Block B, Agar Grove Estate

London Plan - Fire Statement

London Plan

Revision 01

26 May 2022

Contents

1 Introduction

This Fire Statement has been prepared by Design Fire Consultants (DFC) and is submitted in support of the planning application made by the London Borough of Camden for the development of Block B, Agar Grove, in the London Borough of Camden.

Block B forms part of a wider masterplan for the regeneration of the Agar Grove estate that was granted planning permission in 2013 (and amended in 2020).

To date, Blocks A, F, G and H have been completed, whilst construction works on Blocks I and JKL are underway. This application seeks permission for a number of minor amendments to the approved Block B element of the scheme.

The purpose of this Fire Statement is to evidence that fire safety matters, as they relate to land use planning matters, have been considered at an early stage of the project. This fire statement forms part of the planning application information only and is not intended for formal Building Regulations submission.

1.1 Project Description

The development comprises two residential blocks, Block B1 and Block B2, which are connected at ground level with a reception lobby. Levels 00 and 01 provide ancillary and amenity space alongside a flexible workspace to be leased to another party. The remaining floors provide residential flats.

The key building features which influence the fire safety design are outlined in Table 1.

Table 1: Key Building Features

Item		Apartment Block	
		Block B1	**Block B2**
Height of the topmost storey		20.5m	55.7m
Number of storeys		7	18
Use	Level 00	Community hall with buggy park and kitchen, refuse store, concierge office, toilets and sprinkler tank room	Flexible workspace, cycle store, refuse stores, cleaner's store, caretaker's store, wet riser tank rooms, substation and LV switch room
	Reception Lobby	Concierge desk and post boxes	
	Level 01	Community rooms, meeting rooms, estate management office, toilets	Flexible workspace with associated amenities (toilets, store and kitchen)
	Levels 02-06	Apartments with private balconies	Apartments with private balconies
	Levels 07-17	Apartments with private balconies	Apartments with private balconies

1.2 Legislative Requirements

1.2.1 Building Regulations 2010

The fire safety design must achieve the minimum standard required by Part B of Schedule 1 to the Building Regulations 2010[1] (Part B). Part B applies to building design, whilst for the ongoing operation of building, compliance with the Regulatory Reform (Fire Safety) Order[2] (FSO) is required.

The fire safety design will be developed in cognisance of the Construction (Design and Management) Regulations[3] (CDM), which sets out what designers are required to consider to protect those involved in the construction or ongoing use of a building.

The fire strategy will be refined as the design develops to demonstrate compliance with Part B, as well as taking into consideration future compliance with the FSO. As the design develops the fire strategy will be used for obtaining approval from the Approving Authorities.

1.2.2 Town and Country Planning Order

The Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended)[4] requires that a Fire Statement is submitted as part of a full planning application (or with the reserved matters planning application), for a development which contains two or more dwellings; and is 18m or more in height, or contains 7 or more storeys.

The statutory consultee established under the regulatory regime is the Health and Safety Executive (HSE). A separate Fire Statement for review by the HSE has been submitted under planning gateway one in support of the planning application.

1.2.3 London Plan

The London Plan 2021[5] is the Spatial Development Strategy for Greater London provided under the Town and Country Planning (London Spatial Development Strategy) Regulations 2000[6]. It is legally part of each of London's Local Planning Authorities' Development Plan and must be taken into account when planning decisions are made in any part of Greater London.

Policy D12 of the London Plan addresses fire safety of developments to ensure that proposals consider issues of fire safety at the earliest design stage before the building control application stage. Policy D5(B5) addresses the need for inclusive design, which incorporates safe and dignified emergency evacuation for all building users.

This Fire Statement is intended to demonstrate that the fire safety measures allowed for in the design are sufficient to satisfy the requirements of Policy D12 and D5(B5) of the London Plan.

[1] Statutory Instruments, '2010 No. 2214 Building and Buildings, England and Wales, The Building Regulations 2010' (as amended)
[2] Statutory Instruments, '2005 No. 1541 Regulatory Reform, England and Wales, The Regulatory Reform (Fire Safety) Order 2005', 2005
[3] Statutory Instruments, '2015 No. 15 Construction (Design and Management) Regulations 2015 Health and Safety', 2015
[4] UK Government, 'The Town and Country Planning (Development Management Procedure and Section 62A Application (England) (Amendment) Order 2021', July 2021
[5] The London Plan, 'The Spatial Development Strategy for Greater London', Mayor of London, March 2021
[6] Statutory Instruments, '2000 No. 1491 The Town and Country Planning (London Spatial Development Strategy) Regulations 2000', July 2000.

1.3 Basis of Design

It is proposed to adopt the guidance of BS 9991[7] (with cognisance of Approved Document B Vol. 1[8] (ADB Vol. 1)) for the residential areas of the building to demonstrate compliance with the Building Regulations.

For commercial areas of the building, where BS 9991 and Approved Document B Vol.1 do not provide specific guidance, BS 9999[9] will be used as the basis of design.

Guidance has not yet been published to specify the implementation of policies D12(B) and D5(B5) of the London Plan, however, the following draft documentation has been considered:

- DRAFT London Plan Guidance Fire Safety[10]
- DRAFT London Plan Guidance Sheet: Policy D12(B) Fire Statements[11].
- DRAFT London Plan Guidance Sheet: Policy D5(B5) Evacuation Lifts[12].
- DRAFT BS EN 81-76: Evacuation of persons with disabilities using lifts[13].

Input to assist the specification of key fire safety systems are based on experience and initial calculations and are subject to confirmation following completion of detailed analysis at later design stages.

1.3.1 Qualitative Design Review (QDR)

The need for a qualitative design review (QDR) is recognised due to the lack of published guidance on the implementation of evacuation lifts within residential buildings. This is to be undertaken in accordance with BS 7974[14] to demonstrate that all fire hazards and varying fire scenarios have been identified and considered to support the design.

The QDR process will be undertaken in phases to reflect the development of the design:

- Meeting 1: Internal QDR meeting; held within DFC.
- Meeting 2: Design Team QDR; held with relevant members of the design team, chaired by DFC.
- Meeting 3: London Fire Brigade QDR; held with relevant members of the design team, key stakeholders, Building Control and members of the London Fire Brigade, chaired by DFC.

