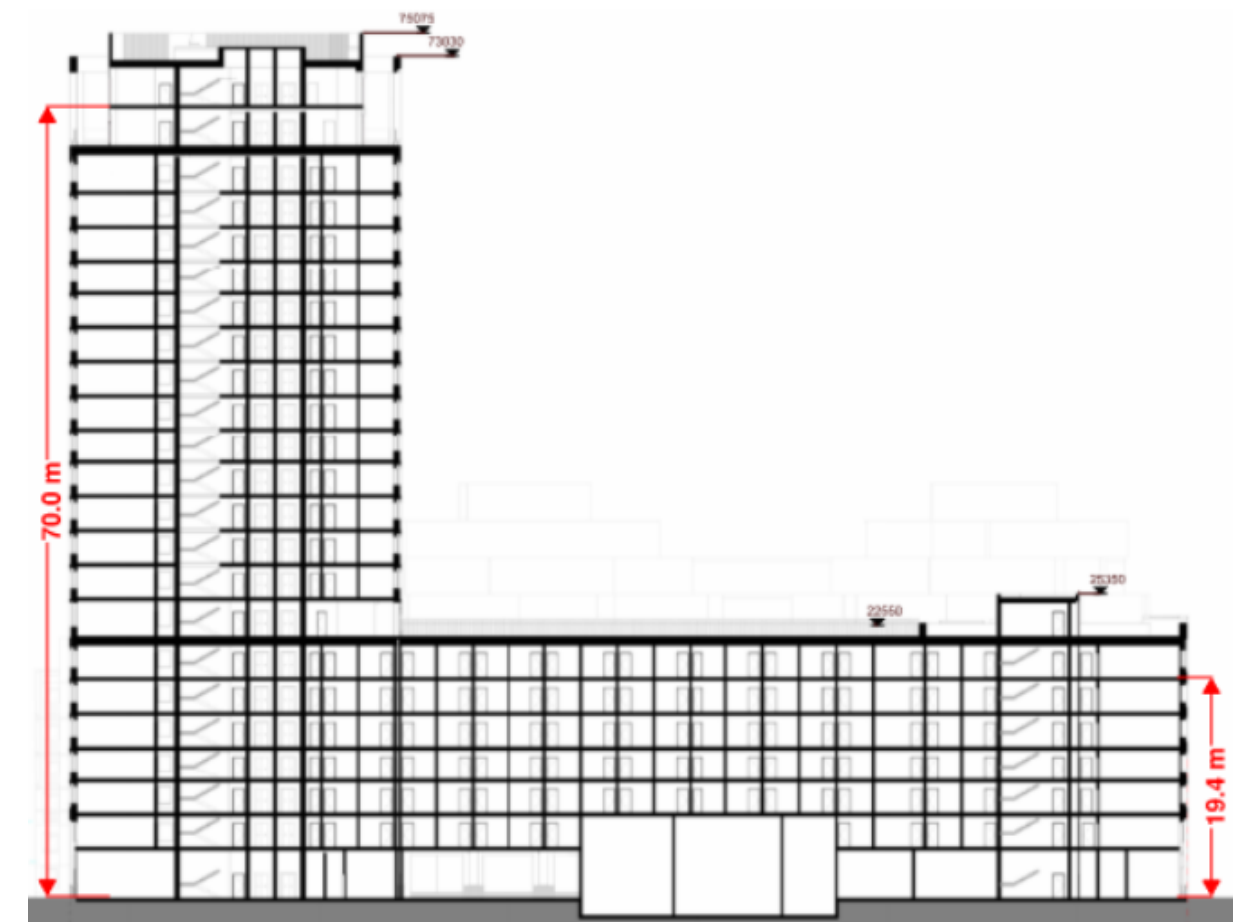


Figure 7 - Block A building section

Table 3 - Summary of the use of each storey in Block A

Building	Storey	Use
Block A	00	Shared living amenities, commercial areas, ancillary areas
	01-06	Studio flats
	07	Studio flats, communal terrace, common areas
	08-20	Studio flats
	21-22	Shared living amenities

Social rent block (Block B)

- 1.7.11 The proposed Block B will be served by two cores, with one located towards the west side of the building and the other towards the east.
- 1.7.12 The building has a top floor height below 18m and as such does not require a firefighting shaft in accordance with BS 9991. However, it is understood that the eastern most core will be provided as a firefighting shaft so as to ensure all areas of the block's floorplate are within the recommended hose laying distance limits set out within BS 9991. Figure 8 - Figure 10 show typical floors in Block B. A section of the building is shown in Figure 11.

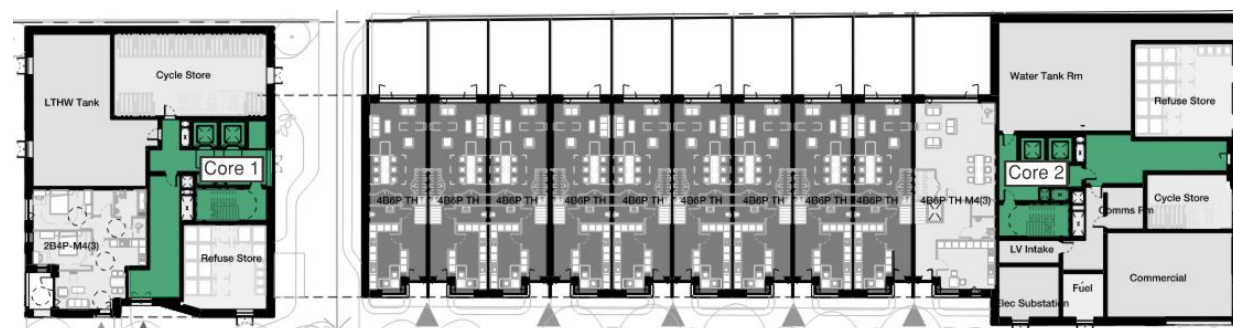


Figure 8 - Block B proposed Ground Floor layout

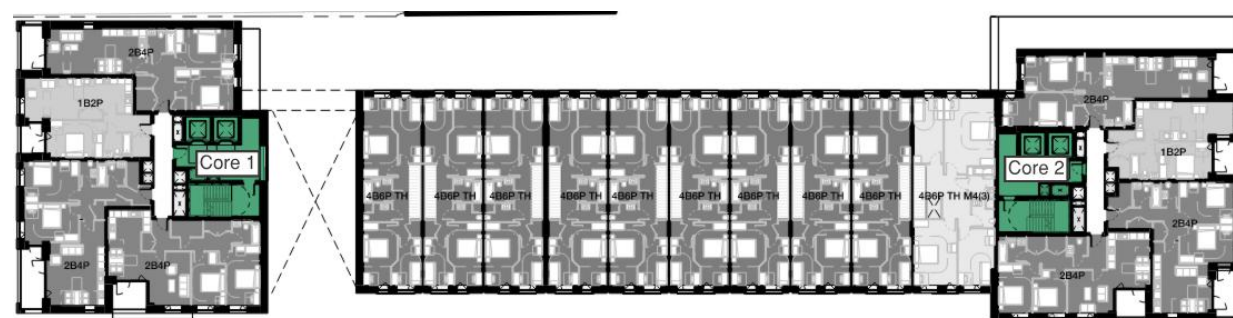


Figure 9 - Block B proposed L01 Floor layout

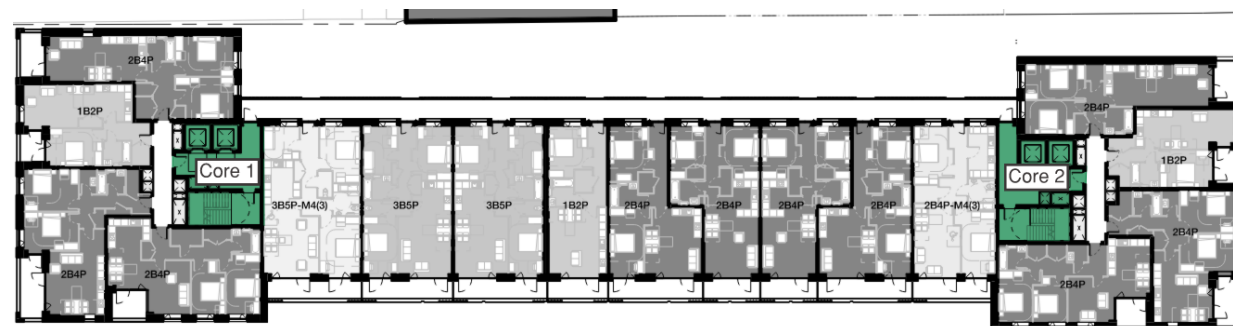


Figure 10 - Block B proposed L01-L05 Floor layout

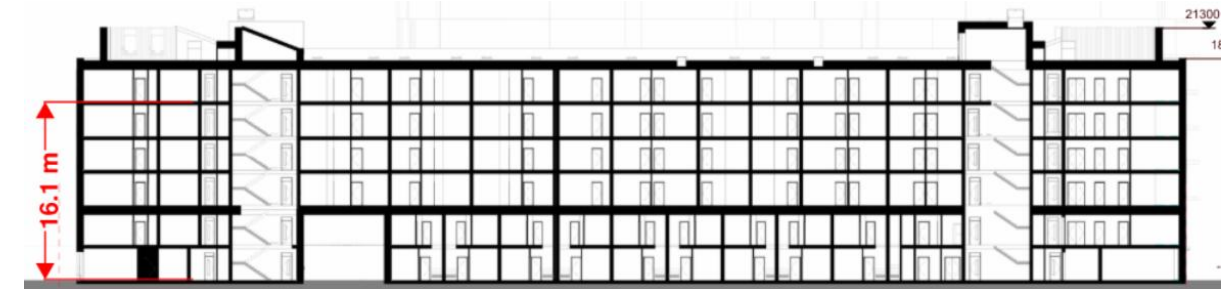


Figure 11 – Block B building section

- 1.7.13 Both cores on Block B will be provided with 2 lifts each, with both lifts in Core 1 provided as evacuation lifts while Core 2 will be provided with one evacuation and one firefighting lift. Both cores will serve all floors of the block, while Core 2 will also extend to the roof of the block. The final exit to outside at ground level is via protected passageways.
- 1.7.14 The Ground Floor of Block B primarily consists of residential accommodation, ancillary and commercial areas. Residential accommodation will be provided in the form of single- and multi-storey flats, with the multi-storey flats extending from the Ground Floor to the First Floor. All flats on the Ground Floor will be accessed directly through a private entrance.
- 1.7.15 The First Floor of Block B will comprise of multi-storey flats (extending from the Ground Floor) as well as single-storey located to the east and west sides of the block. The single-storey flats will be accessed through protected corridors which connect to each core.
- 1.7.16 The Upper Floors of Block B (except for the First Floor) will comprise of single-storey flats. The units located between the two stair cores will be accessed through a common balcony approach, while the units located to the west of core 1 and east of core 2 will be accessed through protected corridors.
- 1.7.17 A summary of the uses of the space across the student residential accommodation building is presented in Table 4 below.

