



Booth Street

Fire Safety Strategy

For Rhomco

RIBA Stage 2

Revision 01

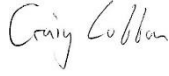
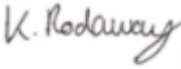
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1. INTRODUCTION

Hydrock have been engaged by Rhomco to provide fire engineering services for the proposed development/refurbishment of Booth Street, Manchester.

1.1 Purpose of Report

The purpose of this report is to outline the fire strategy principles to the design team and to assist in developing the scheme for planning purposes.

1.2 Basis of Report

This Fire Safety Strategy has been developed based on the information and drawings provided by Simpson Haugh and Partners as outlined in Table 1.

Table 1 Information on which the Fire Safety Strategy is based

Description	Drawing No.	Revision	Date
GA Plan - Ground Floor Level	10224-Z0-A-B5D8-G200-PL-00-001	03	13.06.2023
GA Plan - Level 01	10224-Z0-A-B5D8-G200-PL-01-001	03	13.06.2023
GA Plan - Typical Levels 02-06 (Level 02 Shown)	10224-Z0-A-B5D8-G200-PL-02-001	03	13.06.2023
GA Plan - Typical Levels 07	10224-Z0-A-B5D8-G200-PL-07-001	01	13.06.2023
GA Plan – Level 08 (previously Level 10)	10224-Z0-A-B5D8-G200-PL-10-001	00	13.06.2023
GA Plan - Roof Level	10224-Z0-A-B5D8-G200-PL-RF-001	03	13.06.2023
GA Elevation – Proposed – South – Camelford Close	10224-Z0-A-B5D8-G200-EL-ES-001	03	12.06.2023
Site Plan	10224-Z0-A-B5D8-G000-PL-XX-001	03	12.06.2023

1.3 Limitations of Report

1.3.1 Information Provided by Others

The Fire Safety Strategy represents only the best judgement of the consultants involved in its preparation, and is based, in part, on information provided by others. Under no circumstances is liability accepted for the accuracy of such information provided by others.

1.3.2 Detail and Scope of Report

This report provides a high-level overview of the fire safety principles to be followed in the design of the development to assist the design team in progressing the design for planning purposes. Therefore, the level of detail provided in this report is appropriate for this purpose at RIBA Stage 2. It does not include detailed design information which will be developed upon in RIBA Stage 3 and 4 of the design process, with the report to be updated at these stages. Full reference should be made to the relevant design guidance, where appropriate, for further information.

1.3.3 Alternative Methods of Compliance

Where the Fire Safety Strategy proposes alternative methods of compliance, that have been based on accepted codes of practice, to satisfy the functional requirements of Part B (Fire Safety) of Schedule 1 to the Building Regulations 2010 (as amended), they will be subject to the agreement of the approving authorities and local Fire and Rescue Service.

1.3.4 Minimum Requirements

This report outlines the minimum requirements to satisfy the functional requirements of Part B (Fire Safety) of Schedule 1 to the Building Regulation 2010 (as amended). However, whilst these satisfy the statutory imperatives, Hydrock may advise consideration of additional fire safety measures.

1.4 Building Overview

The Gamecock Site is located on Booth Street West (North Elevation) with Boundary Lane located on the West elevation as shown below in Figure 1. There is also an access road (Camelford Close) to the South of the building.

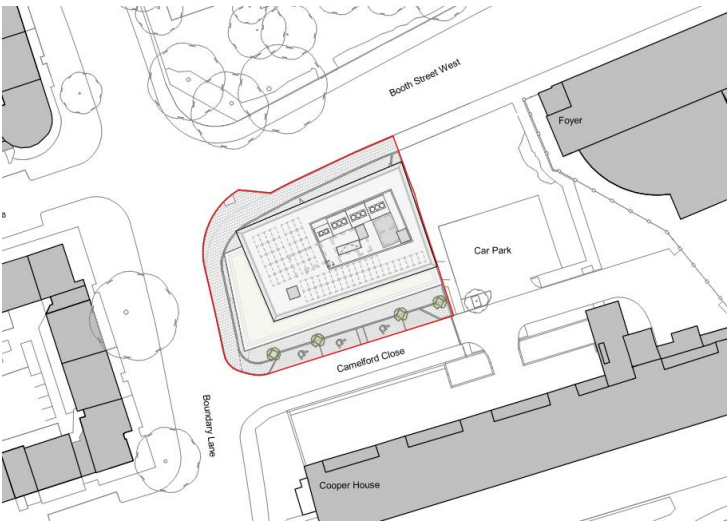


Figure 1 Site plan

1.4.1 Building Height

For the purposes of the Fire Safety Strategy, it should be noted that the top occupied storey of the proposed building is approximately 24.82 m above ground level, as illustrated in Figure 2. This is on the basis that the building is now 9 storeys (Ground + 8 storeys above).

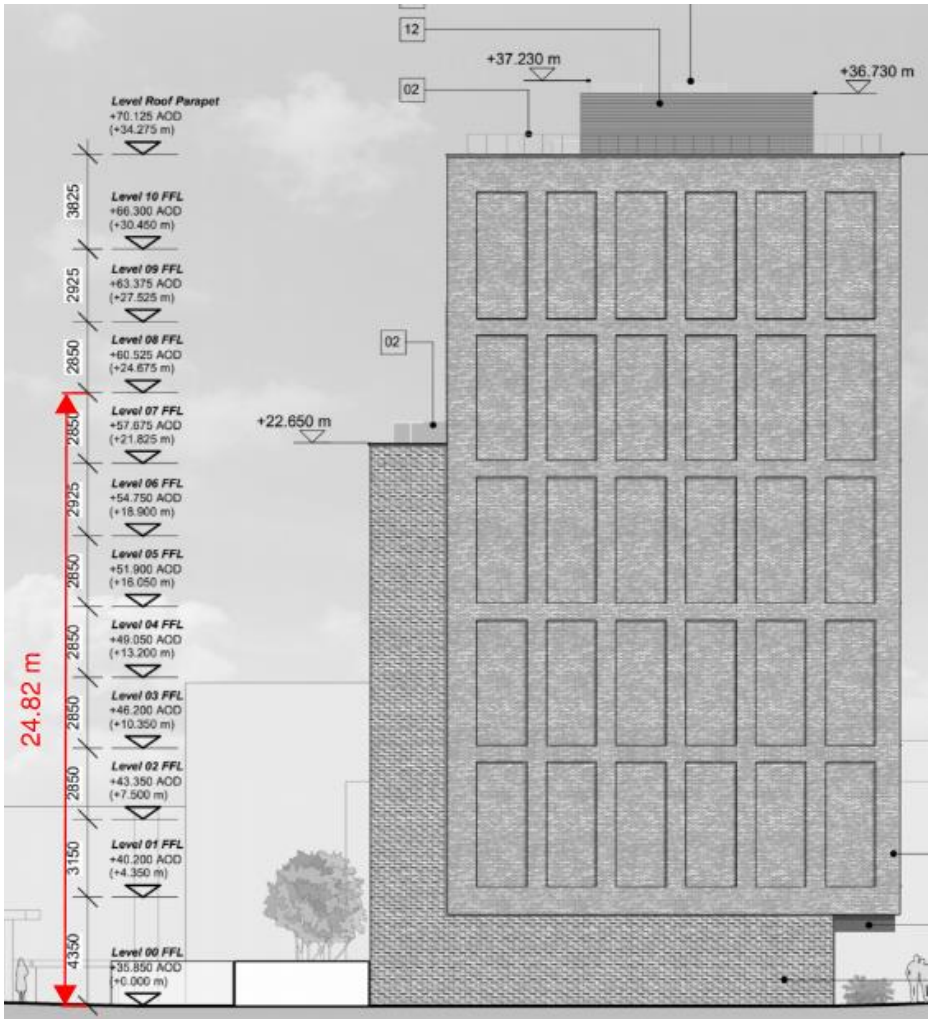


Figure 2 Section illustrating building height

2. LEGISLATION

The following sections provide an outline of the regulations and guidelines on which the Fire Safety Strategy is based.

2.1 The Building Regulations 2010

The building work will be subject to control under the restrictions of the Building Regulations 2010 (as amended). The Building Regulations are concerned with the life safety of persons in and around a building. The development will be designed and constructed to satisfy the functional requirements of Part B (Fire Safety) to Schedule 1 of the Building Regulations 2010 (as amended), which includes the following:

- 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 Service

2.2 Design Guidance Documents

Guidance for the fire precautions will generally follow the recommendations contained within BS9991:2015. Any deviations from these standards are to be provided with justification demonstrating that the functional requirements of the Building Regulations are met; however, full detailed justification is not to be provided at RIBA Stage 2 – this report will highlight the deviations and outline potential solutions. All deviations are subject to approval from the approving authority and local Fire Service. Where no specific provision is mentioned in this document regarding any particular aspect, reference should be made to BS9991:2015. Consideration is also to be given to insurers and other stakeholders requirements.

References to supporting guidance documents and standards are made throughout the report.

The Fire Safety Strategy is to be read in conjunction with the Fire Safety Comments and External Fire Spread Analysis in Appendix A.

2.3 Other Applicable Legislation

2.3.1 The Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order (RRFSO) regulations shall apply to this development and are the landlord's responsibility. The RRFSO came into force in 2006 with the aim of resolving the overlap caused by a number of previous legislations. Therefore, a large number of legislations were rationalised and consolidated

into the RRFSO with the result that it also rationalised the number of enforcement authorities involved in fire safety matters.