The first stages for the QDR will take place in parallel with the planning application and will form appendices to the Fire Strategy report.

[7] BS 9991, 'Fire safety design, management and use of residential buildings', 2015
[8] HM Government, The Building Regulations 2010, Approved Document B (Fire Safety), Volume 1 – Dwellings 2019 edition (as amended).
[9] BS 9999, 'Code of practice for fire safety in the design, management and use of buildings', 2017
[10] DRAFT London Plan Guidance Fire Safety, Mayor of London, Greater London Authority, February 2022.
[11] DRAFT Greater London Authority, 'London Plan Guidance Sheet: Policy D5(B5), n.d.
[12] DRAFT Greater London Authority, 'London Plan Guidance Sheet: Policy D12, n.d.
[13] DRAFT BS EN 81-76, 'BS EN 81-76, 'Safety rules for the construction and installation of lifts - Particular applications for passenger and goods passenger lift. Part 76: Evacuation of persons with disabilities using lifts', 2019
[14] BS 7974, 'Application of fire safety engineering principles to the design of buildings. Code of Practice, 2001

1.4 Schedule of Relevant Plans

Table 2: Relevant Plans Used to Inform the Fire Statement

Name	Reference
Site Plan	AGC377-GRA-2A-DR-L-1003 - Phase 2A General Arrangement
Site Wide Masterplan	AGC377-GRA-2A-DR-L-1001 - Site Wide Masterplan
Level 00	AGV-HBA-B-00-DR-A-20-0100
Level 01	AGV-HBA-B-01-DR-A-20-0101
Level 02	AGV-HBA-B-02-DR-A-20-0102
Level 03	AGV-HBA-B-03-DR-A-20-0103
Level 04	AGV-HBA-B-04-DR-A-20-0104
Level 05	AGV-HBA-B-05-DR-A-20-0105
Level 06	AGV-HBA-B-06-DR-A-20-0106
Level 07	AGV-HBA-B-07-DR-A-20-0107
Level 08	AGV-HBA-B-08-DR-A-20-0108
Level 09	AGV-HBA-B-09-DR-A-20-0109
Level 10	AGV-HBA-B-10-DR-A-20-0110
Level 11	AGV-HBA-B-11-DR-A-20-0111
Level 12	AGV-HBA-B-12-DR-A-20-0112
Level 13	AGV-HBA-B-13-DR-A-20-0113
Level 14	AGV-HBA-B-14-DR-A-20-0114
Level 15	AGV-HBA-B-15-DR-A-20-0115
Level 16	AGV-HBA-B-16-DR-A-20-0116
Level 17	AGV-HBA-B-17-DR-A-20-0117
Level 18	AGV-HBA-B-18-DR-A-20-0118
Roof	AGV-HBA-B-19-DR-A-20-0119
East and West Elevations	AGV-HBA-B-ZZ-DR-A-20-0201

Name	Reference
North Elevation	AGV-HBA-B-ZZ-DR-A-20-0202
South Elevation	AGV-HBA-B-ZZ-DR-A-20-0203
Internal East and West Elevations	AGV-HBA-B-ZZ-DR-A-20-0204

2 Fire Statement

The following subsections set out the relevant information for the application and the fire safety matters which are relevant to land use planning. The information provided is in line with that requested within Appendix 3 of the London Plan Fire Safety Guidance published in draft by the Greater London Authority in February 2022.

The information relating to fire safety measures for the development provided herein is not exhaustive and will be refined as the design develops.

2.1 Application Information

Table 3 sets out the information for the building which is relevant to the planning application.

Table 3: Application Information for the Development

Application Information	
Site Address	Block B, Agar Grove London Borough of Camden London Inner London
Description of development	Variation of condition 63 (approved plans) of planning permission ref: 2019/4280/P (as amended) (for demolition of existing buildings and structures except Lulworth House and Agar Children's Centre (249 existing Class C3 residential units and 2 retail units), and erection of new buildings ranging between 4 and 18 storeys in height along with the refurbishment and extension of Lulworth House to provide Class C3 residential units; a community facility (Class D1); 2 flexible retail shop (Class A1) or restaurant and cafe (Class A3) units; business space (Class B1(a)); 2 flexible retail shop (Class A1), business (Class B1) or non-residential institution (Class D1) units), namely to allow adjustments to Block C, including addition of second stair cores and evacuation lifts; revised unit mix; reduction in 11 units; additional cycle storage; and changes to external appearance.
Competency	**Author** **Name:** Mary Button **Post-Nominals**: BEng, BSc, MSc, PGCert, AIFireE, MSFPE **Years of Experience**: 2 **Summary Statement**: BEng in Fire Risk Engineering. Associate Engineer with the Institution of Fire Engineers. Mary has experience in collaborating with design teams to develop fire safety strategies for both high rise residential buildings and commercial developments.

	Checker **Name:** Neal Butterworth **Post-Nominals**: BEng, MPhil, CEng, MIFireE **Years of Experience**: 20 **Summary Statement**: Neal is Chartered Fire Engineer. He has a degree in Civil and Structural Engineering and an MPhil in Structural Fire Engineering. Neal has extensive experience of delivering fire strategies for high-rise residential
Has a Gateway One Statement been submitted?	Yes (see 1971_TCFS001.0_The Town and Country Planning Order Fire Statement_220525)

2.2 The Building's Construction: Methods, Products and Materials Used

Table 4 specifies the construction method of the development and the measures that will be taken to limit any impact on the surrounding area.

Table 4: The Buildings Construction Information

The Building's Construction: Methods, Products and Materials Used	
Construction Method	The proposed building is to be constructed using a reinforced concrete frame. Core walls will be constructed from reinforced concrete. At ground floor (Level 00), blockwork internal partitions will be used, with blockwork used as the inner leaf for the external walls, and a brick faced GRC panel as the outer leaf. A steel framing system will be used to create internal partitions from the 1st floor (Level 01) and above. A steel framing system inner leaf and a brick faced GRC panel outer leaf will be utilised for construction of the eternal walls. Where steel framing system internal partitions meet the external wall and no column is present, a dummy (masonry or concrete) column will be provided as a fire stop. Stairs are to be concrete on permanent formwork. The substation will be formed as an in-situ concrete box. Balconies are to be constructed from reinforced concrete. The link structure between Blocks B1 and B2, providing the roof for the reception lobby, will be constructed from intumescent coated long span steel, supported by concrete down-stands. A Metal Deck (or similar) product will be used to cover the roof. The selection of the final products/materials to be used in all aspects of the construction are unknown at this stage, and therefore will be developed as the design progresses. All materials/products used in the construction will be required to meet the requirements of the agreed Fire Strategy, and therefore Part B of the Building Regulations, and will be subject to agreement with the relevant approval authorities.