Table 4 - Summary of the use of each storey in Block B

Building	Storey	Use
Block A	00	Duplexes (lower level), flats, ancillary areas
	01-05	Duplexes (upper level), flats

1.8 Risk profiles and design occupancy

- 1.8.1 In accordance with Section 6 in BS 9999, risk profiles have been applied across commercial, ancillary, and amenity areas across the scheme. Floor space factors have been taken from Table 9 in BS 9999 and supplemented by Approved Document B Volume 2 (ADB) [2]. Areas of transient occupancy (i.e. cycle stores and refuse stores) are not considered within the building occupancy count.

Table 5 - Summary of risk profiles and occupancy

Block	Area	Occupancy characteristic	Fire growth rate	Risk profile ^{A)}	Floor area m ²	Floor space factor (m ² /p)	Occupancy
A L00	Community	B	2	B1	121	4	30
	Commercial 1	B	3	B2	48	2	24
	Commercial 2	B	3	B2	66	2	33

Block	Area	Occupancy characteristic	Fire growth rate	Risk profile ^{A)}	Floor area m ²	Floor space factor (m ² /p)	Occupancy
	Shared amenities	B	2	B1	603	4	151
					27	4	7
					56	4	14
	Refuse stores	A	3	A2	-	-	-
	Cycle store	A	3	A2	-	-	-
	Substation	A	3	A3 ^{B)}	34	30	2
	LV room	A	3	A2	14	30	1
A L00	Comms room	A	3	A2	10	30	1
	Potable tank room	A	3	A2	44	30	2
	Sprinkler tank room	A	3	A2	94	30	4
	LTHW room	A	3	A2	79	30	3
	Wet riser tank room	A	3	A2	90	30	3
A L07	Shared amenities 1	B	2	B1	106	4	27
	Shared amenities 2	B	2	B1	109	4	28
	Shared terrace	-	-	-	712	6	120 ^{C)}
B L00	Commercial	B	3	B2	72	2	36
	Cycle stores	A	3	A2	-	-	-
	Refuse stores	A	3	A2	-	-	-
	Water tank room	A	3	A2	112	30	4
	Substation	A	3	A3 ^{B)}	21	30	1
	LV intake	A	3	A2	9	30	1
	LTHW	A	3	A2	99	30	4
Notes A) In accordance with Section 6.5 in BS 9999, the risk profile is reduced by one level where the area is sprinklered in accordance with BS 9251 or BS EN 12845. B) Beneficial use of a sprinkler system is not considered in the substation. C) The occupancy is limited to 60 persons where doors on exits swing against the direction of escape.							

1.9 Potential future modifications

- 1.9.1 Any future modifications should ensure that the principles in this fire strategy document are not compromised and their impact on the design should be assessed by a suitably qualified person.
- 1.9.2 Areas which are delivered as shell-and-core (e.g. residential shared amenity spaces) will be further documented in the detailed fire strategy or alternatively, covered in a separate fit-out fire safety strategy, which will take into account the base-build design.

2. MEANS OF ESCAPE

2.1 Evacuation principles

- 2.1.1 All residential units will utilise a 'stay-put' strategy whereby, in the event of fire within a studio or flat, only the unit of fire origin will receive a signal to evacuate. No other units will receive an alert notification, though should residents become aware of a fire they may leave the building if they wish to do so.
- 2.1.2 Areas of ancillary accommodation (e.g. cycles stores, bin stores, plant rooms), amenity areas (Block A), and commercial units will employ a simultaneous evacuation regime. This regime will be supported by an automatic detection and alarm system, where only the active alarm zone will receive a signal to evacuate. All other areas will not receive a signal to evacuate.

2.1 Horizontal means of escape - General

- 2.1.1 All doors should have an effective clear opening width of not less than 800mm, increased to 850mm in areas where wheelchair users are expected to be present.
- 2.1.2 Doors hung to swing against the direction of escaping occupants are to serve a maximum of 60 people, irrespective of the available clear width.
- 2.1.3 Exit widths should be measured in accordance with Figure 1 of BS 9991 as indicated in Figure 12 below.
- 2.1.4 Areas provided with a single means of escape should be limited to 60 people.
- 2.1.5 All corridors used for evacuation should be not less than 1200mm in width.

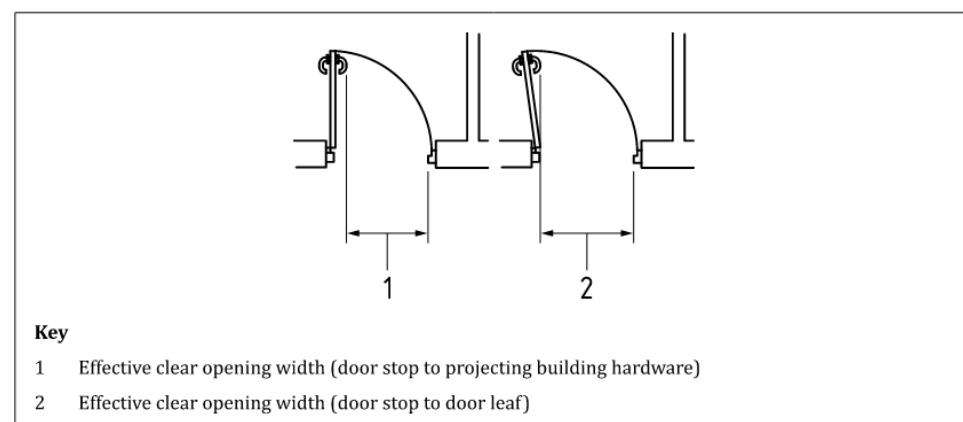


Figure 12 - Method of measurement - clear width

2.2 Horizontal means of escape - Internal flat design

- 2.2.1 There are four different apartment types across the blocks:
 - Studio apartments with an internal open-plan arrangement (Block A).
 - Accessible single-storey units (Block B).
 - Standard single-storey units (Block B).
 - Multi-storey units (Block B)

Studio flats - Block A

- 2.2.2 Studio flats should be designed in accordance with Clause 8.4.1a of BS 9991 and meet the following recommendations:
 - Each flat will be enclosed using 60-minutes fire resisting construction.

- The total travel distance from any point of the flat to the entrance door of the flat should be limited to 9m (or 20m where the flat is fitted throughout with Grade D, Category LD1 fire detection and fire alarm system in accordance with BS 5839-6: 2019+A1[11] and a sprinkler system).
- Open plan kitchens should follow the recommendations in Section 2.2.5 below.

Single-storey flats - Block B

- 2.2.3 These will be designed as open plan flats and should be designed in accordance with Clause 8.5 of BS 9991 as summarised below:
 - Each flat should be enclosed using 60-minutes fire resisting construction.
 - The size of an open plan flat should not exceed 16m x 12m or 192m²;
 - A Grade D, Category LD1 detection and alarm system conforming to BS 5839-6: 2019 should be provided;
 - A sprinkler system designed in accordance with BS 12845:2019+A1[12] should be provided.
 - The ceilings within an open plan flat should have a height not less than 2.25m;
 - An open plan flat should be situated on a single level only;
 - Open-plan kitchens should meet the recommendations in Paragraph 2.2.5 below.
 - Accessible flats should meet the recommendation in Paragraph 2.2.6 below.

Duplex flats - Block B

- 2.2.4 Multi-storey flats should be designed in accordance with Clause 8.4.3 of BS9991 as summarized below:
 - A protected stairway within a protected internal hallway from which all habitable rooms can be accessed should be provided, having a travel distance not greater than 9 m from the stair to the door of any habitable room.
 - Flats with the entrance on a floor below the flat should also meet one of the following recommendations:
 - The total travel distance from any point of the flat to the stair should be not greater than 9m; or
 - The flat should meet the guidance for open-plan flats (See Paragraph 2.2.3).

Open-plan kitchens

- 2.2.5 Where the escape route from a separate habitable room is through a living area containing a kitchen that is not located within a separate enclosure, the following recommendations should be met:
 - A sprinkler system conforming to BS 9251:2021[13] or BS EN 12845:2015+A1 respectively should be provided.
 - A Category LD1 fire detection and fire alarm system in accordance with BS 5839-6:2019+A1 should be provided.
 - The edge of the cooking apparatus should be not less than 1.8 m away from an escape door, a door to an adjoining habitable room or a means of escape route to an escape door.
 - All egress routes from habitable rooms to the escape door from the apartment should be not less than 0.9 m in width. No fixed obstructions (such as radiators or cupboards) should be located within the 0.9 m escape route.

- A gap of 0.3 m should be provided between the leading edge of the exit door from the space containing the cooking facility and the 1.8 m zone from the cooking apparatus, to allow people with mobility impairments to access the door hardware.

Accessible flats

- 2.2.6 Wheelchair storage/charging areas should be located remote from the final exit of the flat and positioned so as to not encroach the escape route from any point within flat. Where the charging point is located near the flat exit it is recommended to be enclosed using 30 minutes fire resisting construction and provided with an FD30 fire door.