The RRFSO applies to all workplaces and other non-domestic areas and premises, requiring the 'Responsible Person' to undertake an assessment of the fire risk in their premises and to keep this assessment under review. It requires that where the 'Responsible Person' does not have the relevant training and experience to undertake such an assessment they must appoint a suitable 'Competent Person' to undertake the Risk Assessment.

The main focus of the Risk Assessment is to ensure that the premises is safe for the occupants to use and that all fire safety measures are adequate and appropriately maintained. In new buildings, the Fire Risk Assessment ensures that the fire safety provisions required under the Building Regulations 2010 are maintained, whereas in existing buildings it ensures that despite any modifications undertaken throughout the building's history, it is still safe for use. It is therefore important that the Fire Safety Strategy for more complex buildings (regardless of age) is clear and well documented.

Fire Safety Act (2021)

The Fire Safety Act 2021 (enacted on 16.05.2022) has amended the applicability of the RRFSO to residential buildings as follows:

- 'Where a building contains two or more sets of domestic premises, the things to which this order applies include—
 - (a) the building's structure and external walls and any common parts;*
 - (b) all doors between the domestic premises and common parts (so far as not falling within sub-paragraph (a)).*
- The reference to external walls includes—
 - (a) doors or windows in those walls, and*
 - (b) anything attached to the exterior of those walls (including balconies).'*

This clarification empowers fire and rescue services to take enforcement action and hold building owners to account if they are not compliant.

2.3.2 Building Safety Act 2022

The Building Safety Bill received Royal Assent on 28.04.2022 to become the Building Safety Act 2022. It creates a Building Safety Regulator responsible for overseeing the safety of all buildings, with a primary focus on leading the implementation of a new regulatory framework for higher-risk buildings. A higher-risk building is defined as a building with 7 or more storeys or is above 18m in height, and either:

- contains at least 2 residential units;
- are care homes and hospitals (during design and construction)

The definition of building height as defined in Approved Document B – Volume 1 (2020) is the “height of top storey measured from upper floor surface of top floor to ground level on lowest side of building.”

Due to the building height and occupancy, this building is subject to the obligations under the Act.

2.3.3 Regulation 38

In conjunction with the RRFSO, Regulation 38 requires that information relating to the fire safety provisions within a building is provided to the ‘Responsible Person’ so that they (or an appointed ‘Competent Person’) can undertake the Fire Risk Assessment required under the RRFSO. It is therefore of paramount importance that the fire safety information for a building that falls under the requirements of the Building Regulations 2010 is kept up to date and a true reflection of the completed building.

This report does not form the Risk Assessment required under the RRFSO, nor does it absolve the client from exercising their duties under Regulation 38. However, the aim of this Fire Safety Strategy is to demonstrate how the project complies with the requirements of the Building Regulations 2010 (as amended) and therefore should form part of the information provided to the ‘Responsible Person’ in order for them to undertake and maintain the Fire Risk Assessment for the project.

2.4 Additional Information on Guidance

In light of the current climate there have been a number of changes to guidance to satisfying the functional requirements of the Building Regulations 2010 (as amended) and the RRFSO.

2.4.1 EWS1 Certificate

The Royal Institution of Chartered Surveyors (RICS), The Building Societies Association (BSA), and UK Finance have introduced an industry-wide valuation designed to help building owners to confirm to valuers and lenders that an external wall system or attachments, such as a balcony, on buildings containing flats has been assessed by a suitable expert.

The standardised External Wall Fire Review process requires a fire safety assessment to be conducted by a suitably qualified and competent professional. This is aimed at delivering assurance for lenders, valuers, residents, buyers and sellers and assist in the valuation of high-rise properties, with actual or potential combustible materials in external wall systems and balconies.

2.4.2 PAS 9980:2022

On 10th of January 2022, the Department for Levelling Up, Housing and Communities (DLUHC) published the Publicly Available Specification (PAS) 9980 with the intent of addressing inconsistencies in the appraisal of risks associated with external wall systems of existing buildings. Where a risk to life safety is identified, or where the risk to life safety is unclear, a Fire Risk Appraisal of External Walls (FRAEW) should be recommended as part of the FRA action plan.

The FRAEW considers the external wall construction in relation to Building Regulation Functional Requirement B4. Hence, the PAS 9980:2022 presents a risk-based methodology which is intended to provide consistency to the appraisal of risks associated with fire spread over the external walls in the FRAEW process. The outcome of the FRAEW is presented as part of the FRA (required under the RRO) to routinely consider the matters relating to fire safety.

RICS, as the author of the EWS1 form, has publicly recommended the use of the PAS 9980:2022 when preparing the EWS1 form. Therefore, the assessment methodology presented in the PAS 9980:2022 is considered to be an industry recognised standard for the purposes of the EWS1 form.

3. MEANS OF WARNING AND ESCAPE

Functional Requirement B1: *The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of fire from the building to a place of safety outside the building capable of being safely and effectively used at all material times.*

3.1 Summary of Provisions

An overview of the design approach being considered and fire safety systems proposed is given in Table 2. Refer to the Fire Safety Comments in Appendix A for further information.

Table 2 Means of Warning and Escape summary

Item	Comments
Evacuation Strategy	The evacuation strategy for the residential units is based on a ‘stay-put’ evacuation strategy where only the occupants within the unit of fire origin are to be alerted/evacuate and all other occupants within the building are to remain in place, unless they are directly affected by smoke/fire. This does not preclude the event that occupants may wish to self-evacuate at any time. Any additional evacuation is at the discretion of the Fire Service if they decide it is necessary to do so during operational procedures.
	It should be noted that for the cluster flats based on their design it is suggested a managed phased evacuation is used. There is a potential of flame spread throughout the cluster accommodation area, therefore it is suggested this area is evacuated together. If a fire was to affect the whole floor plate the ‘stay-put’ strategy may need to be revisited.
Fire Detection and Alarm System	The evacuation strategy for the non-residential areas is based on a single-stage simultaneous evacuation strategy where all occupants within these areas are to be alerted/evacuate immediately on fire detection.
	It is advised that each open-plan flat should be fitted with a Category LD1 fire detection and alarm system in accordance with BS 5839-6:2019. A Category LD1 system incorporates the above, and additionally has smoke detectors located in every room or area other than those with negligible sources of ignition such as toilets and bathrooms. Therefore, smoke detectors are required in each bedroom. This will be for the studio flats and the cluster accommodation.
	A category L5 fire detection and alarm should be fitted in the common area (e.g., corridors, lobbies and stairs). The fire detection and alarm system should be programmed to provide the intended cause and effects (i.e., stay-put evacuation strategy for the studios or the managed phased evacuation for the cluster). The fire detection system within common corridors serving flats is to activate the relevant smoke ventilation systems only (sounders and manual call points are not to be provided within these areas). The fire detection and alarm system in the common residential areas should have been designed, installed and commissioned in accordance with BS5839-1:2017.
	A minimum of a Category L5 + M fire detection and alarm system should be installed within the Amenity spaces designed, installed and commissioned in accordance with BS5839-1:2017.

	<p>Any non-residential areas that open into the stair or common corridors will activate the AOV in the stair.</p> <p>The alarm system ancillary areas should be covered by an L2 to BS 5839-1: 2017. The Community Hub subject to fitout/insurance requirements, unless it is intended for use by occupants of the student areas only, therefore L2 system could be potentially extended to this space.</p> <p>As the building has a top storey over 18m above ground level, an evacuation alert system is to be provided throughout the building, designed and installed in accordance with BS 8629:2019.</p>
Travel Distances	<p>The travel distances using guidance from BS9991:2015 were deemed acceptable as shown in the Appendix A drawings, however the maximum limits for travel distance are outlined below:</p> <ul style="list-style-type: none">For the cluster flats the travel distance is 15 m since sprinkler protection is going to be provided.For the studios flats the internal layout limit is 9 m.For the other flats given this a two stair design the limit is 60 m from the flat to the stairwell.In accordance with table 14 of BS 9991:2015, the limits in travel distances for the bin store, substation, generator room and other similar ancillary accommodation is 9 m in one direction only and 18 m where an escape in more than one direction, in directions 45° or more apart (two means of escape). The maximum travel distance to the nearest storey exit would be 18 m in one direction only and 45 m where escape is possible in more than one direction.As outlined in table F.1 in BS 9999:2017. On the roof the limit for single travel distance to the access hatch or stair is 60 m.
Common Corridor Layout	<p>BS9991:2015 Figure 6 states that where sprinklers are present (see section 8.3) the maximum travel distance from the dwelling entrance and the protected escape stair is 15m when accessed through a ventilated lobby and sprinklers are fitted. Travel in unventilated portions of the corridor is limited to 7.5m. Travel distances are shown in the Fire Strategy Drawings in Appendix A. All travel distances in common corridors are acceptable.</p>
Stair Protection	<p>Since the building measures over 18 m in height, a firefighting shaft is required for one of the stairwells (suggested Stair 1). Therefore, 120-minute protection is required for the stairwell and firefighting lobby as shown in the Appendix A drawings.</p> <p>It should be noted that the arrangement of fire-fighting shaft discharge route should be in accordance with figure 20-part b) of BS9999:2017 or provide alternative layout with figure 20-part a) where the lifts and stair discharge to external (noted there should be no connection to ancillary accommodation from the lift lobby).</p>
Stair Discharge	<p>Both of the stairs have a protected escape route to outside. Two lifts are provided one of the which is to be used as firefighting lift and the other as an evacuation lift. This arrangement has been confirmed in email correspondence and meeting with the client.</p>
Roof Hatch	<p>It is proposed that the firefighting stair is continued up to roof level, with the access hatch and associated handrails directly above the stair.</p>
Ancillary Accommodation	<p>In multi-storey buildings over 11m, in accordance with BS9991:2015 Clause 37 c part 2, notes ancillary accommodation should be separated from common corridors</p>

via a protected lobby. As shown in the Appendix A drawings, there is an occasion where this is not achieved, within the amenity space. Therefore, a lobby is to be provided.

