



85 Rochdale Road Phase 2, Manchester Outline Fire Strategy Report

Prepared for	McGoff Group Projects Ltd.
Project Location	Manchester
Prepared by	OFR Consultants Limited Sevendale House, Lever Street, Manchester M1 1JA
Project No	MA24154
Revision	R05
Date	26/03/2026

© OFR Consultants Limited. All rights reserved.
OFR Consultants Limited has prepared this document for the sole use of the Client and for a specific purpose, each as expressly stated in the document. No other party should rely on this document without the prior written consent of OFR Consultants. OFR Consultants undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. This document has been prepared based on the Client’s description of its requirements and OFR Consultants experience, having regard to assumptions that OFR Consultants can reasonably be expected to make in accordance with sound professional principles. OFR Consultants accepts no liability for information provided by the Client and other third parties used to prepare this document or as the basis of the analysis. Subject to the above conditions, this document may be transmitted, reproduced or disseminated only in its entirety.

Quality Management

Revision	Date	Comment	Author	QA & Technical Review	Approver
R00	24/10/2025	First Issue for the design team comments	YX	OS	RR
R01	04/11/2025	Second Issue, incorporating WSP's comments	YX	OS	--
R02	27/11/2025	Third Issue, incorporating architect's updates	YX	OS	RR
R03	08/12/2025	Fourth Issue, incorporating WSP's second set of comments	YX	OS	RR
R04	13/03/2026	Fifth Issue, incorporating GA plans updates	YX	OS	RR
R05	26/03/2026	Sixth Issue, incorporating updated GA plans, and comments from WSP and architect	YX	OS	RR

CONTENTS

1. Executive Summary.....	6	6. Internal Fire Spread (Structure)	15
2. Introduction	7	6.1 Structural Fire Resistance.....	15
2.1 Appointment.....	7	6.2 Compartmentation and Fire-Resisting Construction	15
2.2 Development Description	7	6.2.1 Overview.....	15
2.3 Applicable Legislation	7	6.2.2 Compartment Floors.....	15
2.3.1 The Building Regulations 2010 (as amended)	7	6.2.3 Compartment Walls.....	15
2.3.2 The Regulatory Reform (Fire Safety) Order 2005	7	6.2.4 Fire Doors.....	15
2.3.3 The Construction (Design and Management) Regulations 2015	7	6.2.5 Cavity Barriers.....	15
2.4 Design Basis and Guidance	7	7. External Fire Spread	16
2.5 Reference Information.....	8	7.1 External Wall Build-up.....	16
3. Summary of Fire Safety Systems.....	9	7.2 Roof Coverings	16
3.1 Fire Detection and Alarm System	9	7.3 Space Separation Assessment.....	16
3.2 Evacuation Alert Systems.....	9	8. Access and Facilities for the Fire and Rescue Service	18
3.3 Automatic Fire Suppression System	9	8.1 External Fire-fighting Facilities	18
3.4 Smoke Ventilation Systems.....	9	8.2 Hose Coverage	18
3.4.1 Refuse Store	9	8.3 Hydrant Provisions	18
3.4.2 Protected Stairs	9	8.4 Wayfinding Signage for the Fire Service	19
3.4.3 Residential Common Corridors	9	8.5 Secure Information Boxes	19
3.4.4 Evacuation Lift Lobby	10	9. References.....	20
3.5 Emergency Lighting.....	10	Appendix A – Compartmentation Drawings	21
3.6 Emergency Signage	10		
3.7 Evacuation Lifts	10		
3.8 Emergency Power	10		
4. Means of Escape	11		
4.1 Evacuation Strategy	11		
4.1.1 Flats	11		
4.1.2 Residential Ancillary Areas	11		
4.2 Internal Arrangement of flats	11		
4.2.1 Open Plan flats	11		
4.3 Cooking Facilities Locations Analysis	12		
4.4 Common Corridor Escape Routes	13		
4.4.1 Overview	13		
4.4.2 Dwellings With Multiple Escape Routes	13		
4.5 Vertical Means of Escape.....	13		
4.5.1 Stair Description	13		
4.5.2 Stair Width.....	13		
4.6 Persons with Reduced Mobility (PRM)	13		
5. Internal Fire Spread (Linings)	14		