Private balconies

- 2.2.7 Private balconies and terraces will be designed in accordance with the guidance in Annex E of BS 9991. Balconies more than 4.5m above ground will meet the following recommendations:

- The escape route from the balcony will not pass through more than one access room.
- The interior of the access room will be visible from all parts on the balcony unless provided by an automatic fire detection and alarm system.
- Any cooking risks within the access room will be enclosed in fire resisting construction unless designed in accordance with paragraph 2.2.5.
- Where the maximum travel distance from the balcony access door to the furthest point on the balcony exceeds 7.5m either a separate exit into a different room will be provided or automatic smoke detection will be provided within the access room.
- All balconies should be guarded by a protective guarding conforming to BS 6180

2.3 Horizontal means of escape - Common residential areas

Block A

- 2.3.1 Escape from each residential floor in Block A will be via internal corridors to multiple stairs. The escape routes should be in accordance with Section 7.2.1 of BS 9991 and feature:

- Escape in ventilated corridors providing multiple directions of escape in accordance with Figure 7a in BS 9991 where the maximum travel distance does not exceed 45m.
- Escape in unventilated corridors providing multiple directions of escape in accordance with Figure 7e in BS 9991 where the maximum travel distances does not exceed 30m.
- Escape in a single direction from dead-ends in corridors in accordance with Figure 7e in BS 9991 where the maximum travel distance does not exceed 15m (as per Figure 8 in BS 9991).
- Each stair (core) will be associated with at least one lift suitable for use in an evacuation to satisfy Section 7.4 in BS 9991 and to meet the requirements of Policy D5b5 of the London Plan 2021.
- Stairs and lifts will be accessed from protected lobbies to which the corridors that immediately connect will be provided with a smoke control system as per Figures 15b)c) in BS 9991. All lift lobbies will be provided with an inlet air shaft which may require to be powered in cores serving the uppermost storeys of the building.
- Smoke ventilation will be provided using a mechanical smoke ventilation system (MSVS) as per Table 3 in BS 9991 for buildings with a top floor height over 30m above ground.
- All MSVS should be assessed using CFD modelling.

- 2.3.2 Floors 01-06 are served by 4 corridors, with Corridors 1&4 offering single direction of escape from the flats to the east and west sides of the building to Cores 2&3 respectively. Central corridors 2 and 3 offer escape in two directions to Cores 1&3. Corridors 2&3 should be subdivided using a cross-corridor door. The layout of these corridors, travel distances and smoke control provisions is illustrated in Figure 13.

- 2.3.3 On Floor 07, the building steps back from the façade line, creating a large communal terrace. As such, Floors 07-20 are served by two centrally located cores (1&2) with a corridor on either side. The layout of these corridors, travel distances and smoke control provisions is illustrated in Figure 14.

- 2.3.4 Corridor 2 is sub-divided at Floors 01-06 due to a movement joint located where the building steps back after Floor 07. As such, the arrangement results in an unventilated portion of corridor connecting to two corridors each featuring an MSVS, which meets the permitted arrangement shown in Figure 7e in BS 9991.

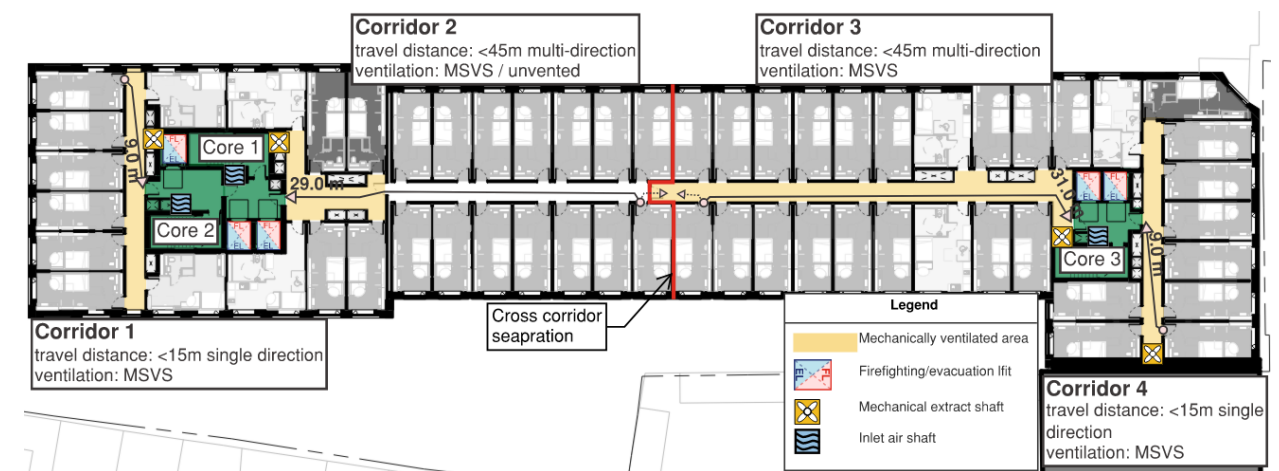


Figure 13 - Horizontal means of escape - Common areas in Block A (Floors 01-06)

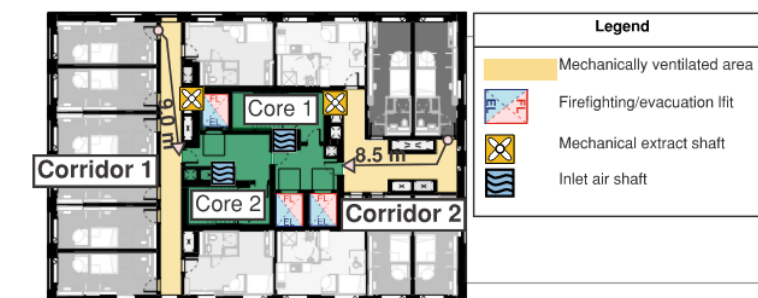


Figure 14 - Horizontal means of escape - Common areas in Block A (Floors 07-20)

Block B

- 2.3.5 All residential units accessed from the Ground Floors are accessed directly from outside, and as such means of escape from common residential areas are not applicable.

- 2.3.6 At Floor 01, single-storey flats on the east and west sides of Block B are accessed through Corridors 1&2, each leading to a single stair. The layout of these corridors, travel distances and smoke control provisions is illustrated in Figure 15 (overleaf). In accordance with Section 7.2.1 of BS 9991, these corridors should feature the following:

- Escape in ventilated corridors providing a single direction of escape in accordance with Figure 8 in BS 9991 where the maximum travel distance does not exceed 15m.
- Each stair (core) will be associated with at least one lift suitable for use in an evacuation to satisfy Section 7.4 in BS 9991 and to meet the requirements of Policy D5b5 of the London Plan 2021.

- Stairs and lifts will be accessed from protected lobbies to which the corridors that immediately connect will be provided with a smoke control system as per Figure 15b in BS 9991.
- Each lift lobby and each corridor will be provided with a smoke control system using natural smoke shafts.
- Although the building has a top floor height less than 18m above ground, but more than 11m above ground, it is recommended that smoke ventilation is provided using a mechanical smoke ventilation system (MSVS). This is in anticipation of expectation for computational fluid dynamics (CFD) modelling for all smoke control systems (mechanical or natural) in buildings over 11m.
- All MSVS should be assessed using CFD modelling.

2.3.7 Floors 02-05 feature an external balcony deck approach linking Cores 1&2. Corridors 1&2 will retain the arrangement described for Floor 01 at these levels. Escape from the balcony deck approach should be in accordance with Section 7.3 of BS 9991 as summarised below:

- The balcony/deck construction should achieve the same fire resistance as the floors within the building. The deck should be constructed from materials classified as A2-s1, d0 or better.
- The walking surface should be imperforate.
- The width of the balcony should not exceed 2m, otherwise down-stands extending at least 0.3m beneath the soffit should be provided perpendicular to apartments.
- At least 50% of the vertical section will be open and the area of the opening will be evenly spread around the surface (at least between the top of the balustrade at 1.1m and the soffit above, if provided). The openings in the outside wall should coincide with openings in the wall between dwellings and the balcony deck.
- The length of the external decks will be limited such that the maximum hose laying distances (when measured to the furthest point in a flat) are not exceeded (see Section 5).
- The balcony deck will be arranged such that it discharges only into a protected stair/lift lobby or directly into a protected stair enclosure

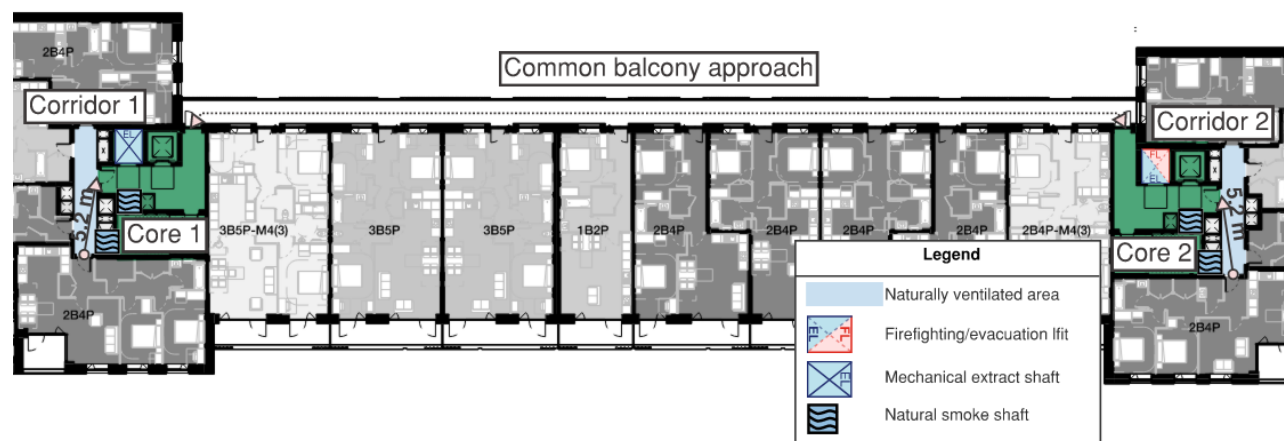


Figure 15 - Horizontal means of escape - Common areas in Block B (Floors 02-05)

2.4 Horizontal means of escape - Non-residential and ancillary areas

2.4.1 The non-residential areas include amenity / ancillary areas on the Ground Floor of both blocks, Floor 07 of Block A (terrace and amenity), and Floors 21-22 of Block A (amenity).