	During the construction of the building, the works will be covered under the CDM Regulations which sets out what designers are required to consider to protect those involved in the construction or ongoing use of a building. The main contractor must also abide by all other relevant construction site guidance issued by the Health and Safety Executive (HSE).
Fire Resistance & Internal Linings	The fire resistance that is required to be achieved by the various elements of the development and the requirements for internal wall and ceiling linings within the building is provided in Table 6.
External Walls – Combustibility	As the height of the building exceeds 18m, the external walls will be subject to Regulation 7, such that all materials which become part of an external wall or specified attachment achieve European Class A2-s1, d0 or Class A1, other than those exempted by Regulation 7(3). This includes any insulation product, filler material (such as the core materials of metal composite panels, sandwich panels and window spandrel panels but not including gaskets, sealants and similar) etc. used in the construction of the external wall.
External Walls – Fire Resistance	The external walls of the building are required to adequately resist the spread of fire over the walls and between buildings, having regard to the height, use and position of the building. BR 187[15] has been used to conduct an initial assessment to determine if areas of the façade may need to be fire resisting to reduce the risk. A detailed analysis is to be undertaken at a later design stage. The initial assessment indicates that the boundary conditions, combined with sprinkler provision, means it is unlikely that elements of the external walls will need to be fire protected to prevent fire spread to surrounding buildings.

2.3 Means of Escape for All Building Users and Evacuation Strategy

2.3.1 Evacuation Strategy

Residential Apartments

In accordance with BS 9991, the residential apartments will operate a 'stay put' evacuation strategy, whereby only the occupants within the apartment affected by fire are required to evacuate. Others remain in their apartment or can evacuate safely should they choose.

Residential Common Areas, Community Spaces and Flexible Workspace

The building is unlikely to have onsite management 24/7 and therefore the amenity and ancillary areas are to form a separate evacuation zone which evacuates simultaneously in the event of a fire anywhere in that zone.

2.3.2 Horizontal Escape Routes

Protected Entrance Halls

Apartments shall be provided with a protected entrance hall serving all habitable rooms:

[15] R. Chitty, 'External Fire Spread – Building separation and boundary distances' (BR 187), Second Edition, 2014

- The entrance hall walls shall be of 30 minutes fire resisting construction (REI).
- Doors to habitable rooms shall be FD30 fire doors.
- The travel distance within the entrance hall shall be no greater than 9m.

Residential Apartment Travel Distances

The travel distance from any of the habitable rooms within an apartment to the apartment entrance door shall be no greater than 20m, due to the provision of sprinklers and an LD1 fire detection and alarm system.

Residential Common Area Travel Distances

Travel distances from the apartment door to an area provided with a smoke control system will be limited to 7.5m. The travel distance within the ventilated area is not limited within BS 9991 but is limited in practice to a maximum distance of 6.5m to the nearest stair.

Ancillary Area Travel Distances

Table 5: Ancillary area travel distances

Area		Maximum Travel Distance		Minimum Exit Widths
		Single Direction	Two or More Directions	
Plant Areas	Within room	≤ 9m	≤ 18m	≥ 850mm
	To the nearest storey exit	≤ 18m	≤ 45m	
Common amenity including residential storage		≤ 18m	≤ 45m	
Community amenity spaces (fit-out known)		≤ 24m	≤ 60m	
Community amenity spaces (fit-out unknown)		≤ 16m	≤ 40m	
Flexible workspaces (fit-out known)		≤ 26m	≤ 65m	
Flexible workspaces (fit-out unknown)		≤ 17 m	≤ 44m	

Community Area Travel Distances

In accordance with the recommendations of BS 9999, assuming occupants are awake and unfamiliar, and a slow fire growth rate due to sprinklers (B1 Risk Profile), the single direction of travel shall not exceed 24m and where more than one direction of travel is available the travel distance shall not exceed 60m, once fit-out has been completed.

Other Amenity Area Travel Distances

In accordance with the recommendations of BS 9999, assuming occupants are awake and familiar, and a slow fire growth rate due to sprinklers (B1 Risk Profile), the single direction of travel shall not

exceed 26m and where more than one direction of travel is available the travel distance shall not exceed 65m, once fit-out has been completed.

Plant Areas

In accordance with the recommendations of BS 9999, assuming occupants are awake and familiar, and a medium fire growth rate due to sprinklers (B2 Risk Profile), the single direction of travel within the room shall not exceed 9m and where more than one direction of travel is available the travel distance shall not exceed 18m, once fit-out has been completed. This requirement is met within the current design, with the except of the sprinkler tank and wet riser plant rooms, which have travel distances up to 13m in a single direction. This is considered to be acceptable as these are low fire-risk areas, primarily for the storage of water and occupied infrequently for maintenance. They will be provided with a detection and alarm system to warn occupants of a fire at an early stage.

Assembly Point

Block B is part of the development of an estate within Camden. During the development of the estate, the assembly point will be located on Hazelbury Way to the north of Block B (ref. Appendix A Point 1). This avoids occupants being located on a roadway, whilst allowing further movement away from the building should this become necessary. Upon completion of the estate, the assembly point will be located on Milburn Lane where a pedestrian area will be available for assembly (Point 2).

When the units are occupied the location of the assembly point should be routinely reviewed as part of the Landlord and/or tenant fire risk assessment.

2.3.3 Vertical Escape Routes

Residential and Community Escape Stairs

Each residential block is served by a firefighting stair and an escape stair with a minimum width of 1100mm which exits direct to outside.