TABLE OF FIGURES

Figure 1: Rochdale Road Project Site Location Plan	8
Figure 2: A Demonstration of a typical residential corridor ventilation on upper floors	9
Figure 3: Indicative Travel Distance Measurement	11
Figure 4: An indicative cooking facility analysis measurement	12
Figure 5: Relevant Boundaries on the Ground Floor	17
Figure 6: Relevant Boundaries on the First Floor	17
Figure 7: Fire service protected corridor configuration, an indicative figure	18
Figure 8: Estimated hose coverage, an indicative figure	19

LIST OF TABLES

Table 1: Design items need to be resolved	6
Table 2: Building characteristics	8
Table 3: Reference information	8
Table 4: Classification of linings	14
Table 5: Minimum fire resistance performance for elements within the building	15
Table 6: Space Separation Assessment Calculation	16
Table 7: Firefighting appliance access route specifications	18

1. EXECUTIVE SUMMARY

OFR Consultants Ltd (OFR) have been appointed by McGoff Group Projects Ltd. to provide fire engineering services for the 85 Rochdale Road Phase 2 development scheme located in Manchester. The building includes the erection of a 17-storey residential apartment building (Use Class C3 (a), with associated access, amenity, landscaping, public realm, infrastructure and other associated works. Demolition of existing vacant building on site, comprising of ground floor retail and a first floor apartment.

The project is currently at RIBA Stage 2. This document aims to provide fire safety guidance and outline the essential elements of the fire strategy.

This report focuses exclusively on life safety issues; property protection is not addressed here. The fire strategy is in support of Gateway One. As the project advances, a comprehensive fire strategy, including all necessary analyses, should be developed and incorporated into the final design for submission to the Building Control authority for approval. Ultimately, the design must be fully executed in the completed project with due diligence by qualified professionals to ensure compliance with Building Regulations.

The design items that need to be resolved are listed in Table 1.

Table 1: Design items need to be resolved

Item	Action	Section
Evacuation Lift Lobby Door	To mitigate potential depressurisation issues associated with the MSVS, the lobby doors should be designed to open into the corridors.	3.4.4
Evacuation Lift also serves for firefighting purposes	A dual-entry configuration is proposed for the firefighting lift, which represents a minor deviation from BS 9991 guidance. Fire curtains are provided on the entrance-lobby side to maintain lobby separation and smoke control.	3.7
Fire Hydrant	Fire Hydrant location should be confirmed in the next design stage.	8.3

2. INTRODUCTION

2.1 Appointment

OFR Consultants Ltd (OFR) have been appointed by McGoff Group Projects Ltd. to provide fire engineering services for the 85 Rochdale Road Phase 2 development located in Manchester. The project is currently at RIBA Stage 2, and the purpose of this document is to provide fire safety design advice and to define the key fire strategy principles for the proposed development.

This report addresses life safety considerations only; property protection matters are outside the scope of this document. The fire strategy presented herein is intended to facilitate design discussions and to enable agreement in principle with the appointed Building Control Body.

As the project advances, a comprehensive fire strategy incorporating detailed analyses should be developed and integrated into the final design for submission to the relevant approval authority. Ultimately, the completed design must be implemented with due skill and care by competent persons to ensure full compliance with the requirements of the Building Regulations.

This fire strategy document serves the following key purposes:

- Detail how the relevant fire safety requirements of the Building Regulations 2010 (as amended) could be satisfied;
- Provide advice to the design team to ensure that they can incorporate any fire safety requirements into the aspects of the design for which they are responsible;
- Highlight where further design development is required.

2.2 Development Description

The wider masterplan for the development comprises multiple phases. This report focuses specifically on the Phase 2 block and does not address the overall master plan. The 85 Rochdale Road Phase 2 site location plan is shown in Figure 1.