2.4.2 Table 16 of BS 9991 includes recommendations for travel distances from ancillary areas. A summary of these travel distances are provided in Table 6.

2.4.3 Escape from all ancillary areas meet the recommendations in Table 6 except for the west cycle store in Block A (12m in a single direction), and lower risk water tank rooms in Block A (11m in a single direction). It is considered that the low risk plant rooms are suitable in their current arrangements considering escape to a storey exit given their low risk nature in primarily housing water tanks.

2.4.4 It is acknowledged that BS 9991 includes recommendations for the design of exits from these areas in accordance with BS 9999 which requires the assigning of risk profiles. The Foreword in BS 9991 notes that the guidance in these two documents complement each other. As such, travel distance limits for all amenity and commercial areas and the exit width factors for all ancillary, amenity, and commercial areas for each risk profile assigned shown in Table 7 below.

Table 6 - Travel distance limitations

Ancillary area	Maximum part of travel distance within the room or area		Total maximum travel distance to the nearest storey exit	
	Single direction (m)	More than one direction (m)	Single direction (m)	More than one direction (m)
Engineering services installation rooms	9	18	18	45
Refuse stores	9	18	18	45
Communal lounges and common amenity areas	18	45 ^{A)}	18	45
Bicycle stores	9	45 ^{B)}	18	45
External and rooftop plant/ weather protected plant ^{C)}	60	200	60	200

Notes:
A) This may include up to 18 m with escape in one direction only.
B) This may include up to 9 m with escape in one direction only.
C) Escape from communal terraces should be in accordance with Annex E.4 in BS 9991 where travel distances should be limited to 18m in a single direction and 45m in multiple directions.

Table 7 - Travel distance and exit width limitations

Risk profile / ancillary area	Travel distance		Exit width factor (mm/person)
	Single direction	Multi-direction	
A2 (refuse stores, cycle stores, plant rooms)	See Table 6	See Table 6	3.6
A3 (substation)	See Table 6	See Table 6	4.6
B1 (community room, shared amenities)	24m (16m)	60m (40m)	3.6
B2 (commercial units)	20m (13m)	50m (33m)	4.1

Notes:
Values in brackets denote the 'direct travel distance limit' which is applied where internal layout are unknown

- 2.4.5 The minimum clear width should not be less than:
- 800mm – for doors, increased to 850mm where unassisted wheelchair users are expected; and,
 - 1200mm – for corridors and escape routes.
- 2.4.6 Doors hung to swing against the direction of escaping occupants should serve a maximum of 60 people, irrespective of the available clear width. Areas provided with a single means of escape should be limited to 60 occupants. Where multiple exits are available, the largest exit will be discounted in the event that it is blocked by a fire, when estimating the total available exit capacity.
- 2.4.7 As such, exits from the terrace and into the cores at Floor 07 should have a clear width of at least 1,050 mm (Cores 2&3). These may be reduced to a clear width of 850mm if the combined occupancy across the terrace and amenity spaces is limited to 138 persons (i.e. up to 83 persons at the terrace). All exits should be hung to swing in the direction of escape, otherwise, the terrace occupancy will be limited to a maximum of 60 persons.
- 2.4.8 Accessibility requirements are outside of the scope of this report, and it should be noted that wider corridor or doorways may be required to satisfy the requirements of Part M of the Building Regulations. Further guidance is given in Approved Document M (ADM)[14].

2.5 Vertical means of escape

Block A

- 2.5.1 Escape from Floors 01-07 will be facilitated by two firefighting stairs (Cores 1&3), a protected stair (Core 2) and five dual-purpose firefighting and evacuation lifts spread between the cores. On Floor 07, the building steps in from the façade line, creating a communal terrace. Core 3 will extend up to the terrace level, while Cores 1&2 will continue upwards, serving all levels.
- 2.5.2 At ground floor level, all cores discharge to outside via a protected exit passageway that does not directly connect with any accommodation or service risers. The exit passageway should be constructed to achieve the same level of fire resistance as the core it serves (120 minutes fire resisting construction in Block A).
- 2.5.3 Ancillary connections should only be via protected, ventilated lobbies. In these instances, it is proposed that the ancillary lobbies are provided with an MSVS via shafts extended from the floors above. The mechanical ventilation system's performance will be substantiated through Computational Fluid Dynamics (CFD) modelling in the next design stages.
- 2.5.4 In accordance with Sections 15.1 e) f) of BS 9991, the final exit passageways from adjacent cores leading from protected lobbies should be imperforate. As such, access between the lift lobbies in Cores 1 and 2 is permitted and will be provided at the ground floor given the stair final exit passageways are remote from one another.
- 2.5.5 The stairs in Cores 1&3 will be designed as a firefighting stair and thus, they should be at least 1,100mm wide. The protected stair in Core 2 should achieve minimum width of 1,000mm in accordance with BS 5359-1:2010.
- 2.5.6 Where handrails intrude 100mm or less, these can be ignored when assessing the clear width of the communal stair. The stair will be kept free for a vertical distance of 2m.

- 2.5.7 The flights and landing of the escape stairs will be constructed of materials achieving Class A1 or Class A2-s1, d0, in accordance with BS 9991; Clause 9.
- 2.5.8 As the building exceeds 50m in height, a low-mounted way guidance system should be provided within the stairways in all cores.
- 2.5.9 The stairs should be sufficiently sized to cater to any above ground areas with a simultaneous evacuation regime, e.g. Floor 07.

Block B

- 2.5.10 The upper levels of Block B will all be served by two stairs (Cores 1&2), each provided with 2 lifts.
- 2.5.11 While a firefighting shaft is not required based on the block's height, one of the cores (Core 2) will be provided as a firefighting shaft so as to ensure hose-laying distances are within the limits recommended by BS 9991.
- 2.5.12 Core 1 will be provided with at least one evacuation lift, while Core 2 will be provided with one dual-purpose firefighting and evacuation lift, 1x firefighting lift and 1x evacuation lift.
- 2.5.13 At ground floor level, both cores discharge to outside via a protected exit passageway that does not directly connect with any accommodation or service risers. The exit passageway should be constructed to achieve the same level of fire resistance as the core it serves (60 minutes fire resisting construction in Block B).
- 2.5.14 Ancillary connections should only connect to a protected stair via protected, ventilated lobbies. In these instances, it is proposed that the ancillary lobbies are provided with a 0.4m² vent, in line with the recommendations of Table 1 of BS 9991. Firefighting shafts should only connect to ancillary areas via protected lobbies provided with the same means of smoke control as the above ground floors.
- 2.5.15 The stairs in Core 1&2 should achieve minimum width of 1,000mm and 1,100mm respectively in accordance with BS 5395-1:2010 [1].
- 2.5.16 Where handrails intrude 100mm or less, these can be ignored when assessing the clear width of the communal stair. The stair will be kept free for a vertical distance of 2m.
- 2.5.17 The flights and landing of the escape stairs will be constructed of materials achieving Class A1 or Class A2-s1, d0, in accordance with BS 9991; Clause 9.

2.6 Evacuation of disabled and mobility impaired persons (MIPS)

Residential areas – Both blocks

- 2.6.1 To ensure an inclusive design and in accordance with BS 9991, it is recommended that lifts suitable for use in an evacuation are provided. As such, dual-purpose firefighting and evacuation lifts will be provided in all cores in Block A, with Cores 1&3 having two lifts each and Core 2 having one lift.
- 2.6.2 Similarly, each core in Block B will be provided with at least one lift suitable for evacuation, being an evacuation lift in Core 1, and either an evacuation lift or a dual-purpose firefighting and evacuation lift in Core 2.
- 2.6.3 All lift lobbies should be designed to have sufficient room for disabled occupants to manoeuvre to the lift waiting spaces. These should have dimensions of at least 2.1m x 1.5m.
- 2.6.4 All evacuation lifts should be designed in accordance with Section 2.7 and waiting areas ahead of the lifts should be provided with an emergency voice communication (EVC) system as discussed in Section 2.7.

2.6.5 All areas at ground floor should be provided with step-free, or ramp access.

Non-residential areas – Both blocks

2.6.6 It should be noted that under the Regulatory Reform (Fire Safety) Order 2005, it is the duty of the responsible person along with their appointed safety assistants to assist everyone to a place of ultimate safety outside the building in the event of an emergency.

2.6.7 The building operator should develop adequate procedures to assist with the evacuation of disabled persons in the event of fire.

2.6.8 It is envisaged that most persons will be able to escape to a place away from danger without requiring assistance. However, there may be a certain proportion of building occupants, such as those who are non-ambulant disabled (e.g. wheelchair users), who will not be able to negotiate stairs unaided. For these instances, refuge positions will be provided within the escape stairs or associated lobbies, in which their safety can be assured for a period of time prior to being assisted to ultimate safety outside the building.

2.6.9 The refuge areas will have a clear area of at least 900 x 1,400mm and will be located so as not to impede the movement of occupants onto stairways or escape routes and will be clearly identified.