In accordance with BS 9999, for a Risk Profile C2, a 1100mm wide stair, serving 7 storeys in Block B1, has capacity for 523 people (based on 2.1mm/person). This is sufficient to support a simultaneous evacuation of the block, which has an anticipated maximum occupancy of 224 people, should occupants beyond the apartment of fire origin choose to evacuate. Within Block B2, the 1100mm wide stair would have capacity for 647 people (based on 1.7mm/person). The anticipated residential occupancy of Block B2 is 213 persons.

Flexible Workspace Escape Stairs

The flexible workspace will be served by an additional stair connecting Levels 00 and 01. This will have an unobstructed width of not less than 1200mm. In accordance with BS 9999 and A1 risk profile, this is sufficient for the simultaneous evacuation of 307 people (based on 3.9mm/person). The anticipated occupancy of Level 01 is 76 persons.

2.3.4 Mobility Impaired Persons (MIPs)

In accordance with Policy D5(B5) of The London Plan, an evacuation lift serves each core and is provided with a protected waiting space for Mobility Impaired Persons (MIPs)

Residential Apartments

In the event of a fire within their apartment, MIPs will self-evacuate via the residential common corridors and use the evacuation lifts.

Where there is a fire in any other apartment, occupants in a non-affected apartment can remain in their apartment in line with the stay-put strategy, or evacuate using the evacuation lifts.

Community Areas

MIPs within Level 00 will self-evacuate as level access is provided. Occupants within Level 01 will have access to the residential evacuation lift and will be able to self-evacuate.

Flexible Workspace Areas

In the event of a fire in the flexible workspace, occupants at Level 00 can self-evacuate via the level access. Occupants at Level 01 will be able to access a protected lift lobby, providing access to the evacuation lift. In accordance with the management procedure put in place to support their use, occupants can evacuate using an evacuation lift.

2.4 Passive and Active Fire Safety Measures

Table 6 and Table 7 set out what passive and active fire safety measures have been considered at the earliest design stage. The list is non-exhaustive and will be refined in design development.

Table 6: Passive Fire Safety Measures

Passive Fire Safety Measures	
Elements of Structure (R)	As the height of Block B1 is between 18-30m to the topmost occupied storey, the minimum fire resistance period for all loadbearing elements of structure should be 90 minutes (R), when tested in accordance with BS EN 13501-2[16]. As the height of Block B2 is above 30m to the topmost occupied storey, the minimum fire resistance period for all loadbearing elements of structure should be 120 minutes (R), when tested in accordance with BS EN 13501-2. Protection of balconies and their connection to the building structure will need to be reviewed in detail to ensure there is no impact on structural stability.
Wall and Ceiling Linings	Internal linings are to achieve the following surface spread of flame classification in accordance with BS EN 13501-1[17]: • Small rooms (residential areas) not more than 4m^2 in area: Class D-s3, d2. • Small rooms (non-residential areas) not more than 30m^2 in area: Class D-s3, d2. • Other rooms: Class C-s3, d2. • Circulation spaces within apartments: Class C-s3, d2. • Other circulation spaces, including the common areas of the residential building: Class B-s3, d2.
Fire Resisting Separations R (Loadbearing) E (Integrity) I (Insulation)	Compartmentation shall achieve the required fire resistance rating below, when tested in accordance with BS EN 13501-2: **Block B1** • All floors are to be compartment floors with 90 minutes fire resisting construction (REI).

[16] BS EN 13501-2 + A1, 'Classification using data from fire resistance tests, excluding ventilation services' 2009
[17] BS EN 13501-1, 'Classification using data from reaction to fire tests', 2007

	• Firefighting stairs are to be enclosed in 120 minutes fire resisting construction (REI). • Escape stairs are to be enclosed in 90 minutes fire resisting construction (REI). • Lift shafts are to be enclosed in 120 minutes fire resisting construction (REI). • Service risers are to be enclosed in 90 minutes fire resisting construction (REI). • Smoke extract shafts are to be enclosed in 120 minutes fire resisting construction (REI). • Party walls between apartments are to be 60 minutes fire resisting (REI). • Protected entrance halls are to be enclosed in 30 minutes fire resisting construction (REI). • Construction between apartments and common corridors is to be 60 minutes fire resisting (REI). • The refuse store is to be enclosed in 90 minutes fire resisting construction (REI). • Amenity spaces are to be enclosed in 60 minutes fire resisting construction (REI), other than those with life safety equipment which are to be enclosed in 120 minutes fire resisting construction (REI). **Block B2** • All floors are to be compartment floors with 120 minutes fire resisting construction (REI). • Firefighting stairs are to be enclosed in 120 minutes fire resisting construction (REI). • Escape stairs are to be enclosed in 120 minutes fire resisting construction (REI). • Lift shafts are to be enclosed in 120 minutes fire resisting construction (REI). • Service risers are to be enclosed in 120 minutes fire resisting construction (REI). • Smoke extract shafts are to be enclosed in 120 minutes fire resisting construction (REI). • Party walls between apartments are to be 60 minutes fire resisting (REI). • Protected entrance halls are to be enclosed in 30 minutes fire resisting construction (REI). • Construction between apartments and common corridors is to be 60 minutes fire resisting (REI). • The refuse store is to be enclosed in 120 minutes fire resisting construction (REI).

	• The flexible workspaces are to be separated from other areas by 120 minutes fire resisting construction (REI). • Amenity spaces are to be enclosed in 60 minutes fire resisting construction (REI), other than those with life safety equipment which are to be enclosed in 120 minutes fire resisting construction (REI). **General** Plant and amenity rooms accessed from the escape route are to be lobby protected. The level of fire resistance required to plant spaces is dependent on the type of plant housed.
Fire Doors	All fire door assemblies shall achieve the required fire resistance rating below, when tested in accordance with BS EN 1634-118, tested to both sides: • Apartment doors: FD30S • Stair doors: FD60S • Amenity spaces: FD60S • Lift doors: FD60 • Risers within protected lift lobbies: FD60S • Service riser doors: FD60 Fire doors denoted with the suffix 'S' require 'smoke seals'. Cold smoke seals should comply with BS EN 1634-3[19].
Roof Coverings	Roof coverings should achieve a minimum C_{ROOF} or B_{ROOF}(t4) in accordance with BS EN 13501-5[20], tested as part of the proposed substrate.
Fire and Smoke Dampers	Where ducted ventilation systems serve more than one compartment or pass through escape routes, detector actuated fire and smoke dampers are required where they penetrate fire resistant walls or floors to maintain the fire resistance. As the building contains a sleeping risk, fire and smoke dampers should be actuated by both smoke detector controlled automatic release mechanisms and thermally actuated devices.
Concealed Spaces & Cavity Barriers	All concealed spaces and cavities should be subdivided with imperforate cavity barriers in the following locations: • To subdivide any cavity such that the maximum cavity dimension does not exceed 20m (where the cavity linings do not achieve either Class C-s3,d2 the dimension should not exceed 10m). • At the edges of cavities including around openings (including windows, doors and exit/entry points for services/vents).