It is understood that the Phase 2 building will be bounded by Rochdale Road, Clive Street, and Gould Street, and will be located adjacent to the historic Marble Arch Inn and the Rochdale Road Phase 1 building. Key characteristics of the building are outlined below in Table 2.

The proposed development will comprise a residential block rising up to the 17th floor (Level 16). The block has a height of 49.9 m, measured from the firefighter access level to the topmost habitable storey. Accordingly, the building is classified as a Higher-Risk Building (HRB) under the Building Safety Act 2022.

Furthermore, the Marble Arch Inn, which is a Grade II listed building, is situated adjacent to the site.

2.3 Applicable Legislation

2.3.1 The Building Regulations 2010 (as amended)

Fire safety of building works is legislated by the Building Regulations 2010 (as amended) “the Regulations” [1]. The Regulations have been enacted under the Building Act 1984 [2] and are published by the Controller of HMSO. The Regulations impose requirements on people carrying out building work. The requirements are functional rather than prescriptive in nature, which means that the designer is given the freedom to choose the method they use to satisfy the legislation.

This strategy has been developed to address the requirements of Part B of the Regulations that govern the fire safety of building design. These requirements are segregated into distinct aspects of building design as follows:

- B1 – Means of warning and escape;

- B2 – Internal fire spread (linings);
- B3 – Internal fire spread (structure);
- B4 – External fire spread; and
- B5 – Access and facilities for the fire and rescue service.

No additional employer’s requirements have been provided to OFR. For higher risk buildings (HRBs), the Building Safety Regulator (BSR) should do the approvals at each gateway stage. The work cannot progress after each gateway until it has been approved by BSR.

2.3.2 The Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform [Fire Safety] Order 2005 (FSO) came into effect in October 2006 [3]. The Order applies to all non-domestic premises in England and Wales, including the common parts of blocks of flats or houses in multiple occupation. It has subsequently been amended by the Fire Safety Act 2021 [4], in explicitly bringing structure, external walls (inclusive of specified attachments) and apartment entrance doors under the remit of the Order. Secondary legislation setting out regulations for these changes are formalised in the Fire Safety (England) Regulations 2022 [5]. Furthermore, the Building Safety Act 2022 has further strengthened the Order – particularly with respect to the duties of the ‘Responsible Person’ (RP).

The RP under the FSO has a duty to make the premises safe and must undertake regular fire risk assessments. It is the responsible person who should be held accountable under the new legislation for any breaches in fire safety.

In workplaces, the Responsible Person is likely the employer. In other cases, it is likely the owner or anyone who has any extent of control over the premises who would be considered as the Responsible Person. Under the Order, the Responsible Person must carry out a fire safety risk assessment and implement and maintain a fire management plan. The fire risk assessment should be kept under regular review and reassessed if the use of the building has been varied or a material alteration has been made. The significant findings must then be recorded, along with the measures taken to address the risks identified. A competent person should carry out the fire risk assessment.

2.3.3 The Construction (Design and Management) Regulations 2015

The strategy has been developed in cognisance of the Construction (Design and Management) Regulations 2015 [6] CDM 2015), which sets out what designers are required to consider in order to protect anyone involved in the construction or ongoing use of a project. The strategy does not address site fire safety during the building works. The Health and Safety Executive (HSE) issues guidance notes on identifying and managing fire precautions during the works, and they should be consulted by the appropriate party.

2.4 Design Basis and Guidance

The guidance BS 9991:2024 [7] has been used as the principal basis for this fire strategy for all residential and residential ancillary areas.

BS 9991: 2024 [8] allows for alternative fire engineering methods to be employed to support solutions where strict adherence to the codes would conflict with the wider aspirations for the scheme, or where the prescriptive expectations would be applied beyond their remit/scope.

In accordance with the fire safety engineering principles detailed in PD 7974 [9], all fire precautions are designed based on there being a single seat of fire.