2.6.10 Each refuge space will be provided with an emergency voice communication system as recommended in Section 3.

2.6.11 Any ramps will be designed in accordance with Approved Document M.

2.7 Evacuation lifts

2.7.1 Lifts intended to be used in the event of a fire evacuation (i.e. evacuation lifts, or dual-purpose firefighting and evacuation lifts should be designed and installed in accordance with the relevant provisions of BS EN 81-20[15], BS EN 81-70[16] and BS EN 81-76[17] as follows:

- Class B lifts in all Cores of Block A with a type 3 or type 4 evacuation lift car as outlined in Table 3 of BS EN 81-70 (or other lift car dimensions where these provide an equivalent area). All lifts in these cores will be dual-purpose firefighting and evacuation lifts.
- Class A or B lifts may be provided in both cores of Block B. Class A lifts may have a type 2 lift car in accordance with BS 81-20.

2.7.2 All evacuation lifts should be automatic driver lifts assuming the site will not feature 24/7/365 staff on site to operate the lifts.

2.7.3 A fire detection system should be provided throughout the evacuation lift's operating environment, including the lift well, machinery spaces, and safe areas adjacent to landing doors. Floor-specific fire alarm signals should feed from the fire detection system within common areas of the building to enable prioritised evacuation from floors where fire is detected.

2.7.4 Primary and secondary power supplies should be provided to ensure continuous operation of the evacuation lifts during a fire.

2.7.5 Emergency communication systems should be provided within the evacuation lifts and are connected to the secondary power supply to maintain functionality during power failures. Car lighting is provided from both primary and secondary sources to ensure adequate illumination during an evacuation.

2.7.6 Water management systems should be provided to prevent ingress into the evacuation lift wells during firefighting operations, including drainage channels and raised floor sections at lift well entrances.

Emergency operation device locations are provided with clear access routes and are marked with appropriate signage at each evacuation exit landing.

2.8 Final exits and onward escape

2.8.1 Travel beyond the building final exits should be away from the building, towards a place of safety, and not be jeopardised by unprotected openings of the building.

2.8.2 In general, the buildings should be provided with escape routes, upon exiting the building that are either directly away from the building, have alternate path along the building façade or have alternative exits via a second stair or alternative exits at different levels.

2.8.3 Where the external escape route continues in a single direction along the façade, the external wall adjoining the escape routes should have a minimum of 30 minutes fire resistance (integrity and insulation).

2.8.4 Final exits should not present a barrier for disabled people. Where the route to a final exit does not include a stair, a level threshold and, where necessary a ramp should be provided. Level access should be provided across any landscaping on site until away from the building.

3. ACTIVE FIRE SAFETY SYSTEMS

3.1 General

3.1.1 The proposed active fire safety systems are summarised in Table 8 below.

Table 8 – Active fire safety systems

Fire safety measure	Description
Means of detection and alarm	A Grade D Category LD1 system conforming to BS 5839-6[11] should be installed within all residential units in both blocks. A Category L5 system conforming to BS 5839-1[18] should be installed within the residential communal escape routes in both blocks to initiate active fire protection measures, e.g. smoke control systems or door release mechanisms. A Category L3(M) system conforming to BS 5839-1 should be installed within the ancillary areas and non-residential areas of both blocks. Exact system requirements in the commercial areas will be determined by their final use.
Evacuation systems	As Block A has a stay-put evacuation strategy and a top storey more than 18m above ground, an evacuation alert system in accordance with BS 8629[19] should be provided to enable the fire and rescue team to initiate evacuation alert sounders within each apartment on any single floor, multiple floors or the entire building depending on circumstances. Given Block B has more than one escape stair, a simple layout and a top storey height below 18m, an evacuation alert system is not required.
Suppression	As both blocks have top floor heights above 11m, they should be fitted throughout with sprinklers in accordance with BS 9251:2021[13] or BS EN 12845:2015+A1[12]. Block A has a top floor height above 45m, and as such, in accordance with Table 2 of BS 9991, it should be fitted with an OH3 sprinkler system designed in accordance with BS EN 12845:2015+A1 serving all areas. Block B has a top floor height above 11m and should be fitted with either: - Category 2 sprinkler system designed in accordance with BS 9251:2021. - OH1 sprinkler system designed in accordance with BS EN 12845:2015+A1. Ancillary spaces and non-residential areas within Block B may be protected by the associated residential sprinkler system in accordance with the recommendations of BS 9251 where these are limited to 100m². Larger non-residential rooms in Block A (shared living amenities at Ground Floor) will be provided with coverage by the OH3 system. The design of the sprinkler system should be carried out by a third-party specialist.
Evacuation lifts	Refer to Section 2.7 for the design of lifts intended to be used in an evacuation. See below for dual-purpose firefighting and evacuation lifts / firefighting lifts.
Firefighting lifts	All lifts in Block A should be provided as dual-purpose firefighting / evacuation lifts. These should be designed to have the capacity to operate in both evacuation (automatic driver) and firefighting modes. Block B should be provided with a firefighting lift in Core 2 firefighting shaft. In addition to the recommendations in Section 2.7, the lifts should be designed and installed in accordance with BS EN 81-20 and BS EN 81-72. The lift landing doors should be located within 7.5 m of the associated firefighting stair door. The lift shafts should be enclosed within construction providing 120 minutes' fire resistance, and access should be provided via FD60 fire-resisting doors.

Fire safety measure	Description
Smoke ventilation	Stairs An AOV with an aerodynamic free area of 0.7 m² should be provided at the head of each firefighting/ escape stair. The AOV should conform to BS EN 12101-2[20]. Lift lobbies (Block A) Each lift lobby should be served by a separate inlet air shaft to provide inlet air to support the MSVS or smoke shaft in the corridor it links to at all floors. The inlet air shaft should be sized to match the size of the vent in the corridor. Given that the height of Cores 1&2 in Block A exceed 60 m, consideration should be given to the potential impact of adverse climatic conditions and stack effect on the performance of the smoke ventilation system. As such, it is recommended that the inlet air shafts in Block A are mechanically assisted via a dedicated fan set to ensure reliable operation under all environmental conditions. Lift lobbies (Block B) Each lift lobby should be provided with a means of smoke control as suggested above. Depending on the corridor smoke control system in the corridor, either of the following should be provided: - Natural smoke shafts in the corridors – natural smoke shafts in the lift lobbies. - MSVS in the corridors – inlet air shaft in the lift lobbies matching the MSVS shaft area. Common corridors (Block A) The residential corridors serving adjoining the lift lobbies should be provided with a mechanical smoke ventilation system (MSVS). Each corridor should be provided with an MSVS shaft that is intended to protect the stair/lift lobby. Refer to Figure 13 and Figure 14. Each MSVS / inlet air shaft should achieve a cross-sectional area of at least 1.2 m² (recommended due to the height of the building). CFD modelling will be carried out to substantiate the system performance in the next design stages. Common corridors (Block B) Common corridors should be provided with either: - A natural smoke shaft having a 1.5m² free area and where this rises 2.5m above the vent on the top floor served and at least 0.5m above any obstructions within a 2m radius on the roof; or - An MSVS in the corridors having a 0.6m² free area. All smoke shafts should achieve a cross-sectional area of at least 0.6m² (recommended due to the height of the building). Ancillary connections At ground floor level, where the firefighting stair or protected stair final discharge routes connect to ancillary or non-residential areas, they should be separated by a mechanically ventilated protected lobby. These lobbies should align with the MSVS shaft locations at the floors above and should be extended to serve these lobbies at high level or should otherwise be ducted to the nearest MSVS extract shaft. Ancillary areas connecting to a residential common corridor, a protected stair or its associated lift lobby should be provided with a 0.4m² permanent vent in line with Table 1 of BS 9991. Refuse stores in both blocks may only connect to a ventilated lobby/corridor via an additional lobby fitted with a 0.2m² vent in line with Table 27 & Section 11.2.2d of BS 9991.

Fire safety measure	Description
Emergency lighting	Emergency lighting should be provided in accordance with the recommendations of BS 5266-1[21], BS EN 1838[22] and BS EN 60598-2-22[23]. As Block A will have a top storey more than 50m above ground, a low-mounted way guidance system should be provided within the stair in addition to the provisions above.
Fire safety signage	All parts of the development should be provided with appropriate fire safety signage in accordance with The Health and Safety (Signs and Signals) Regulations 1996[24], i.e. signage to be specified according to BS ISO 3864-1[25], BS 5499-4[26] and BS 5499-10[27].
Wayfinding signage	Wayfinding signage should be provided throughout both blocks in accordance with Section 48.2 of BS 9991 as both will have a top storey height above 11m.
Emergency voice communication systems (EVCs)	EVCs should be provided in all lift lobbies / near evacuation lifts in accordance with BS 5839-9. The system should consist of a Type B outstation which communicates with a receiving station (typically located next to the main fire alarm panel or a concierge desk).
Firefighting communications	As Block A has top storey greater than 50m above ground, communication systems should be provided for the fire service such as a radiating cable (leaky feeder), distributed antennae systems (DAS) or fire telephones.
Fire mains	Block A The building has a top floor height more than 50m above ground level and should be provided with a wet riser system designed and installed in accordance with BS 9990[28]. Wet rising mains should be provided in each firefighting core, connecting to a single primary wet riser tank and pump-set. Block B As the building has a distance from the fire vehicle position to the furthest internal point of the building above 60m as measured on a route suitable for laying hose, it should be provided with a fire main. Given it has no floor more than 50m above fire and rescue service access level, dry risers may be used.
Emergency power supplies	All life-safety systems should be provided with robust power supplies in accordance with BS 8519[29]. The following fire safety systems should comply with their respective British Standards regarding secondary power supplies. - Automatic fire detection and alarm system; - Evacuation alert system (EAS); - Automatic suppression systems; - Smoke ventilation and smoke control systems; - Emergency lighting and signage; - Dual-purpose firefighting and evacuation lifts; - Evacuation lifts; - Emergency voice communication systems (EVCs); and - Wet riser pumps; There must be minimal delay in change over if the main power fails and it must occur automatically.