[18] BS EN 1634-1, 'Fire resistance tests for doors, shutters and openable windows', 2014 + A1:2018
[19] BS EN 1634-3, 'Fire resistance tests for doors, shutters and openable windows – Smoke control tests for door and shutter assemblies', 2004.
[20] BS EN 13501-5, 'Fire classification of construction products and building elements. Classification using data from external fire exposure to roofs tests' 2016

	• Within the external wall cavity, at the junction between the external wall and every compartment floor and compartment wall, or other wall or door assembly which forms a fire-resisting barrier. Cavity barriers are to extend to the rear face of the cladding panel. Cavity barriers are to be constructed from materials achieving at least 30 minutes integrity fire resistance (E) and 15 minutes insulation fire resistance (I). Around openings, in a stud wall or partition, the following are acceptable alternatives to a tested barrier system: • Imperforate steel with a thickness of not less than 0.5mm, or • Imperforate timber with a thickness of not less than 38mm, or • Polythene-sleeved mineral wool or mineral wool slab (installed under compression in the cavity), or • Calcium silicate, cement-based or gypsum-based boards at least 12mm thick.
Residential Corridor Ceiling	The residential corridor forms the main escape route for occupants and access route for the fire service and therefore it must remain fire sterile. If the following can be achieved the ceiling does not require fire resistance. If it cannot be achieved, the ceiling requires 60 minutes fire resistance (EI) from the top side. • The surface of the material/product used in the construction of the ceiling must be Class 0 (National class) or Class B-s3, d2 or better (European class) and all supports and fixings in the ceiling must be of non-combustible construction; • The flame spread rating of any pipe insulation system must be Class 0 (National class) or Class B-s3, d2 or better (European class); • Any electrical wiring in the void must be laid in metal trays, or in metal conduit; • No electrical connections should be located within the ceiling void apart from those needed to serve the corridor (lighting, signage etc.); and • Any other materials in the cavity are of limited combustibility or Class A2 or better (European class).
Escape Signage	Escape signage is to be provided in all common escape routes, amenity and commercial areas, in accordance with BS 5499-4[21].

Table 7: Active Fire Safety Measures

Active Fire Safety Measures	
Fire Detection and Alarm	A BS 5839-6[22] LD1 Grade D1 detection and alarm system is to be provided to all residential apartments.

[21] BS 5499-4, 'Code of practice for escape route signing', 2013
[22] BS 5839-6, 'Fire detection and fire alarm systems for buildings. Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises', 2013

	An addressable, Category L5, automatic fire detection and alarm system, in accordance with BS 5839-1[23], is to be provided to residential common areas with coverage equivalent to a Category L2 system. An addressable, Category L1, automatic fire detection and alarm system, in accordance with BS 5839-1, is to be provided to amenity and flexible workspace areas.
Emergency Lighting	Emergency lighting is to be provided in all escape routes in accordance with BS 5266-1[24].
Suppression Systems	The apartments and amenity areas are to be provided with a Category 4 sprinkler system in accordance with BS 9251[25]. Commercial units are to be provided with a BS EN 12845[26] sprinkler system, including the requirements of Annex F.
Common Corridor Smoke Ventilation	**Block B1** An AOV that is sited as high a level as is practicable will be located on the top storey of the stairs having a minimum free area of 1m^2. The lobby to the stairs and fire evacuation lift shall be provided with a mechanical smoke ventilation system that is equivalent to or better than a natural system. The system should meet the following requirements: • It should maintain smoke free conditions in the staircase during both means of escape and firefighting operations. • In advance of a proprietary system with specific requirements, an AOV into the lobby via the external façade, with a geometric free cross-sectional internal area of 1m^2 should be allowed for. An unlatched 'flappy' door is to be provided to separate the stairs, but allow the passage of air on the fire floor. • Mechanical extract fans shall be fire resisting to achieve operation at 300^{o}C for 60 minutes and tested in accordance with BS EN 12101-3. • Fire service override should be provided within the stairs via suitable controls or panels. **Block B2** An AOV that is sited as high a level as is practicable will be located on the top storey of the stairs having a minimum free area of 1m^2. The corridors providing access to the stairs and fire evacuation lift shall be provided with a mechanical smoke ventilation system that is equivalent to or better than a natural system. The system should meet the following requirements:

[23] BS 5839-1, 'Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises', 2017
[24] BS 5266-1, 'Code of practice for the emergency lighting of premises', 2016
[25] BS 9251, 'Fire sprinkler systems for domestic and residential occupancies. Code of practice', 2021
[26] BS EN 12845 + A1, 'Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance', 2015 + 2019

	• It should maintain smoke free conditions in the staircase during both means of escape and firefighting operations. • A passive inlet shaft should be provided within one portion of the corridor while a smoke extract shaft is provided within the other. • Mechanical extract fans shall be fire resisting to achieve operation at 300°C for 60 minutes and tested in accordance with BS EN 12101-3. • Fire service override should be provided within the stairs via suitable controls or panels. All fans and shaft sizes are to be confirmed by the MEP engineer who will undertake the detailed system designs following assessment of the proposed systems using Computational Fluid Dynamics analysis.
Bin Store Ventilation	Bin stores accessed from the common corridors are to be lobby protected. Lobbies are to be provided with mechanical ventilation.
Secondary Power	Secondary power is to be provided in accordance with BS 8519[27] to all fire life safety systems, including the evacuation lifts, as set out in the respective design standards.