4. INTERNAL FIRE SPREAD (LININGS)

Functional Requirement B2:

- 1. To inhibit the spread of fire within the building, the internal linings shall—
 - a. adequately resist the spread of flame over their surfaces; and
 - b. have, if ignited, either a rate of heat release or a rate of fire growth, which is reasonable in the circumstances.
- 2. In this paragraph “internal linings” means the materials or products used in lining any partition, wall, ceiling or other internal structure.

The internal surface linings are to be in accordance with Table 3 throughout the building. Hydrock recommends BS EN 13501-1: over BS 476 Parts 6 & 7.

Table 3 Internal lining requirements

Location	British Standard Performance Class ^[1]	European Performance Class ^[2]
Non-residential rooms having an area not more than 30m ²	3	D-s3, d2
Residential rooms having an area not more than 4m ²	3	D-s3, d2
All other rooms	1	C-s3, d2
Circulation spaces within dwellings	1	C-s3, d2
Other circulation spaces	0	B-s3, d2

- Notes
- 1. Relates to performance measures in BS476 Parts 6 & 7 criteria
 - 2. Relates to performance determined in accordance with BS EN 13501-1:2018

The surface linings of the walls and ceilings should generally conform to the classifications outlined in Table 3. However, parts of walls in rooms may be of a lower class but not lower than Class 3 (national class) or Class D-s3, d2 (European class) provided that the total of those parts in any one room does not exceed 50% of the floor area of the room (subject to a maximum of 60m² in non-residential areas and 20m² in residential areas).

5. INTERNAL FIRE SPREAD (STRUCTURE)

Functional Requirement B3:

- 1. The building shall be designed and constructed so that, in the event of fire, its stability will be maintained for a reasonable period
- 2. A wall common to two or more buildings shall be designed and constructed so that it adequately resists the spread of fire between those buildings. For the purposes of this sub-paragraph a house in a terrace and a semi-detached house are each to be treated as a separate building.
- 3. Where reasonably necessary to inhibit the spread of fire within the building, measures shall be taken, to an extent appropriate to the size and intended use of the building, comprising either or both of the following—
 - a. sub-division of the building with fire-resisting construction;
 - b. installation of suitable automatic fire suppression systems.
- 4. The building shall be designed and constructed so that the unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited.

5.1 Summary of Provisions

An overview of the design approach being considered and fire safety features proposed is given in Table 4. Refer to the Fire Safety Comments in Appendix A for further information.

Table 4 Internal Fire Spread (Structure) summary

Item	Comments
Elements of Structure	Elements of structure throughout the building are to achieve at least 120 minutes fire resistance, with regard to load-bearing capacity.
Automatic Water Fire Suppression Systems (AWFSS)	<p>As the building height is to be greater than 11m, sprinkler protection is required throughout the building in accordance with BS 9251:2021, the building should be provided with a Category 4 system.</p> <p>Where the non-residential areas requiring sprinkler protection exceed the permitted area limits within Table 4 of BS9251:2021, such areas will require a commercial sprinkler system in accordance with BS EN 12845:2019.</p>
Compartmentation / Fire Resistance	<p>All floors separating residential areas should be designed as compartment floors achieving 120 minutes fire resistance from the underside.</p> <p>Residential apartments (walls) should be separated by 60 minutes, different purpose groups or units such as the community hub should be separated by 120 minutes fire resistance (walls and floors).</p> <p>Refer to the Fire Safety Comments in Appendix A for indicative compartmentation layouts.</p>

Fire-stopping	For information on fire-stopping requirements, refer to Clause 24.4 from BS9991:2015.
Cavity Barriers	For information on cavity barrier requirements, refer to Clause 19.1 from BS9991:2015.

6. EXTERNAL FIRE SPREAD

Functional Requirement B4:

- 1. The external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of the building.
- 2. The roof of the building shall adequately resist the spread of fire over the roof and from one building to another, having regard to the use and position of the building.

6.1 Summary of Provisions

An overview of the design approach being considered and fire safety provisions proposed is given in Table 5. Refer to the Fire Safety Comments in Appendix A for further information.

Table 5 External Fire Spread Provision summary

Item	Comments
External Fire Spread Analysis	External fire spread analysis has been conducted based on the enclosing rectangle method as described in BR187:2014. Refer to the Fire Safety Comments and External Fire Spread Analysis in Appendix A, with a summary of the calculations provided in Table 6.
External Wall Construction	External walls should be constructed using a material that does not support flame spread and therefore endanger people in or around the building. Flame spread over or within an external wall construction should be controlled to avoid creating a route for rapid fire spread bypassing compartment floors or wall. It should also be ensured external walls close to relevant boundaries are not readily ignitable to avoid fire spread between buildings. Where the top storey of a residential building is more than 18m above ground level all materials used in the external wall construction (including attachments) should be Class A2-s1, d0 or Class A1 in accordance with The Building (Amendment) Regulations 2018.
Roofs	For information on performance classifications for roofs, refer to Clause 18.6 and Table 8 from BS9991:2015.

Table 6 External Fire Spread Calculation summary

Elevation	Separation Distance from Boundary (m)	Compartment Size (height x width) ³	Enclosing Rectangle Size (height x width)	Permitted Unprotected Area (% / m ²) ¹
North	12.60 m	3 m x 32.65 m	3 m x 40 m	100 / 120
South	7.85 m	3 m x 34.53 m	3 m x 40 m	100 /120
East	0 m	3 m x 18.64 m	3 m x 21 m	0 / 0
West	8.05 m	3 m x 16.42 m	3 m x 18 m	100/54

Notes

- 1. All other areas to achieve a fire resistance period of 120 minutes for integrity and 15 minutes for insulation, with an external surface classification of at least A2-s1,d0.
- 2. Where within 1.0m of the boundary, the only unprotected openings permitted are those within Figure 21 of BS9991:2015, with all other areas to achieve 120 minutes for integrity and insulation, and external surfaces to be non-combustible.
- 3. It should be noted that this based on the worst case of the full compartment being the radiating panel as noted in BR 187:2014.

7. FACILITIES FOR FIREFIGHTING

Functional Requirement B5:

- 1. The building shall be designed and constructed so as to provide reasonable facilities to assist firefighters in the protection of life.
- 2. Reasonable provision shall be made within the site of the building to enable fire appliances to gain access to the building.

7.1 Summary of Provisions

An overview of the design approach being considered and fire safety systems proposed is given in Table 7. Refer to the Fire Safety Comments in Appendix A for further information.

Table 7 Facilities for Firefighting summary

Item	Comments
Fire Service Vehicle Access	Fire service access can be provided to the building from Boundary Lane onto Camelford close where the two entrances for both the stairwells can be accessed (With stair 1 being the dedicated for the firefighting shaft). Both of the entrances were measured to be within 18 m of suitable access point for the fire service from the fire tender as shown in the Appendix A drawings. The location of the dry riser is to be confirmed.
Firefighting Provisions	<p>The development is over 18 m in height therefore a firefighting shaft is required as shown in the Appendix A drawings. It has been measured that both stairs if provided with a dry riser can achieve a hose laying length within 60 m to any point on the floor. Therefore, only one firefighting shaft is required. It is suggested Stair 1 is the dedicated firefighting stair as there is the provision of the lifts already and can be accessed within 18 m from the ‘Keep Clear’ zone located at the front entrance.</p> <p>Despite this both stairs will need to be within 120-minute compartmentation as they breach the compartment floors.</p>
Fire Hydrants	In accordance with BS9991:2015 it should be ensured a fire hydrant is provided within 90m of the dry riser inlets serving the development.
Fire Mains	<p>A dry riser is required within the firefighting shaft on every floor including Ground. As noted above both the stairs would be within 60 m (with sprinklers in accordance with BS9991:2015) so only one fire main is required in either of the stairs.</p> <p>However, Stair 1 is recommended as this would be closer to the keep clear parking space for the fire tender. Which would help ensure that a fire tender vehicle can get within 18 m of the dry main at all times. Stair 1 is also proposed as the designated firefighting shaft and provided with the firefighter lift.</p>
Firefighting lift	<p>A firefighting lift installation includes the lift car, lift installation within the well and the lift machinery spaces, together with the lift control system and the Fire and Rescue Service communications system and should conform to BS EN 81-72.</p> <p>Given a firefighting lift is required this will require a secondary power supply. As per BS9991:205, the lift should be within 7.5m of the entrance to the firefighting shaft.</p>

Firefighting Shaft arrangement	<p>The firefighting shaft is to be provided with the following:</p> <ul style="list-style-type: none">• Firefighting stair (with a minimum effective width of 1100mm);• Firefighting lift designed, installed, and commissioned in accordance with BS81-72:2015;• Dry rising main accessible from the firefighting stair enclosure;• Firefighting stairs are to be accessed via a ventilated residential common corridor / stair lobby which is considered as the firefighting lobby. <p>In accordance with BS9991:2015 firefighting shafts are to be accessed at ground level either direct to external or via a protected lobby which is lobby protected from any adjacent accommodation. Therefore, in this arrangement, a protected lobby is provided which in itself is protected from any adjacent accommodation.</p> <p>It should be noted that only services relating to the firefighting shaft should be contained within the firefighting shaft. Upper levels should be as per figure 35 of BS9991 for residential firefighting shaft.</p>
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8. FIRE PROTECTION SYSTEMS

This section describes the fire protection systems to be provided with the development in order to ensure the safety of occupants and Fire Service personnel in the event of a fire.