4. PASSIVE FIRE SAFETY SYSTEMS

4.1 General

4.1.1 The proposed passive fire safety systems are summarised in Table 9 below.

4.1.2 The recommendations to mitigate the risk of external fire spread are summarised in Table 10 overleaf.

Table 9 – Passive fire safety systems

Fire safety measure	Description
Walls and ceiling linings	Walls and ceiling linings should be specified in accordance with Section 26.1 of BS 9991 and Section 34.1 of BS 9999 as summarised below. - Small rooms $\leq 4 \text{ m}^2$ (residential and ancillary): D-s3, d2 - Small rooms $\leq 30 \text{ m}^2$ (non-residential areas): D-s3, d2 - Other rooms (residential, ancillary and non-residential areas): C-s3, d2 - Circulation spaces (within flats): C-s3, d2 - Circulation spaces (communal areas): B-s3, d2
Structural fire resistance	The minimum recommended periods of fire resistance for elements of structure have been determined with reference to Table 6 of BS 9991 for both Blocks. Based on the height of the top occupied storey above ground level the following minimum periods of fire resistance are recommended: - Block A: R 120 - Block B: R 60
Compartmentation	Block A All floors within the building should be constructed as compartment floors, providing a minimum of REI 120. Double height spaces should be enclosed in a two-storey fire compartment with no connection on the upper level. Party walls separating Block A from the adjacent "West Apartments" building to the south of the site should achieve a minimum of REI 120. All residential areas should be separated from non-residential areas by construction achieving at least REI 120. All non-residential areas (excluding large plant and life safety rooms) should be separated from each other using a minimum of REI 60. Rooms housing life safety plant should be enclosed using REI 120. Firefighting stairs and protected stairs should be enclosed with a minimum of REI 120. All shafts, including service risers and lift shafts, should be constructed as protected shafts achieving at least REI 120. Separation between dual-purpose lifts, their respective lobbies, and firefighting/protected stairs should be provided with a minimum of REI 60. All communal corridors should be enclosed in a minimum of REI 60. All studio apartments should be separated from the remainder of the building and from each other using fire-rated construction achieving a minimum of REI 60. Block B All floors within the building should be constructed as compartment floors, providing a minimum of REI 60. All residential areas should be separated from non-residential areas by construction achieving at least REI 60. All non-residential areas (excluding large plant and life safety rooms) should be

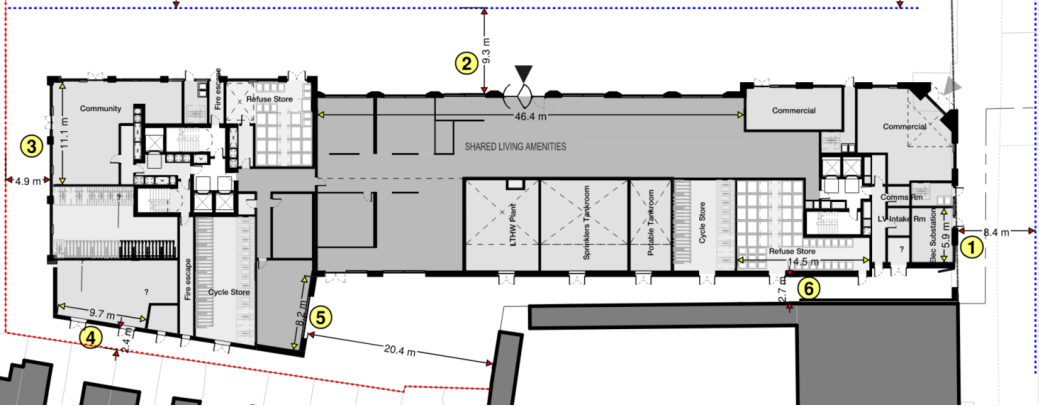
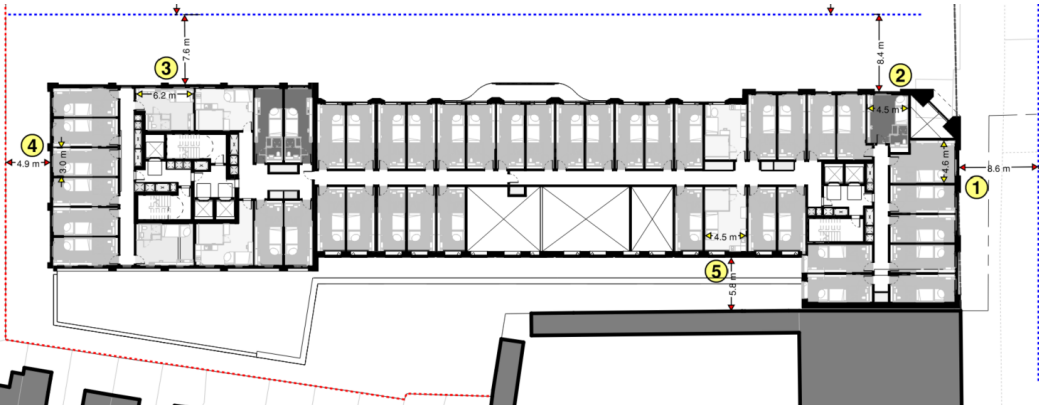
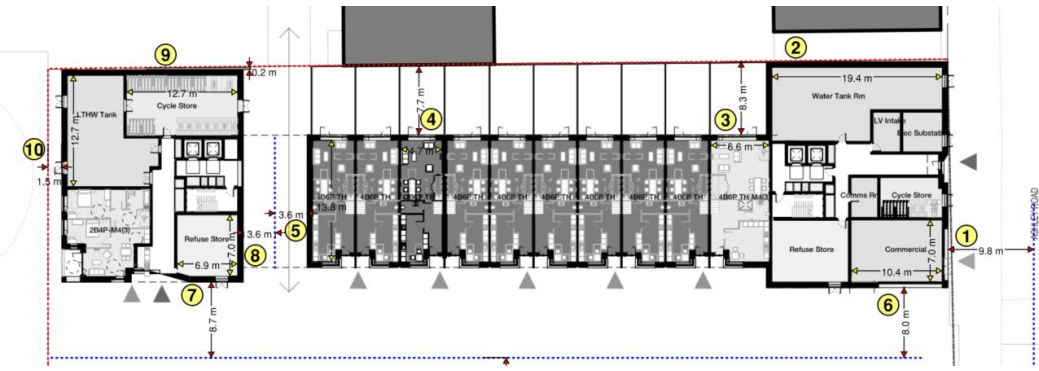
Fire safety measure	Description
	separated by a minimum of REI 60 and such that the floor area of compartments does not exceed 100m^2. Rooms housing life safety plant should be enclosed using REI 120. The protected stair (Core 1) should be enclosed with a minimum of REI 60. The firefighting shaft (Core 2) should be enclosed using a minimum of REI 120 Separation between evacuation lifts, their respective lobbies, and protected stairs should be provided with a minimum of REI 60. All shafts, including service risers and lift shafts, should be constructed as protected shafts achieving at least REI 60. All communal corridors should be enclosed in a minimum of REI 60. All apartments should be separated from the remainder of the building and from each other with fire-rated construction achieving a minimum of REI 60. All multi-storey flats should be provided with a protected stairway within a protected internal hallway enclosed using REI 30. Substations should be enclosed with construction achieving REI 240 Re-entrant corners between external walls ($<135^\circ$) should be designed as fire-resisting (including openings) for a distance of 1.0m. This should be increased to 1.8 m between a compartment and a protected stair core.
Fire doors	Fire doors should be specified in accordance with Table 15 of BS 9991.
Fire-stopping	Fire-stopping should be provided at the junction of fire-separating walls and external walls to maintain the fire resistance period of fire-separating walls and thereby prevent a fire from travelling around the junction and into the neighboring space. Penetrations through lines of fire-resisting separation should be fire-stopped using a system which achieves the same fire resistance rating as the penetrated wall or floor. Any pipe or cable penetrations through lines of fire-resisting separation should be fire-stopped in accordance with one of the methods set out in Section 27.5 of BS 9991 or Section 32.5.14 of BS 9999.
Protection of ductwork	Where a ventilation duct passes through a fire resisting element to maintain the integrity of the element being breached one of the methods set out in Section 27.3 of BS 9991 or Section 32.5.2 should be implemented.
Concealed spaces	Cavity barriers should be provided in order to prevent the rapid spread of unseen fire or smoke within voids, and to prevent the spread of fire around compartmentation via voids. Cavity barriers should be provided in accordance with Section 25.1 of BS 9991 or Section 33.1 of BS 9999.

Table 10 – External fire spread

Fire safety measure	Description
External wall construction	Regulation 7(1A) prohibits the use of relevant metal composite materials in the external walls of all buildings, irrespective of height. Block A will have a height greater than 18 m and is therefore classified as a "Relevant Building" in accordance with Regulation 7(4) of the Building Regulations 2010 (as amended). Accordingly, the building must comply with Regulation 7(2), which states that building work must be carried out such that materials forming part of an external wall or specified attachment of a relevant building achieve European Classification A1 or A2-s1,d0, when classified in accordance with BS EN 13501-1:2007+A1:2009[30]. Regulation 7(3) sets