2.5 Access and Facilities for the Fire and Rescue Service

2.5.1 Internal Access

As the building has a floor higher than 18m above fire and rescue service access level, internal fire-fighting access is provided comprising of the following:

- A firefighting stair with a minimum width of 1100mm, designed in accordance with BS 5395-1[28].
- A firefighting lift, designed and installed in accordance with BS 9999, BS EN 81-72[29] and other relevant sections of BS EN 81, as appropriate.
- A dry fire main in Block B1 in accordance with BS 9990[30]. A wet fire main in Block B2 accordance with BS 9990[31].
- Floor identification signs and flat indicator signs, in accordance with Clause 15.13-15.16 of ADB Vol. 1, to assist the fire service to identify each floor.
- An Automatic Opening Vent (AOV) located at the head of the stair. The vent is to provide 1.0m^2 aerodynamic area, activated as part of the common corridor smoke ventilation system.

The lobby serving the firefighting stair and lift in Block B1 performs the function of the firefighting lobby.

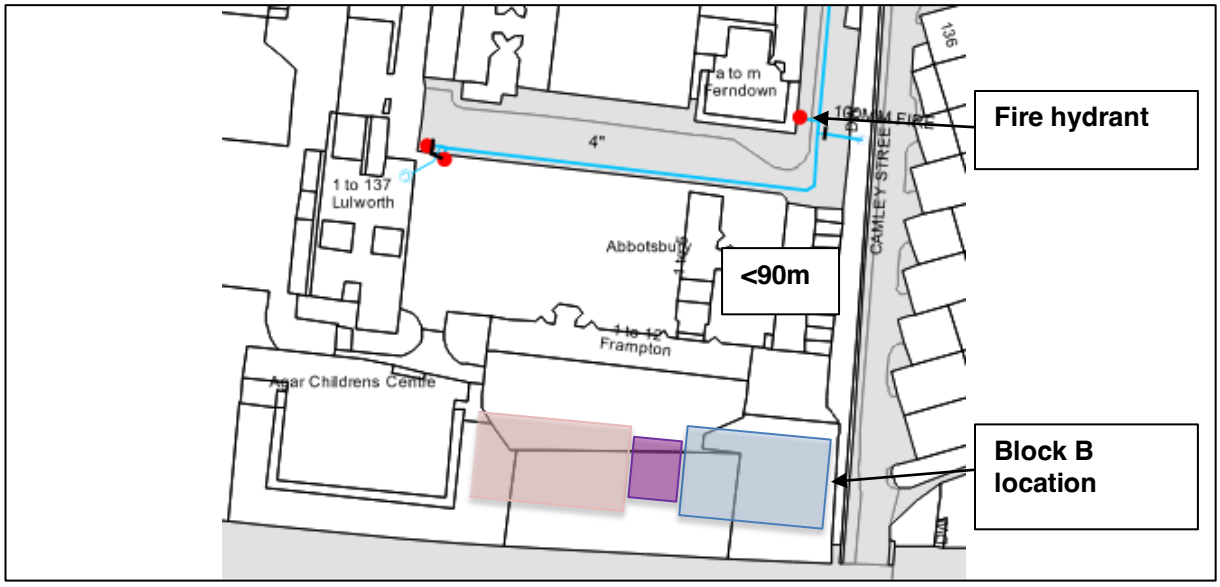
[27] BS 8519: 'Selection and installation of fire-resistant power and control cable systems for life safety and fire-fighting applications.' 2020
[28] BS 5395-1, 'Stairs. Code of practice for the design of stairs with straight flights and winders,' 2010
[29] BS EN 81-72, 'Safety rules for the construction and installation of lifts. Particular applications for passenger and goods lifts. Firefighting lifts,' 2015
[30] BS 9990, 'Non automatic fire-fighting systems in buildings', 2015
[31] BS 9990, 'Non automatic fire-fighting systems in buildings', 2015

The common corridor serving the firefighting stair performs the function of the firefighting lobby within Block B2.

2.5.2 Hydrant Locations

As shown on Figure 1, hydrants are provided within 90m of the dry fire main inlets on a route suitable for laying a hose. All hydrants shall have signage in accordance with BS 3251[32]. Private hydrants will be designed and installed in accordance with the requirements of BS 9990.