An overview of the design approach being considered and fire safety systems proposed is given in Table 8. Refer to the Fire Safety Comments in Appendix A for further information.

Table 8 Fire Protection Systems summary

Item	Comments
Smoke Ventilation	Common corridors: <ul style="list-style-type: none">A 1.5m2 (free area) natural smoke shaft is to be provided communicating the common corridor / stair lobby via a 1.0m2 (free area) automatic opening vent at each level. The natural smoke shaft is to have a minimum dimension of 0.85m;The natural smoke shaft is to extend at least 0.5m above any construction within a 2m radius of the smoke shaft;On detection of smoke within a residential common corridor / stair lobby, the vent into the smoke shaft at the level of detection is to open, vents to the smoke shaft at all other levels are to be closed and the vent at the head of the stair is to open;The smoke shafts should be located at the remote end of the corridor away from the staircase.The smoke shaft should be closed at the base.
	It is to be noted that level 01-06 is currently provided with a natural smoke shaft and a 1.5m2 AOV direct to external. In the draft update to BS 9991:2022 guidance has been updated that only mechanical ventilation systems or pressurisation systems should be provided in buildings over 30m. The building is now below 30m and the design is deemed acceptable, however, Hydrock advises that the 1.5m2 AOV window is automatic and not a manual vent.
	Protected stairs: <ul style="list-style-type: none">A 1.0m2 (free area) automatic opening vent is to be provided at the head of the stair;The automatic opening vent at the head of the stairs should also open on detection of smoke within the stair enclosure;No services other than those relating to the smoke shaft should contained within the smoke shafts;As stated in 14.2.1.1 of BS9991:2015 in relation to smoke control for the firefighting shaft, it should be noted that only natural smoke shafts, mechanical smoke ventilation systems or pressure differential systems are suitable for buildings over 30 m in height.
	Lobbies to the Ancillary Accommodation (in multi stair buildings): <ul style="list-style-type: none">Within clause 37 of BS9991:2015 ancillary accommodation should be separated from the stair or stair discharge route via a protected ventilated

	lobby. The lobbies should either be protected by 1m ² permanent ventilation. Or 0.4m ² ventilation if a sprinkler system designed in accordance with BS 9251:2021 is provided.
Automatic Water Fire Suppression Systems (AWFSS)	<p>As the building height is to be greater than 11m, sprinkler protection is required throughout the building in accordance with BS9251:2021.</p> <p>Where the non-residential areas requiring sprinkler protection exceed the permitted area limits within Table 4 of BS9251:2021, such areas will require a commercial sprinkler system in accordance with BSEN12845:2019.</p> <p>The system should extend to cover all of the flats as well as the amenity areas with cooking facilities.</p> <p>A Category 4 system should be provided in accordance with BS9521:2021.</p>
Secondary Power Supply	<p>A secondary power supply is required for the firefighting lift/sprinklers and is to meet the following recommendations;</p> <ul style="list-style-type: none">The secondary power supply is to have sufficient capacity to maintain in operation for at least 3 hours;Cables supplying current to the life safety installations should be installed in accordance with BS 7671 and the manufacturer’s instructions. The cables should have an inherently high resistance to fire and be protected where necessary against mechanical damage. Cables, switchgear, and other equipment transmitting the secondary power supply should be separate from those of the primary supply, or be physically protected so that a breakdown, or any cause of breakdown, on one supply would not lead to a simultaneous failure of the other supply;The primary and secondary power supply cables should be terminated in a changeover device located within the plant room(s) housing the life safety and fire protection equipment, or in the case of a fire fighters lift, within the fire-fighting shaft;The changeover device should automatically affect the transition from the primary to the secondary power supply if the primary supply to the plant fails. <p>Examples of Secondary Power are provided within Clause 15 of BS9991:2015.</p>

APPENDIX A – FIRE SAFETY COMMENTS AND EXTERNAL FIRE SPREAD ANALYSIS

Note, non-residential ancillary areas exceeding the figures quoted in BS 9521:2021 table 4, then it is suggested a system designed in accordance with BS EN 12845 should be specified in this area. This is to be discussed and confirmed with the appointed M&E engineering and sprinkler specialist.

Community Hub, considered as a separate unit, to be separated from the remainder of the building by 120 minute fire resisting walls and floors.

Anticipated BS 9991 update requirement: Enclosure requirements of switch rooms in buildings above 30m has increased to 120 mins. Minimum requirement currently is 60 minutes

Given each level is to be provided with disabled refuges (within each stair) upon Building control request, a designated evacuation lift is not required under building regulations. However, it is advised that the development proposals should be designed to incorporate safe and dignified emergency evacuation for all users. Given the height of the building and the fact that numerous occupants on the floor plate may have difficulties evacuating the evacuation lift is recommended. This recommendation is likely to be incorporated in updated guidance and would future proof the building. It is currently proposed to provide one evacuation lift within the building.

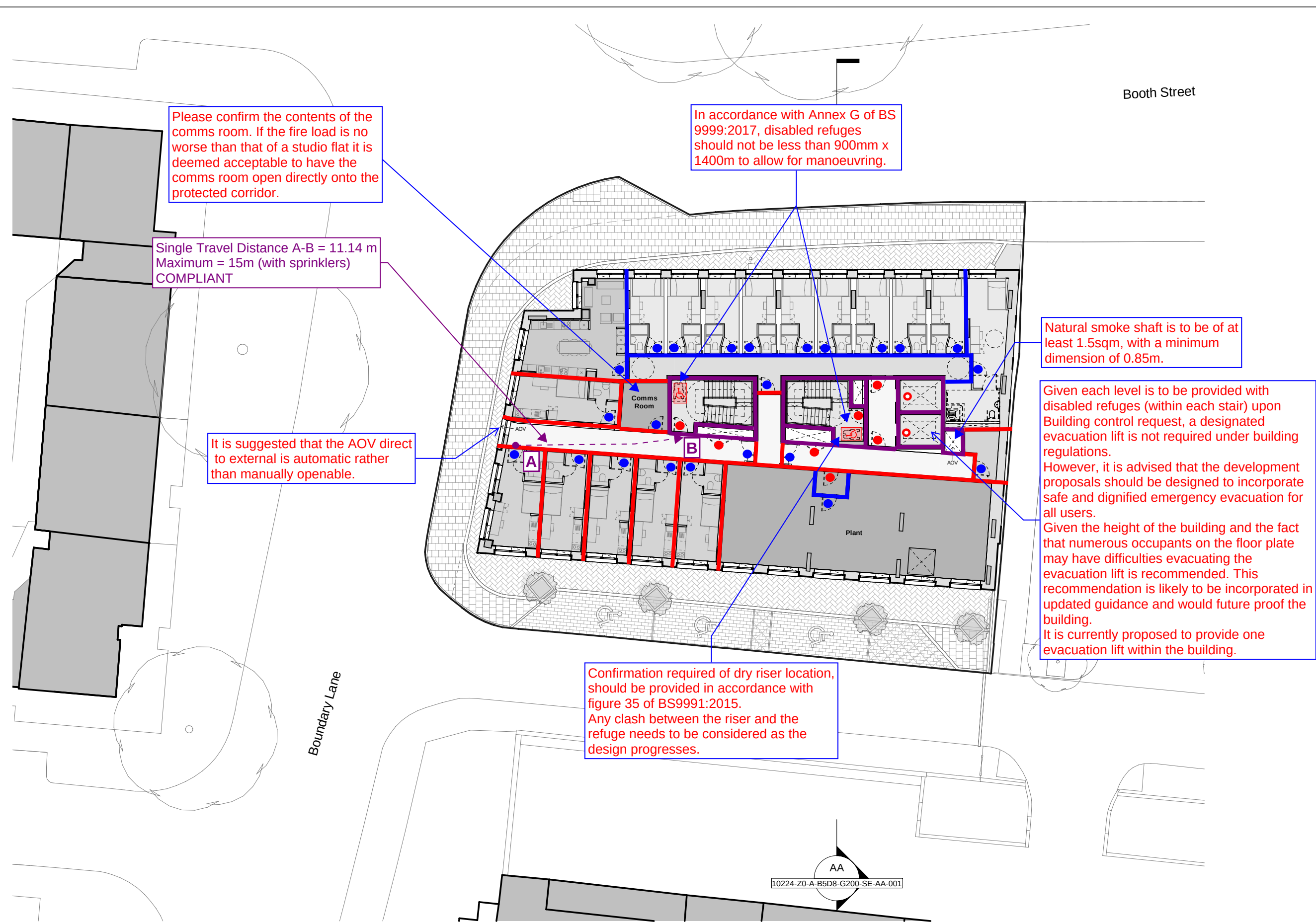
In accordance with BS9991:2015, if a stair is providing access to ancillary accommodation, there should be a ventilated protected lobby or ventilated protected corridor at that level, the lobby ventilation should provide at least 0.4m2 permanent ventilation (or a suitable mechanical equivalent). Circulation space connection to stair discharge route.