Fire safety measure	Description
	out specific components that are exempt from the requirements of Regulation 7(2). Block B will have a top storey height above 11m and as such, in accordance with Section 24.1 of BS9991, the external wall construction should be of class A2-s1, d0 or better materials.
Roof coverings	The classification of roof coverings should be B _{ROOF} (t4) for both buildings, in accordance with Table 11 of BS 9991, as the distance of roof from any point on relevant boundary is less than 6m.
Green roofs	For the design of green and biodiverse roofs is provided in the GRO Green Roof Guide [2], and the DCLG Fire Performance of Green Roofs and Walls [3] guide. The general recommendations for consideration in the design of green roofs are summarised below: - The waterproofing layer at the base of the substrate layers will achieve a classification no less than the roof covering designation. - The substrate and growing media will be a minimum depth of 80mm and consist of no more than 20% organic content, where this will not consist of peat. The GRO guide recommends that extensive substrates are tested in line with BS 8616. - Fire breaks of at least 500mm wide will be provided from the perimeter edge as well as from any openings (doors, windows, vents, etc.) and vertical elements of all types. - Fire breaks of at least 1.5m will be provided either side of compartment walls below, or otherwise, the roof covering and waterproofing classifications will be at least B_{ROOF}(t4) for 1.5m either side of the compartment wall below. - Fire breaks will be provided in 1m wide strips every 40m across extensive green roofs. - Fire breaks on green or biodiverse roofs may be provided using 20-50mm rounded pebbles at least 75mm deep. Paving slabs at least 40mm thick may also be used as fire breaks. All formations of fire breaks will have a width of at least 500mm. Provided that the structural deck and roof coverings comply with requirements B3, the presence of a green roof will not adversely affect the designation and the minimum relevant boundaries provided in BS 9991 are applicable.
PV panels	Current recommendations in BS 9991 and other fire safety design guidance such as Approved Document B Vol.2 [4], provides limited guidance on fire safety provisions for PV panels. However, PV panels are also installed across roofs of buildings, and these are not addressed in current fire safety design guidance in England. Ashton Fire recommends the following as good practice where PV panels are provided: - The replacement or removal of plastic supports which can contribute to the fire load, burning time etc. Where possible, these will be replaced with metallic, non-combustible supports. - As a minimum, a BROOF(t4) roof covering will be specified for areas where PV panels will be installed. In order to further mitigate the risk of fire spreading across the roof surface, it is recommended that the roof build-up beneath PV panel arrays is comprised of non-combustible materials. - PV panel arrays will not be continuous across compartment walls. It is noted that no compartment walls are provided to subdivide the building into separate compartments (though this is considered to be mitigated by the roof slab being a compartment floor). - A firefighters' isolation switch will be installed in a readily accessible location (such as next to the fire alarm panel) to permit the isolation of the DC source from the PV system. - Arc fault detection will be provided to mitigate the risk of ignition. - PV panel arrays are to be a minimum of 3m away from any adjacent external façade.

Fire safety measure	Description
	Other recommendations related to the management and maintenance of the systems are provided below: - Routine and preventative inspection and maintenance will be carried out regularly to mitigate any ignition risks which may arise or increase over time. Inspections are recommended to be conducted at least annually, including for PV panels located on the building façade, which pose an increased risk of water ingress into the DC Isolator enclosures. - The management of vegetation and cleaning of PV panels. As stated in Section 5.5.9 of the RC62, "The gaps between the PV panels and the roof can trap debris, foliage, bird/rodent nests etc.". These materials can present additional ignition sources and increase the available fuel load in case of a PV panel fire.
External fire spread	Should a fire occur in a building, heat will radiate through non-fire resisting openings in the external walls. This heat can be sufficient to set fire to nearby buildings and in order to mitigate the risk of external fire spread, BS 9991 places limits on the area of the external elevation with no fire resistance, known as the unprotected area. The relevant boundaries are the reference points at which the potential for fire spread will be assessed, being: - The site boundary. - The centreline of a space where further development is unlikely, such as a road, railway, canal or river; or - A notional boundary between two buildings on the same site where either of the following is met: - One or both of the buildings comprise occupancy characteristics B or C, which represent a greater life risk. - The buildings will be operated/managed by different organisations. In accordance with Clause 24.4 of BS 9991, only small, unprotected areas in an otherwise protected façade do not contribute to the extent of unprotected area. The allowable unprotected areas have been assessed using the enclosing rectangle method of the BRE report BR 187 [5], taking into account the compartment dimensions and specified emitter radiation intensities. Two radiation intensities have been adopted in accordance with BR 187, corresponding to a standard and reduced fire load density, depending on the different occupancy types, as follows: 84 kW/m² for residential spaces; and 168 kW/m² for non-residential areas and ancillary spaces (e.g. commercial units, plant rooms, refuse stores). The benefit of the automatic sprinkler system has been considered in the external fire spread assessment. In accordance with BR 187, the height and width of the enclosing rectangle are measured to the nearest compartment wall/floor. Therefore, the worst-case scenario situation (corresponding to the largest compartment coinciding with each elevation) has been assessed. Where an external wall is within 1.0m from the relevant boundary, that external wall will have a 0% unprotected area and is required to achieve the fire resistance from both sides. Where a fire-resisting external wall which has a surface material that is worse than class C-s3, d2 and is more than 1mm thick, that part of the wall will be classified as an unprotected area equating to half of its area.

Fire safety measure	Description
	Indicative measurements between the building elevations and associated relevant boundaries are shown in Figure 16 to Figure 19 below.  Figure 16 - Measured distances to relevant boundaries, Block A, Ground floor  Figure 17 - Measured distances to relevant boundaries, Block A, Upper floor  Figure 18 - Measured distances to relevant boundaries, Block B, Ground floor

Fire safety measure	Description

Fire safety measure	Description						
	Table 10.2 - Calculated allowable unprotected areas - Block B						
	Elevation	Enclosing rectangle [m]		Radiation intensity [kW/m2]	Sprinklers considered	Distance to boundary [m]	Allow able unprotected area (%)
		W	H				
	Ground Floor						
	1	7.0	2.8	168	Yes	9.8	100.0
	2	19.4	2.8	168	Yes	0.0	0.0
	3	6.6	2.8	84	Yes	8.3	100.0
	4	4.7	2.8	84	Yes	7.7	100.0
	5	13.8	2.8	84	Yes	3.6	100.0
	6	10.4	2.8	168	Yes	8.0	100.0
	7	6.9	2.8	168	Yes	8.7	100.0
	8	7.0	2.8	168	Yes	3.6	100.0
	9	12.7	2.8	168	Yes	0.2	0.0
	10	12.7	2.8	168	Yes	1.5	36.9
	Upper Floors						
	1	10.7	2.7	84	Yes	9.8	100.0
	2	17.6	2.7	84	Yes	3.3	100.0
	3	6.6	2.7	84	Yes	8.3	100.0
	4	4.7	2.7	84	Yes	7.7	100.0
	5	13.7	2.7	84	Yes	3.6	100.0
	6	12.4	2.7	84	Yes	8.0	100.0
	7	12.5	2.7	84	Yes	8.7	100.0
	8	7.0	2.7	84	Yes	3.6	100.0
	9	15.1	2.7	84	Yes	0.2	31.3
	10	11.9	2.7	84	Yes	1.5	76.5

5. ACCESS AND FACILITIES FOR THE FIRE AND RESCUE SERVICE

5.1 Vehicle access to and around the site

- 5.1.1 Vehicle access to the site will be provided via the existing Ashley Road to the east of the site. An internal access road, suitable for use by Fire and Rescue Service (FRS) vehicles, should be provided within the site and should enable access to the north elevation of Block A and south elevation of Block B.
- 5.1.2 The access routes for the fire appliances should meet typical values noted in Table 11, reproduced from Table 1 in London Fire Brigade Guidance No. 29 (GN 29)[32].
- 5.1.3 Block A is fitted with a wet riser main. As such, access and hardstanding areas should be provided for pump appliance to within 18m of each firefighting shaft entrance and within sight of the inlet for the emergency replenishment of the suction tank for the wet fire main.
- 5.1.4 Block B is fitted with a dry riser main. As such, access and hardstanding areas should be provided for pump appliance to within 18 m of each fire main inlet connection point.
- 5.1.5 The appliance should not be required to reverse more than 20m. Suitable turning facilities should be provided such as a hammerhead or turning circle to limit the maximum reverse distance of the appliance.

Table 11 - Typical firefighting appliance access requirements

Minimum access route specification	Appliance type	
	Pump	High reach (32m TL)
Min. width of road between kerbs (m)	3.7	
Min. width of gateways (m)	3.2	
Max. width considering equipment trays, any extending legs (m)	4.18	5.6 (without spreader plates)
Min clearance height (m)	3.51	3.45
Appliance length (m)	8.13	10.3
Min sweep circle (turning circle between walls) (m)	17	19.5
Min. turning circle between kerbs (m)	16	17.5
Gross Vehicle Weight (GVW) (KG)	16,000	20,500
Capacity, Gross Laden Weight (CLW) (KG)	14,838	17,284
Note: The dimensions above are given for a pump appliance. However, GN29 recommends that the upper number for width and weight should be adopted, as any appliance could be attending a fire incident. As the public roads are existing, agreement should be sought with the fire service that they are adequate.		

5.2 Water supplies

- 5.2.1 Hydrants will be required in the vicinity of the building to support firefighting operations. Any new hydrants should be located within 90 m of an entry point to Block A and not more than 90 m apart as well as within 90 m of each dry fire main inlet point in Block B.
- 5.2.2 The location of existing fire hydrants near the building, as confirmed by London Fire Brigade is shown in Figure 20. These include slightly extended distances to the west cores in Blocks A and B of 93m, and 108m respectively where the inlet point for the dry riser, and infill point for the wet riser are adjusted to reduce the distance from the hydrant as low as possible.

- 5.2.3 If new fire hydrants are to be installed, they should be included as part of a fire ring main system. They should preferably be sited immediately adjacent to roadways or hard-standing facilities suitable for fire and rescue service appliances. To ensure that they remain usable during a fire, they should be sited with consideration of the effect that falling debris and other possible occurrences during a fire might have on the continuing viability of the location and as such will be sited not less than 6m from the building.
- 5.2.4 Private hydrants should be designed and installed in accordance with BS 9990. All hydrants should have signage in accordance with BS 3251[33].



Figure 20 - FRS access and firefighting provisions

5.3 Firefighting provisions

- 5.3.1 As Block A exceeds 50 m in height to the topmost occupied storey, and has floors with an area above 900m², the building should be provided with two firefighting shafts containing wet fire mains (Cores 1&3). The escape stair (Core 2) does not need to be provided with a wet rising fire main. Each wet rising main should have outlets at every level.
- 5.3.2 The wet rising main should be designed and installed in accordance with BS 9990:2015[28].