Figure 1: Fire Hydrant Location



2.6 Site Access for the Fire and Rescue Service

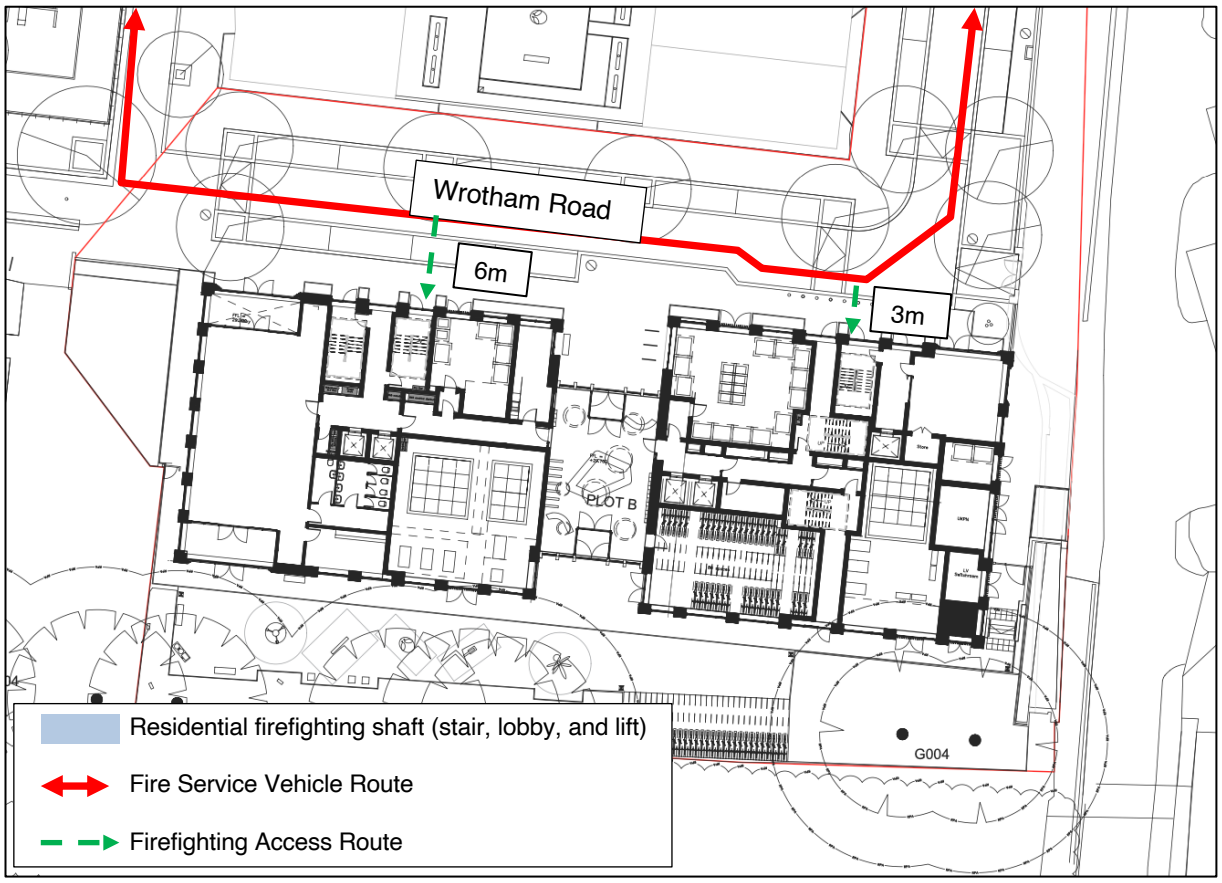
2.6.1 Vehicle Access

Fire vehicle access is required to within 18m of each fire main inlet connection point, typically on the face of the building and within sight of the inlet for the emergency replenishment of the suction tank for the wet fire mains and within the dry riser inlet.

As shown in Figure 2, fire service vehicle access is provided via Wrotham Street. The fire service access will need to be discussed and agreed with the London Fire Brigade.

[32] BS 3251, 'Specification. Indicator plates for fire hydrants and emergency water supplies', 1976.

Figure 2: Fire Service Access



BS 9999 guidance recommends access routes are designed in accordance with for a pump appliance:

- Min. width of road between kerbs = 3.7m.
- Min. width of gateways = 3.1m.
- Min. turning circle between kerbs = 16.8m.
- Min. turning circle between walls = 19.2m.
- Min. clearance height = 3.7m.
- Min. carrying capacity = 14 tonnes.
- Max. reversing distance = 20m.

A swept path analysis has been conducted by the design team to demonstrate the feasibility of vehicle access. This will be provided by other members of the design team (Stantec and Grant Associates)

2.7 Modifications to the Development & the 'Golden Thread' of Information

2.7.1 Fire Safety Design Implementation

Once all works are completed, a completion certificate will be issued by the approval authorities, and once the building is handed over, the Responsible Person(s) must comply with their duties under the Regulatory Reform (Fire Safety) Order 2005. In order to get to this position, the following needs to be conducted.

- The design team must incorporate the fire safety design as specified in this document and the supporting fire strategy report into their developed designs and specifications.
- The contractor must ensure that the developed designs are implemented and that any changes are tracked and agreed as appropriate with the approval authorities.
- The relevant fire safety information must be given to the Responsible Person(s) on completion of the works.
- The Responsible Person(s) must take responsibility for ongoing health and safety within the completed building.

2.7.2 Fire Safety Information

Regulation 38 of the Building Regulations requires that fire safety information must be given to the responsible person at the completion of the works. As a minimum this must include:

- The fire safety strategy.
- Assumptions regarding the management of the building. In this instance this includes a requirement to provide assisted evacuation as appropriate from the evacuation lift lobby within the flexible workspace.
- The evacuation strategy / regime and high level cause and effect.
- Escape routes and muster points.
- Details of compartmentation, cavity barriers, fire doors, fire stopping and opening protectives.
- Smoke detector heads, alarm call points, alarm panels, emergency communication systems, fire safety signage, emergency lighting, fire extinguishers.
- As-built plans showing the above.

2.7.3 Fire Safety Management

The Regulatory Reform (Fire Safety) Order 2005 requires the Responsible Person(s) to take responsibility for ongoing health and safety within the completed building.

It is recommended that the operator considers the recommendations outlined within BS 9999 on the various management factors to be considered as part of maintaining an adequate standard in management.

The standard of fire safety management and the provisions and resources necessary to be upheld throughout operation is subject to risk assessment to be undertaken by the operators. However, it has been assumed that a good practice in management level will be achieved in this development.

Therefore, the adopted management strategy should consider the following as a minimum:

- Development of an evacuation policy, including evacuation of mobility impaired persons.
- Identify appropriate external fire assembly points.
- Ensure fire risk assessments, as required by the Regulatory Reform (Fire Safety) Order, are undertaken, kept up to date and the findings of the risk assessment are implemented or actioned appropriately.
- Manager(s) are empowered to ensure that legislative fire safety requirements are met, and these powers are supported by appropriate resources and funding.

- Work control is developed proactively with clear lines of responsibility, permit systems, logging and audit processes, as well as routine checking and supervision.
- Ensure maintenance regimes for all fire safety features and systems are undertaken and appropriate records are kept.
- Communications to ensure that those involved are informed of sufficient fire safety information. Including the use of alternative formats and contingency for systems failure.
- Dynamic monitoring of fire safety systems and equipment to be functional at all times whilst the facility is in use. Including alternative procedures for times when systems and equipment are unavailable or not fully functional due to maintenance, for example.
- Liaison with the fire authority is proactive, including notification of the fire authority to changes in risk and other key factors.
- Proactive contingency planning, taking into account of a wide range of possible emergency incidents.

2.7.4 Potential Future Redevelopment

Where proposed works are exempt from the Building Regulations they would need to be managed under the Regulatory Reform (Fire Safety) Order 2005. The FSO requires the Responsible Person(s) to assess the impact of all potential changes on the agreed fire strategy and demonstrate that the proposed changes do not increase the risk to occupants, or firefighters.

If the proposed works are classified as 'building work' as defined in Regulation 3 of the Building Regulations, then the works must meet the relevant technical requirements in the Building Regulations at the time, and they must not make other fabric, services and fittings less compliant than they were before.