This door is not providing additional protection and therefore could be removed.

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 4. Fire Strategy Drawings will require agreement with the local approving authorities and insurers.

- Legend:
- FD30 fire door
 - FD60 fire door
 - FD90 fire door
 - FD120 fire door
 - FD30S fire door
 - FD60S fire door
 - FD90S fire door
 - FD120S fire door
 - 30 minute fire rated construction
 - 60 minute fire rated construction
 - 90 minute fire rated construction
 - 120 minute fire rated construction
 - Single travel distance
 - Total travel distance

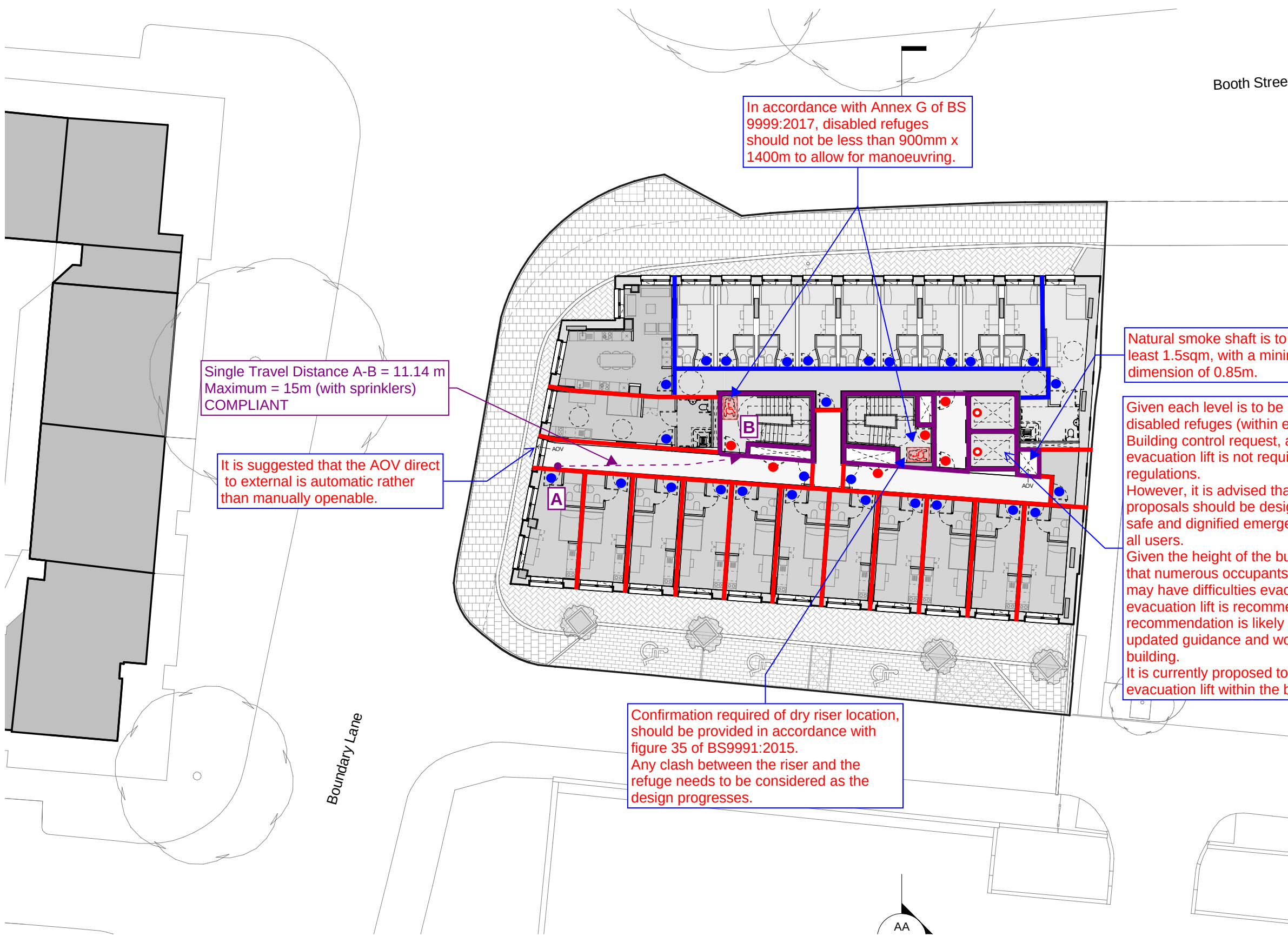
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00	18.08.23	Stage 2 For Comment		DH	CL
Rev	Date	Description		By	Ckd
Architect:					
Simpson Haugh					
<div><div>Hydrock</div><div>Hydrock Consultants Ltd Merchant House Wapping Road Bristol BS1 4RW T +44 (0)117 948 5225 info@hydrock.com www.hydrock.com</div></div>					
Client :					
Rhomco					
Project Title:					
Booth Street					
Drawing Title:					
Fire Strategy Drawing Ground Floor					
Drawing Status:					
Stage 2 For Comment					
Hydrock Job No:					
17051					
Drawn	Checked	Scale @	A3	Date	Issue Date
DH	CL	1:250		13.06.23	01.09.23
Drawing Number:					Revision:
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- Legend:
- FD30 fire door
 - FD60 fire door
 - FD90 fire door
 - FD120 fire door
 - FD30S fire door
 - FD60S fire door
 - FD90S fire door
 - FD120S fire door
 - 30 minute fire rated construction
 - 60 minute fire rated construction
 - 90 minute fire rated construction
 - 120 minute fire rated construction
 - Single travel distance
 - Total travel distance

01	01.09.23	Stage 2		KR	KR
00	18.08.23	Stage 2 For Comment		DH	CL
Rev	Date	Description	By	Ckd	
Architect:					
Simpson Haugh					
Client:					
Rhomco					
Project Title:					
Booth Street					
Drawing Title:					
Fire Strategy Drawing First Floor					
Drawing Status:					
Stage 2 For Comment					
Hydrock Job No:					
17051					
Drawn	Checked	Scale @ A3	Date	Issue Date	
DH	CL	1:250	13.06.23	01.09.23	
Drawing Number:				Revision:	
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Single Travel Distance A-B = 11.14 m
Maximum = 15m (with sprinklers)
COMPLIANT

It is suggested that the AOV direct
to external is automatic rather
than manually openable.

In accordance with Annex G of BS
9999:2017, disabled refuges
should not be less than 900mm x
1400m to allow for manoeuvring.

Natural smoke shaft is to be of at
least 1.5sqm, with a minimum
dimension of 0.85m.

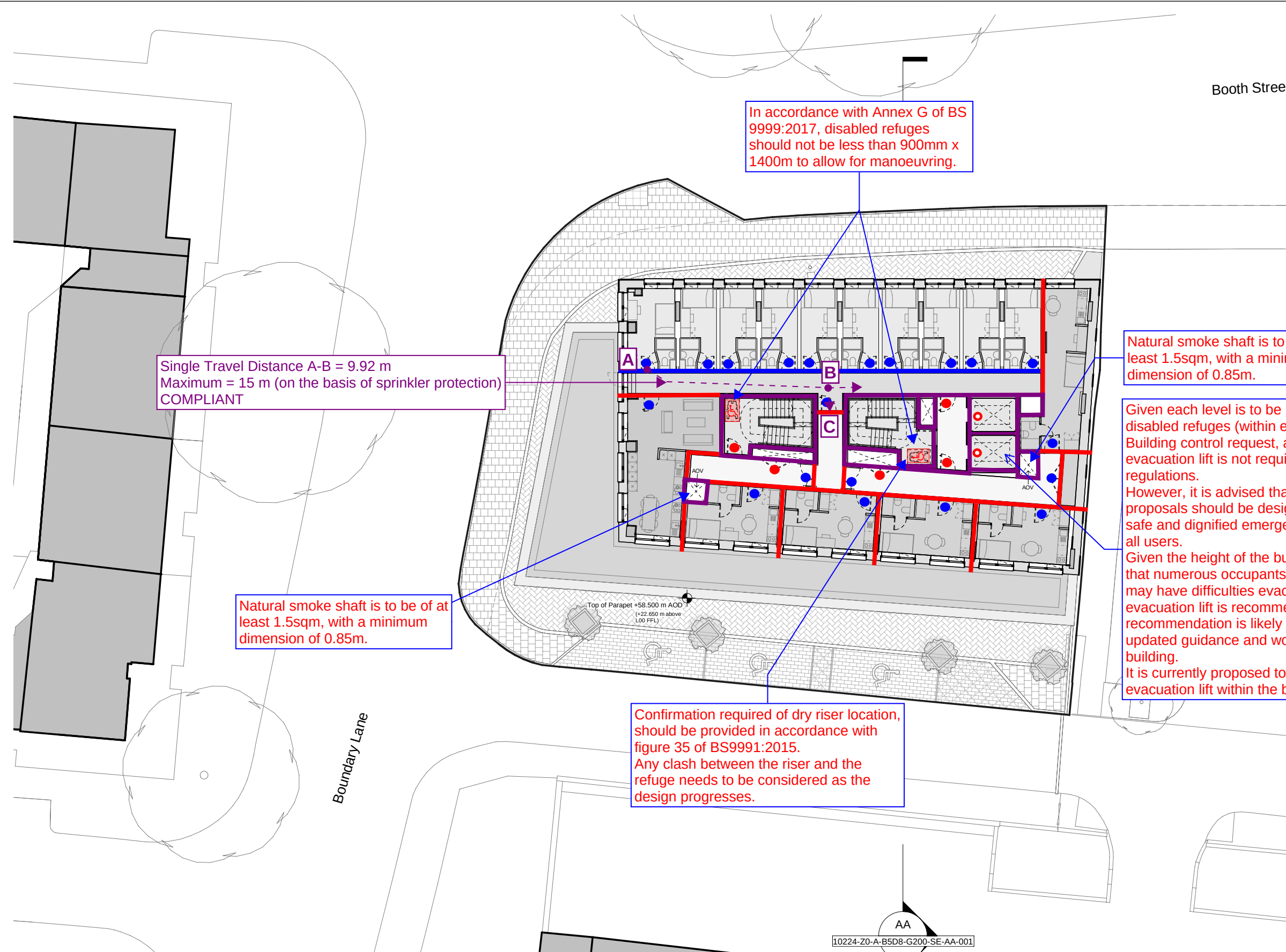
Given each level is to be provided with
disabled refuges (within each stair) upon
Building control request, a designated
evacuation lift is not required under building
regulations.
However, it is advised that the development
proposals should be designed to incorporate
safe and dignified emergency evacuation for
all users.
Given the height of the building and the fact
that numerous occupants on the floor plate
may have difficulties evacuating the
evacuation lift is recommended. This
recommendation is likely to be incorporated in
updated guidance and would future proof the
building.
It is currently proposed to provide one
evacuation lift within the building.