- 5.3.3 Block B has a top floor height below 18m and as such does not require a firefighting shaft based on the block's height. Notwithstanding the above, one of the cores (Core 2) will be provided as a firefighting shaft so as to ensure hose-laying distances are within the limits recommended by BS 9991. The block will be provided with dry risers in each core.
- 5.3.4 When measured on a suitable hose laying route, all areas on the floorplate of Block A should be within 60m of a fire main outlet located in a firefighting/ protected stair measured along a route suitable for laying hose.
- 5.3.5 Similarly, all areas on the floorplate of Block B should be within 45m of a fire main outlet located in the protected stair (Core 1) and within 60m of a fire main outlet located in the firefighting stair (Core 2) measured along a route suitable for laying hose.
- 5.3.6 Owing to the height of the building, all lifts in Block A should be provided as dual-purpose firefighting and evacuation lifts in order to increase overall resilience. The building should also be provided with firefighter communication systems, such as a radiating cable (leaky feeder), distributed antennae systems (DAS) or fire telephones.
- 5.3.7 Both blocks A and B should be provided with a premises information box given they have a top floor height greater than 11m above ground.
- 5.3.8 Block B should be provided with at least one evacuation lift in Core 1 and at least one dual-purpose firefighting and evacuation lift in Core 2 (or 1x firefighting lift and 1x separate evacuation lift).
- 5.3.9 A summary of the key firefighting provisions for each block has been provided in Table 12.

Table 12 - Key firefighting provisions

Building	Number of storeys	Key Firefighting Provisions
Block A	23 (G+22)	Core 1 (serving all floors): A firefighting shaft including a firefighting stair, two dual-purpose firefighting/evacuation lifts and a wet riser. Core 2 (serving all floors): A protected stair core including a protected stair and one dual-purpose firefighting/evacuation lift. Core 3 (serving floors 00-07): A firefighting shaft including a firefighting stair, two dual-purpose firefighting/evacuation lifts and a wet riser.
Block B	6 (G+5)	Core 1 (serving all floors): A protected stair core, equipped with a dry riser and two evacuation lifts. Core 2 (serving all floors as well as the roof of the block): A firefighting shaft, equipped with a dry riser, one evacuation and one firefighting lift.

5.4 Access into and through the building

Block A

- 5.4.1 The FRS will enter Block A at ground level via perimeter doors to commercial areas, ancillary rooms around the building perimeter, or directly into all cores via protected passageways enclosed using REI 120 minutes construction to each firefighting shaft / protected stair.

- 5.4.2 The firefighting shafts in Core 1&3 should have a layout at fire and rescue service as per that indicated in Figure 20b of BS 9999.

- 5.4.3 Access to the upper levels of Block A will be facilitated by two firefighting stairways (Cores 1&3) and a protected stairway (Core 2), achieving a minimum clear width of 1,100mm and 1,000mm respectively. The stairs will connect to a ventilated lobby which provides access to the common corridors. A 5m² muster point should be provided at firefighting access level. Each firefighting stair will be located within a firefighting shaft provided with at least one dual-purpose firefighting and evacuation lift.

- 5.4.4 Though the building is primarily designed to employ a stay-put policy, BS 9999 recommends buildings with firefighting shafts are provide with an additional 500mm width at the final exit from the firefighting shaft to allow for contra-flow between the FRS entering the building and occupants escaping.

Block B

- 5.4.5 The FRS will enter Block B at ground level via perimeter doors to commercial areas, ancillary rooms and flats accessed directly by private entrances around the building perimeter, or directly into both cores via protected passageways enclosed using 60 minutes fire resisting construction to each protected stair.

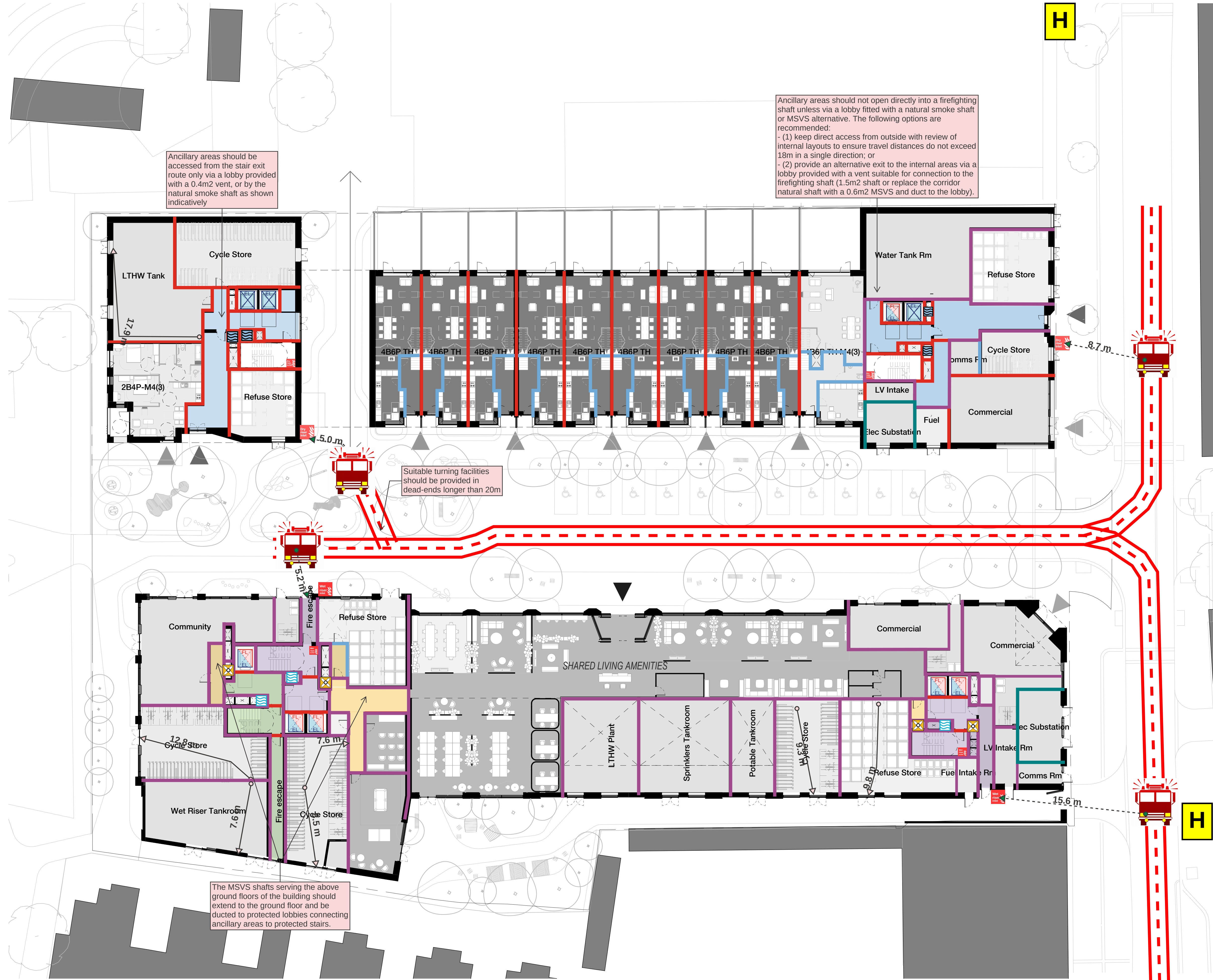
- 5.4.6 Access to the upper levels of Block B will be facilitated by one protected and one firefighting stair, achieving a minimum clear width of 1,000mm and 1,100mm respectively. The stairs will connect to a ventilated lobby which provides access to the common corridors. The firefighting stair will be located in a firefighting shaft provided with at least one firefighting lift.

- 5.4.7 All access doors into both blocks should achieve a minimum width of 750mm.

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APPENDIX A - FIRE SAFETY MARK-UPS



ASHLEY HOUSE SITE - PROPOSED GROUND FLOOR PLAN

1 : 200



Project Name:
Ashley Park, Tottenham Hale

Drawing Title:
FIRE STRATEGY MARK-UPS & COMMENTS

Author: CK

Date: 19.08.26

Checked: GT

Issue: 03

Project Number: AF 6610

ASHTON FIRE

Fire Resistance

Rating (Minutes)	Walls	Doors	
		With Smoke Seals	Without Smoke Seals
30			
60			
120			
240			

Legend

Firefighting Stair

Protected Stair

Mechanically ventilated area

Naturally ventilated area

Evacuation lift

Firefighting/evacuation lift

Natural smoke shaft (1.5m2)

Mechanical extract shaft

Inlet air shaft

AOV at head of stair

Fire Fighting

Dry riser inlet

Dry riser outlet

Wet riser inlet

Wet riser outlet

Hose laying distance

FRS access road

FRS vehicle

Hydrant

DOCUMENT NUMBER

AHCF-DLA-ZZ-00-DR-A- 20200

DOCUMENT PURPOSE

PLANNING

REVISION

P13

ASHLEY HOUSE SITE - PROPOSED 1st FLOOR PLAN
1 : 200





Project Name:
Ashley Park, Tottenham Hale

Drawing Title:
FIRE STRATEGY MARK-UPS & COMMENTS

Author: CK

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Project Number: AF 6610

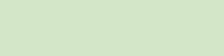
ASHTON FIRE

Fire Resistance

Rating (Minutes)	Walls	Doors	
		With Smoke Seals	Without Smoke Seals
30			
60			
120			
240			

Legend

 Firefighting Stair

 Protected Stair

 Mechanically ventilated area

 Naturally ventilated area

 Evacuation lift

 Firefighting/evacuation lift

 Natural smoke shaft (1.5m²)

 Mechanical extract shaft

 Inlet air shaft

 AOV at head of stair

Fire Fighting

 Dry riser inlet

 Dry riser outlet

 Wet riser inlet

 Wet riser outlet

 Hose laying distance

 FRS access road

 FRS vehicle

 Hydrant

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AHCF-DLA-ZZ-01-DR-A- 20201

DOCUMENT PURPOSE
PLANNING

REVISION
P10