2.8 Where a Lift Core is Provided, at Least One Lift is an Evacuation Lift

Policy D5(B5) of the London plan requires that safe and dignified emergency evacuation by as independent means as possible is provided for all building users.

Therefore one lift in each core shall be a suitably sized fire evacuation lift, designed in accordance with Section G.2 of BS 9999 for the flexible workspace and the relevant sections of BS EN 81. The fire evacuation lifts shall be located within a protected lobby, providing a safe refuge for occupants to await the lift.

The evacuation lifts will be provided in addition to the firefighting lifts. If the evacuation lift is out of use, the firefighting lift may be used for contingency prior to Fire and Rescue Service arrival and with their approval. This is deemed appropriate given the low number of occupants expected to need to use the lift during the initial stages of an incident.

As noted in Section 2.3, in the event of a fire within their apartment, occupants who require assistance may self-evacuate using the evacuation lifts where necessary.

Within the flexible workspace, which has a simultaneous evacuation, those managing this space will require training to ensure they are able to operate the evacuation lift and assist those evacuating.

Within residential and community areas, the evacuation lift will be programmed to continue to operate in the event of a fire to enable automatic or self-evacuation. The lift is to continue to function as normal, with the occupant calling the lift from the safety of the protected lobby.

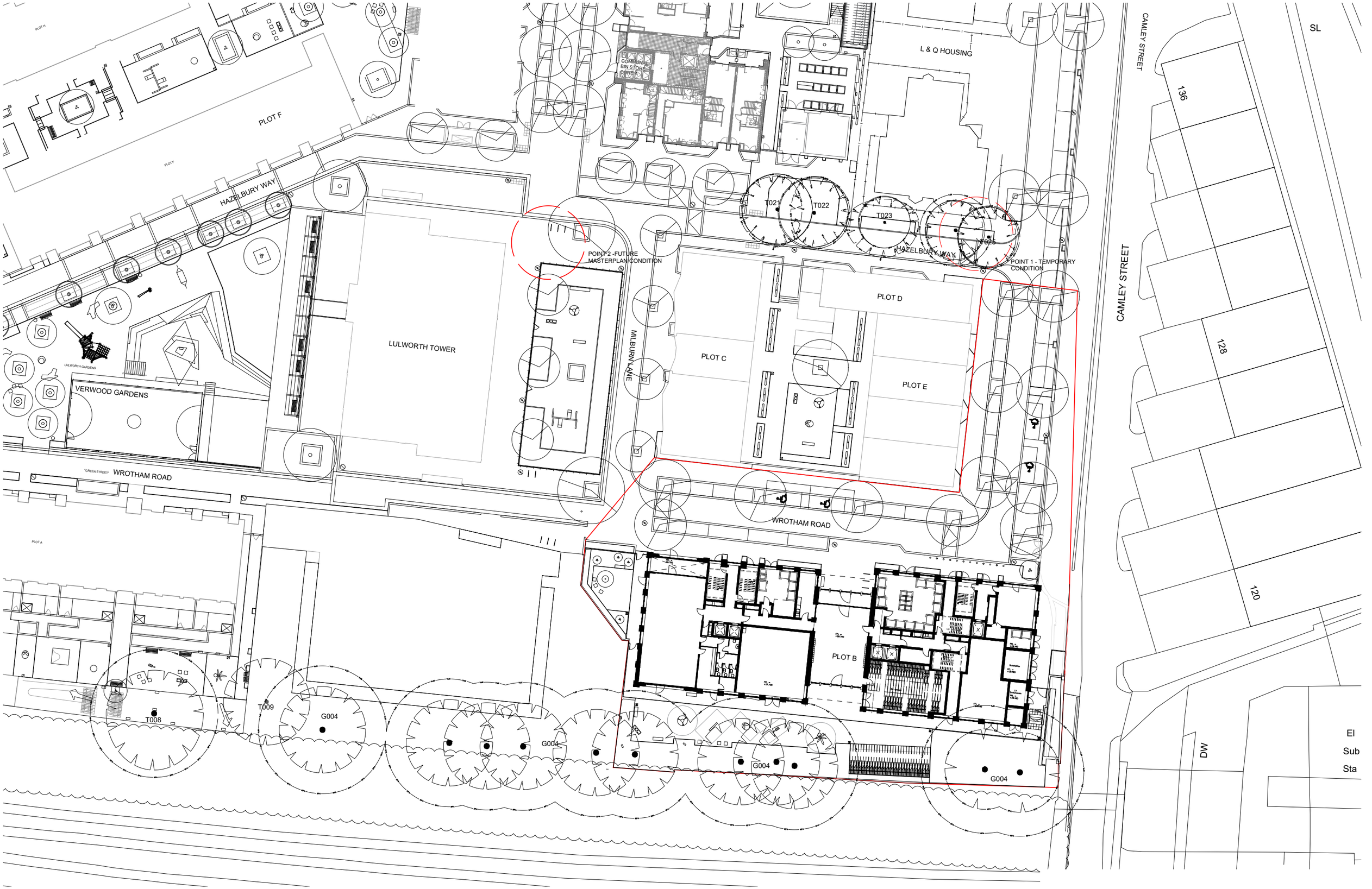
3 Declaration of Compliance

The fire safety design of the proposed development, and the fire safety information contained within this Fire Statement, satisfies the requirements of London Plan Policy D12 and D5(B5).

This Fire Statement has been prepared for the use by and takes into account the particular instructions and requirements of our Client. It is not intended for use by any third party, and Design Fire Consultants Ltd shall not be liable for the reliance on or use of the report by any third party.

Revision	Date	Issue Description	Author	Checked
01	26 May 2022	Updated with comments from planning consultant	Mary Button	Neal Butterworth
				
00	25 May 2022	Fire Statement to support planning application	Mary Button	Neal Butterworth
				

Appendix A – Assembly Points



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SKETCH FOR COMMENT

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Project: AGAR GROVE REGENERATION
Sketch No: AGC377-SK-2A-009
Subject: PHASE 2A Fire Strategy_DRAFT

Date: 24.05.2022
Scale: 1:250@ A1 / 500@ A3
By: CH