Confirmation required of dry riser location,
should be provided in accordance with
figure 35 of BS9991:2015.
Any clash between the riser and the
refuge needs to be considered as the
design progresses.

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 - FD90 fire door
 - FD120 fire door
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 - FD60S fire door
 - FD90S fire door
 - FD120S fire door
 - 30 minute fire rated construction
 - 60 minute fire rated construction
 - 90 minute fire rated construction
 - 120 minute fire rated construction
 - Single travel distance
 - Total travel distance

01	01.09.23	Stage 2		KR	KR
00	18.08.23	Stage 2 For Comment		DH	CL
Rev	Date	Description		By	Ckd
Architect :					
Simpson Haugh					
<div>Hydrock Consultants Ltd Merchant House Wapping Road Bristol BS1 4RW T +44 (0)117 945 9225 info@hydrock.com www.hydrock.com</div>					
Client :					
Rhomco					
Project Title:					
Booth Street					
Drawing Title:					
Fire Strategy Drawing Typical Plan Type 01 - Level 02 to 06					
Drawing Status:					
Stage 2 For Comment					
Hydrock Job No:					
17051					
Drawn	Checked	Scale @	A3	Date	Issue Date
DH	CL	1:250		13.06.23	01.09.23
Drawing Number:					Revision:
-					01



Single Travel Distance A-B = 9.92 m
Maximum = 15 m (on the basis of sprinkler protection)
COMPLIANT

Natural smoke shaft is to be of at least 1.5sqm, with a minimum dimension of 0.85m.

Confirmation required of dry riser location, should be provided in accordance with figure 35 of BS9991:2015. Any clash between the riser and the refuge needs to be considered as the design progresses.

In accordance with Annex G of BS 9999:2017, disabled refuges should not be less than 900mm x 1400m to allow for manoeuvring.

Natural smoke shaft is to be of at least 1.5sqm, with a minimum dimension of 0.85m.

Given each level is to be provided with disabled refuges (within each stair) upon Building control request, a designated evacuation lift is not required under building regulations. However, it is advised that the development proposals should be designed to incorporate safe and dignified emergency evacuation for all users. Given the height of the building and the fact that numerous occupants on the floor plate may have difficulties evacuating the evacuation lift is recommended. This recommendation is likely to be incorporated in updated guidance and would future proof the building. It is currently proposed to provide one evacuation lift within the building.

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- Legend:
- FD30 fire door
 - FD60 fire door
 - FD90 fire door
 - FD120 fire door
 - FD30S fire door
 - FD60S fire door
 - FD90S fire door
 - FD120S fire door
 - 30 minute fire rated construction
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 - Single travel distance
 - Total travel distance

Rev	Date	Description	By	Ckd
01	01.09.23	Stage 2	KR	KR
00	18.08.23	Stage 2 For Comment	DH	CL

Architect :
Simpson Haugh

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Merchant House
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www.hydrock.com

Client :
Rhomco

Project Title:
Booth Street

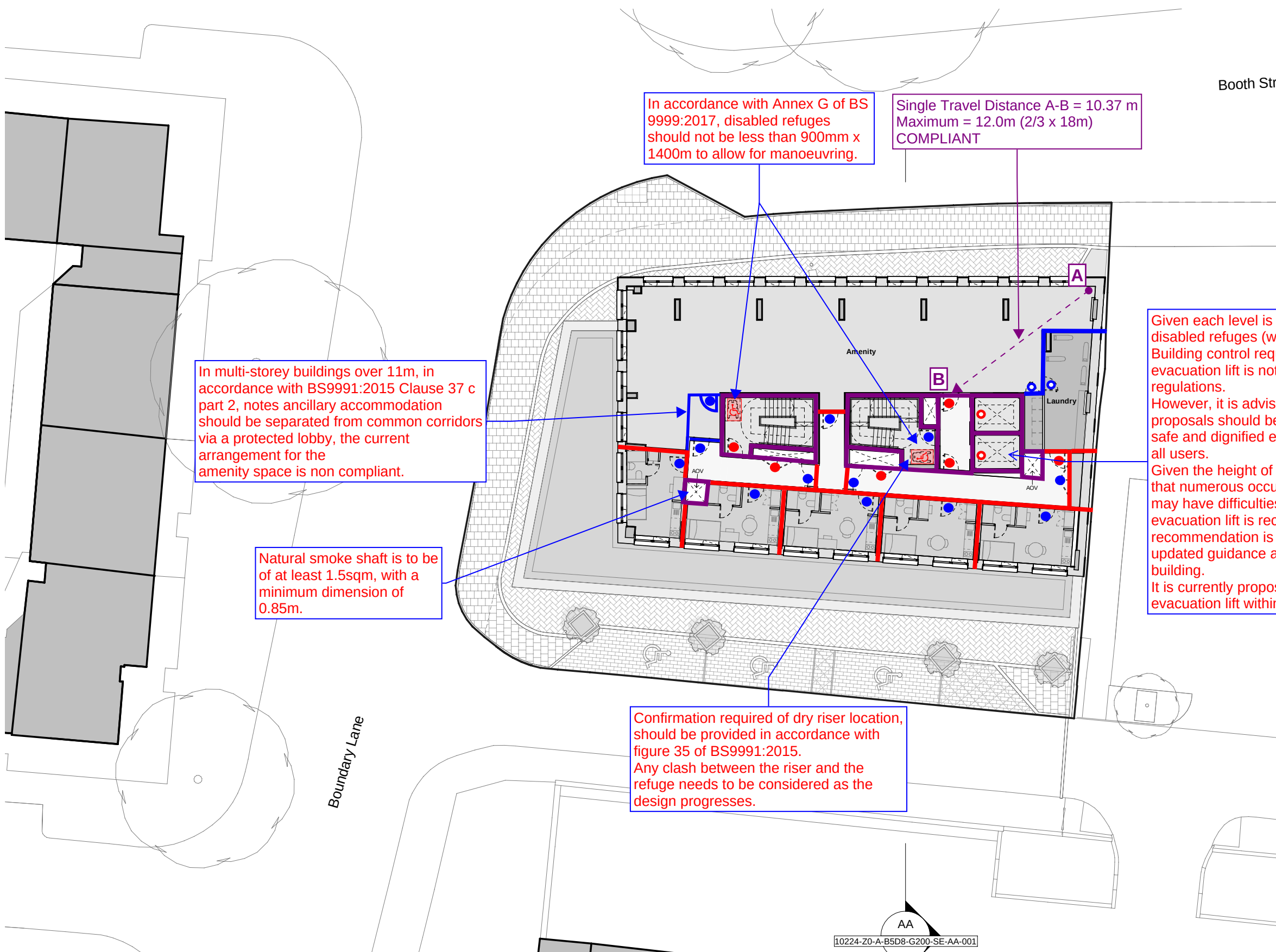
Drawing Title:
**Fire Strategy Drawing
Typical Plan Type 02 - Level 07**

Drawing Status:
Stage 2 For Comment

Hydrock Job No:
17051

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DH	CL	1:250		13.06.23	01.09.23