Table 2: Building characteristics

Plot	Key Characteristics	Description
Phase 2 Block	Building height (to the topmost habitable level)	49.9 m
	Number of storeys	Ground + 16
	Ground	Parcel & Post, Reception, Refuse Store, Amenity, Cycle Store, Sub Station, LV/HV, Plant room, Building Manager Room, and Accessible WC.
	Floor 01 – Floor 16	Flats

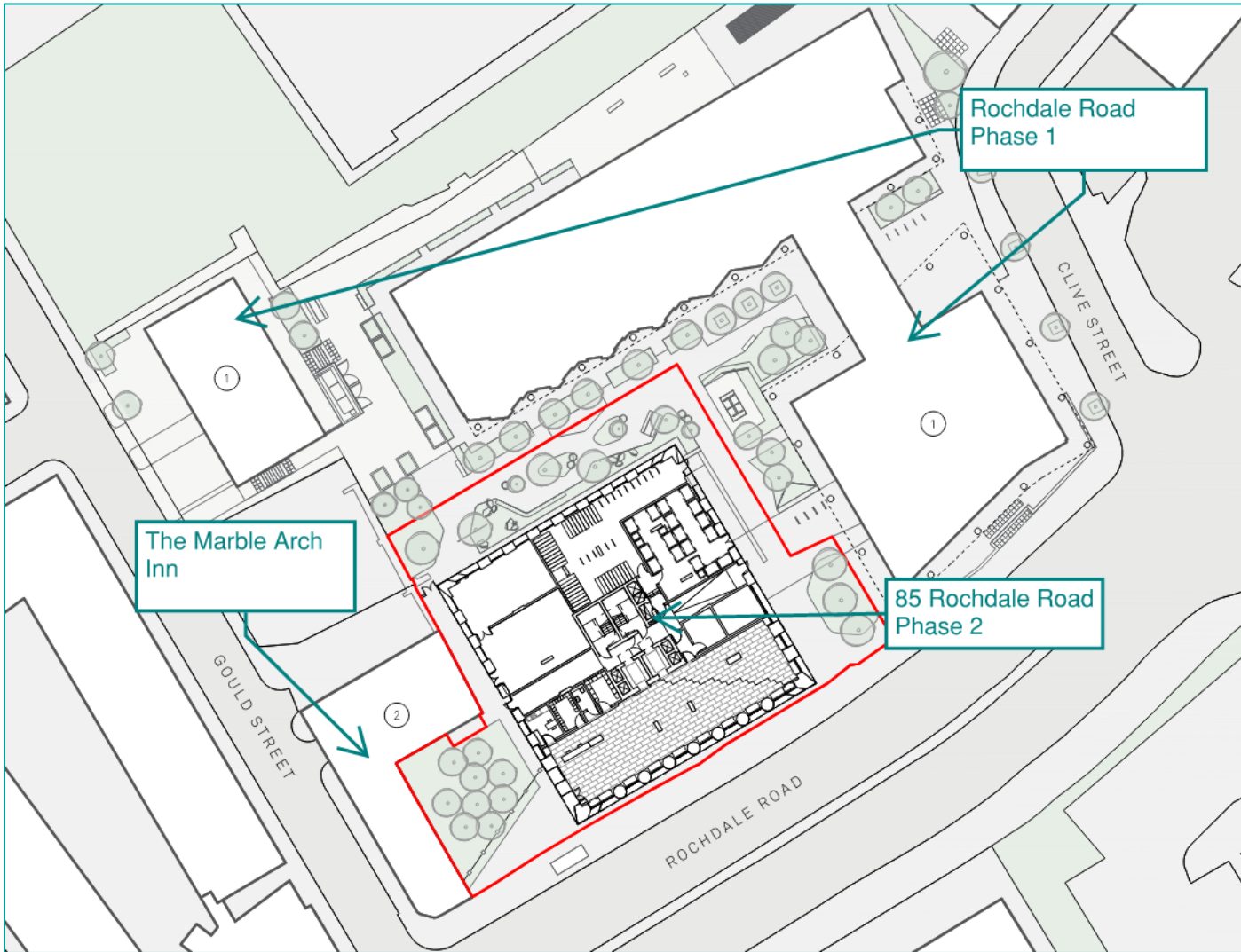


Figure 1: Rochdale Road Project Site Location Plan

2.5 Reference Information

This report has been prepared based on the information provided below in Table 3 produced by Jon Matthews Architects.