Drawing Number:	Revision:
-	01



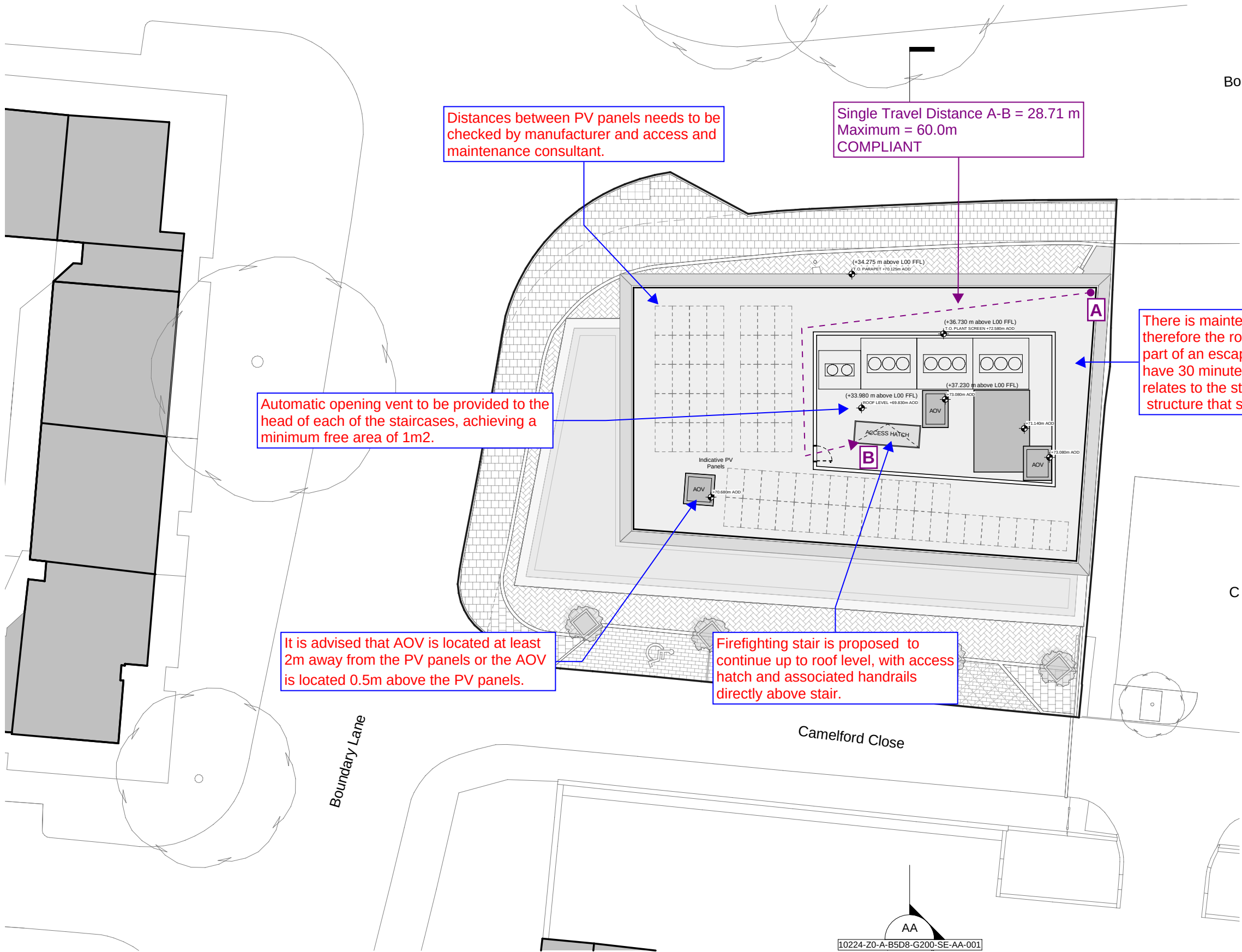
- Notes:**
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Legend:

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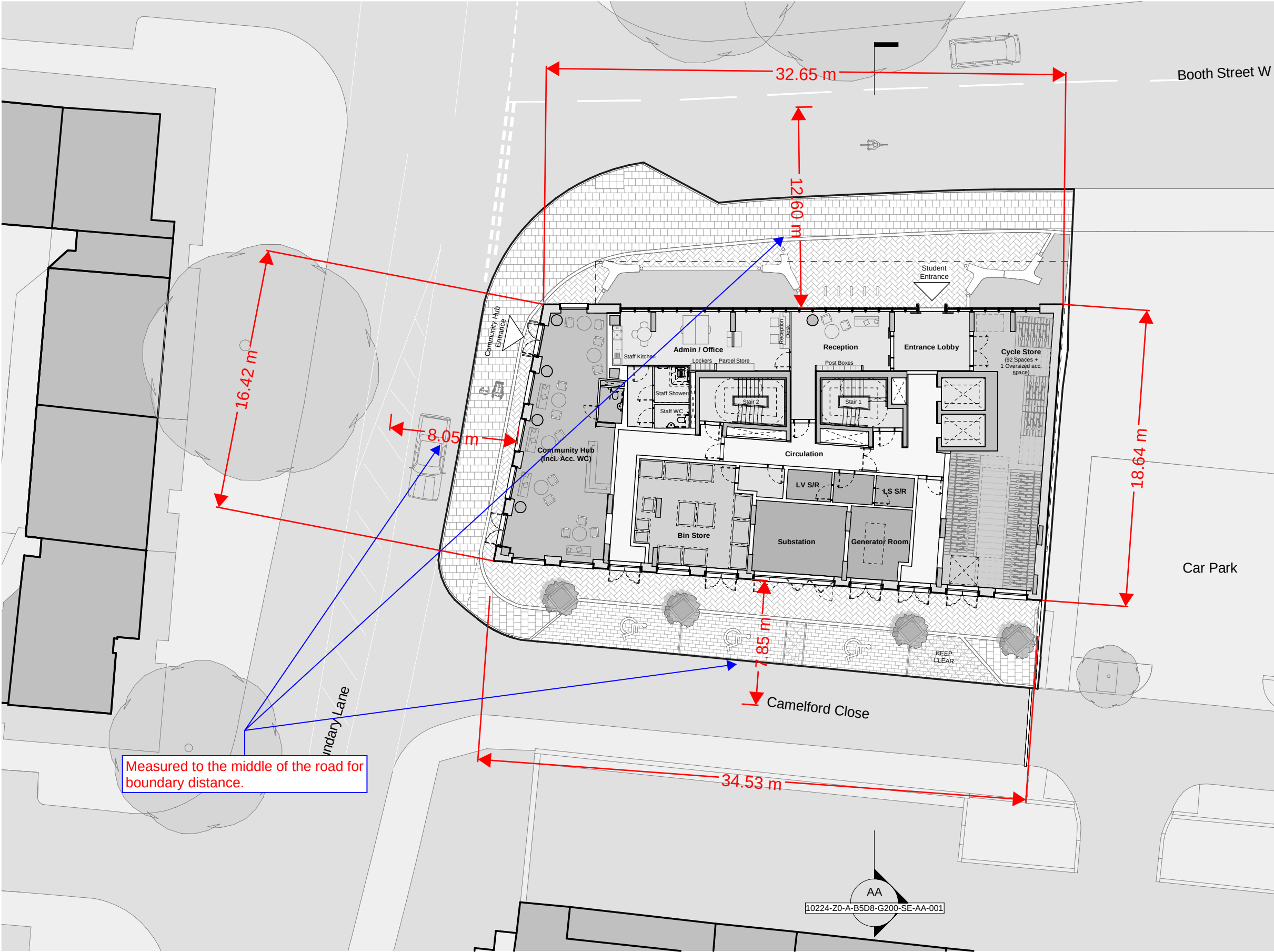
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Rev	Date	Description		By	Ckd
Architect :					
Simpson Haugh					
<div><div>Hydrock</div><div>Hydrock Consultants Ltd Merchant House Wapping Road Bristol BS3 4RW T +44 (0)117 945 9225 info@hydrock.com www.hydrock.com</div></div>					
Client :					
Rhomco					
Project Title:					
Booth Street					
Drawing Title:					
Fire Strategy Drawing GA Plan- Proposed - Level 08					
Drawing Status:					
Stage 2 For Comment					
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17051					
Drawn	Checked	Scale @	Date	Issue Date	
DH	CL	A3	1:250	13.06.23	01.09.23
Drawing Number:					Revision:
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 - FD90S fire door
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 - 60 minute fire rated construction
 - 90 minute fire rated construction
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 - Total travel distance

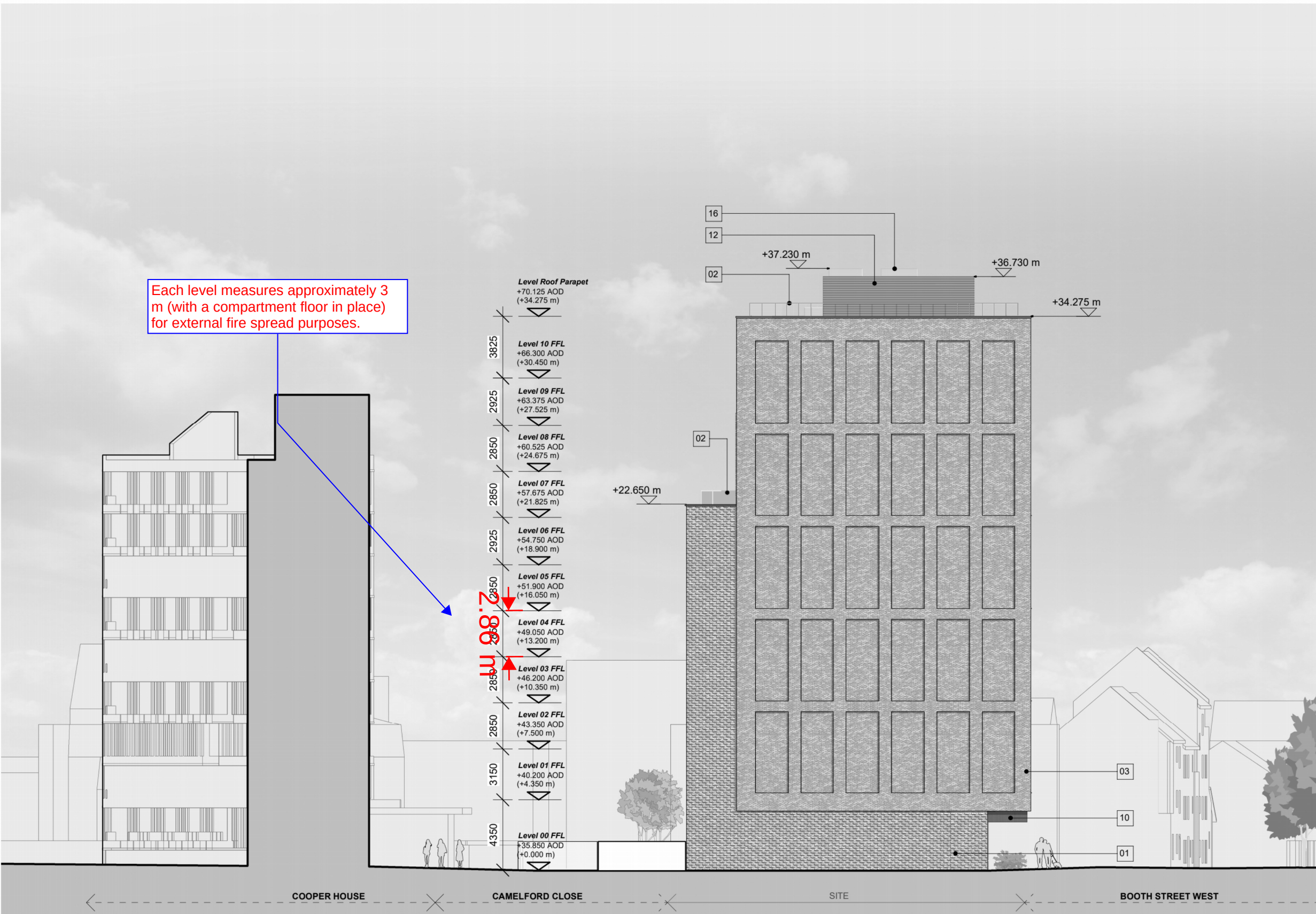
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00	18.08.23	Stage 2 For Comment	DH	CL
Rev	Date	Description	By	Ckd
Architect:				
Simpson Haugh				
<div><div>Hydrock</div><div>Hydrock Consultants Ltd Merchant House Wapping Road Bristol BS1 4RW T +44 (0)117 945 9225 bristol@hydrock.com www.hydrock.com</div></div>				
Client :				
Curlew Alternatives Eighth Property LP				
Project Title:				
Booth Street				
Drawing Title:				
Fire Strategy Drawing Roof Level				
Drawing Status:				
Stage 2 For Comment				
Hydrock Job No:				
17051				
Drawn	Checked	Scale @	Date	Issue Date
DH	CL	1:250	13.06.23	01.09.23
Drawing Number:				Revision:
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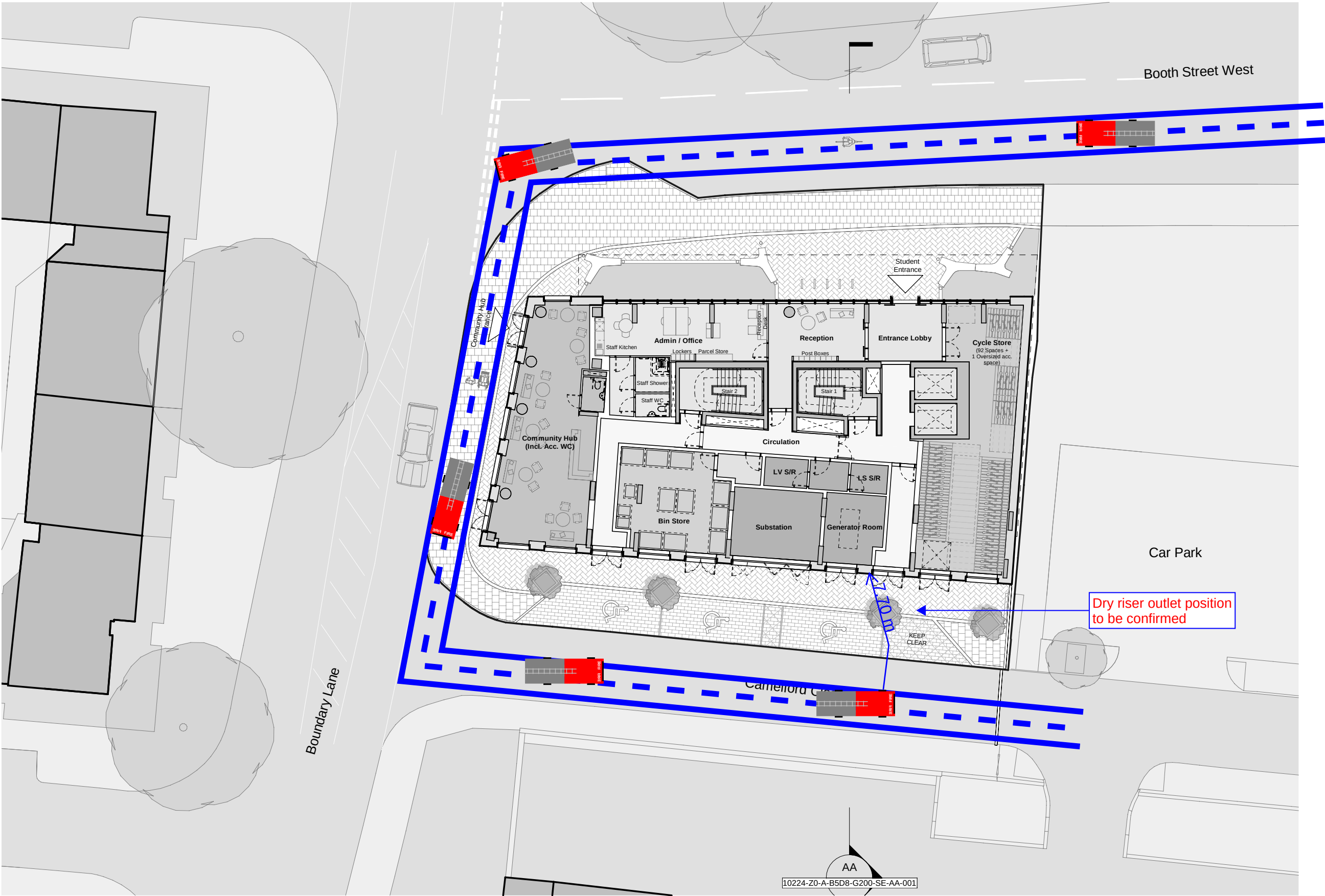
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Rev	Date	Description		By	Ckd
Architect :					
Simpson Hough					
<div><div>Hydrock</div><div>Hydrock Consultants Ltd Merchant House Wapping Road Bristol BS1 4RW T +44 (0)117 945 9225 bristolcentral@hydrock.com www.hydrock.com</div></div>					
Client :					
Rhomco					
Project Title:					
Booth Street					
Drawing Title:					
Fire Strategy Drawing External Fire Spread Measurements					
Drawing Status:					
Stage 2 For Comment					
Hydrock Job No:					
17051					
Drawn	Checked	Scale @	A3	Date	Issue Date
DH	CL	1:250		13.06.23	01.09.23
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-					01

Each level measures approximately 3 m (with a compartment floor in place) for external fire spread purposes.



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00	18.08.23	Stage 2 For Comment		DH	CL
Rev	Date	Description		By	Ckd
Architect :					
Simpson Haugh					
Hydrock					
Hydrock Consultants Ltd Merchant House Wapping Road Bristol BS1 4RW T +44 (0)117 945 9225 helen@hydrock.com www.hydrock.com					
Client :					
Rhomco					
Project Title:					
Booth Street					
Drawing Title:					
Fire Strategy Drawing External Fire Spread Measurements					
Drawing Status:					
Stage 2 For Comment					
Hydrock Job No:					
17051					
Drawn	Checked	Scale @ A3	Date	Issue Date	
DH	CL	1:250	13.06.23	01.09.23	
Drawing Number:					Revision:
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00	18.08.23	Stage 2 For Comment		DH	CL
Rev	Date	Description		By	Ckd
Architect :					
Simpson Haugh					
Hydrock					
Hydrock Consultants Ltd Merchant House Wapping Road Bristol BS1 4RW T +44 (0)117 945 9225 www.hydrock.com					
Client :					
Rhomco					
Project Title:					
Booth Street					
Drawing Title:					
Fire Strategy Drawing Fire Service Access					
Drawing Status:					
Stage 2 For Comment					
Hydrock Job No:					
17051					
Drawn	Checked	Scale @ A3	Date	Issue Date	
DH	CL	1:250	13.06.23	01.09.23	
Drawing Number:				Revision:	
-				01	