Table 3: Reference information

Document Name	Description	Revision
243-JMA-B1-00-DR-A-022200	Proposed Ground Floor	P11
243-JMA-B1-01-DR-A-022201	Proposed 1 st to 7 th Floor	P07
243-JMA-B1-08-DR-A-022208	Proposed 8 th to 16 th Floor	P02
243-JMA-B1-17-DR-A-022217	Proposed Roof	P02
243-JMA-MP-00-DR-A-000200	Proposed Site Plan	P01

3. SUMMARY OF FIRE SAFETY SYSTEMS

3.1 Fire Detection and Alarm System

An automatic fire detection and alarm system should be provided as per the list below. The system should be designed and installed in accordance with the recommendations of the relevant parts of BS 5839-6:2019+A1:2020 [10] for residential areas and BS 5839-1: 2025 [11] for non-residential areas.

- Flats: Category LD1 Grade D1;
- Common corridors: Category L5 (akin to L4 coverage); and
- Ancillary and amenity spaces: Category L2.

Manual call points should be fitted in accordance with BS EN 54-11 [12] (Type A) and BS 5839-1 to all non-residential areas.

It is recommended to include a heat detector in the lobby space for all firefighting lifts, to ensure activation of the lift controls to return to the ground floor if the lobbies become intolerable.

3.2 Evacuation Alert Systems

In regions of the United Kingdom besides Scotland, any proposal to install an evacuation alert system for the fire and rescue service should be discussed with them before proceeding with the system design, based on recommendations from BS 8629 [13].

This ensures that the functionality of the system will be beneficial and that the fire and rescue service will approve the proposed design.

3.3 Automatic Fire Suppression System

The building should be fitted with a domestic sprinkler system complying with BS 9251:2021 [14], which should extend to all residential ancillary areas and commercial (retail) units which do not exceed 100 m². For all non-residential spaces have a total area more than 100 m², the sprinkler system should comply with BS EN 12845.

As the height to the top occupied storey for all buildings exceeds 18m, a Category 4 system is proposed per Table 1 in BS 9251.

In this case, as per BS 9991, where sprinklers are fitted, the protection should be provided throughout the building, including areas that are assumed to be fire sterile.

3.4 Smoke Ventilation Systems

3.4.1 Refuse Store

Rooms containing refuse chutes or provided for the storage of refuse should be approached from a protected lobby having not less than 0.2 m² of permanent ventilation or a suitable mechanical alternative.

3.4.2 Protected Stairs

At this stage, it is proposed that all protected stairs within the scheme should be provided with an (Automated Openable Vent) AOV at the head of the stair with a minimum aerodynamic free area of 0.7 m².

3.4.3 Residential Common Corridors

It is proposed to adopt a mechanical smoke ventilation system (MSVS) as opposed to a natural option within residential common corridors; the design of the system should limit pressure differentials so that the door opening forces do not exceed 100 N at the door handle when the system is in operation. The mechanical smoke shaft should also meet the recommendations in BS 9991.

Performance of MSVS needs to be demonstrated by Computational Fluid Dynamics (CFD) modelling analysis, which will be conducted at the next stage.

The MSVS system includes: a mechanical shaft in each residential corridor, with an indicative free area subject to be confirmed by the CFD analysis; a natural inlet shaft in each lobby with an indicative free area; AOV at the head of both stairs with an indicative free area; Ventilation to lobbies at the ground floor. The indicative free areas could be 1 m² at this design stage.

A demonstration figure is shown in Figure 2.

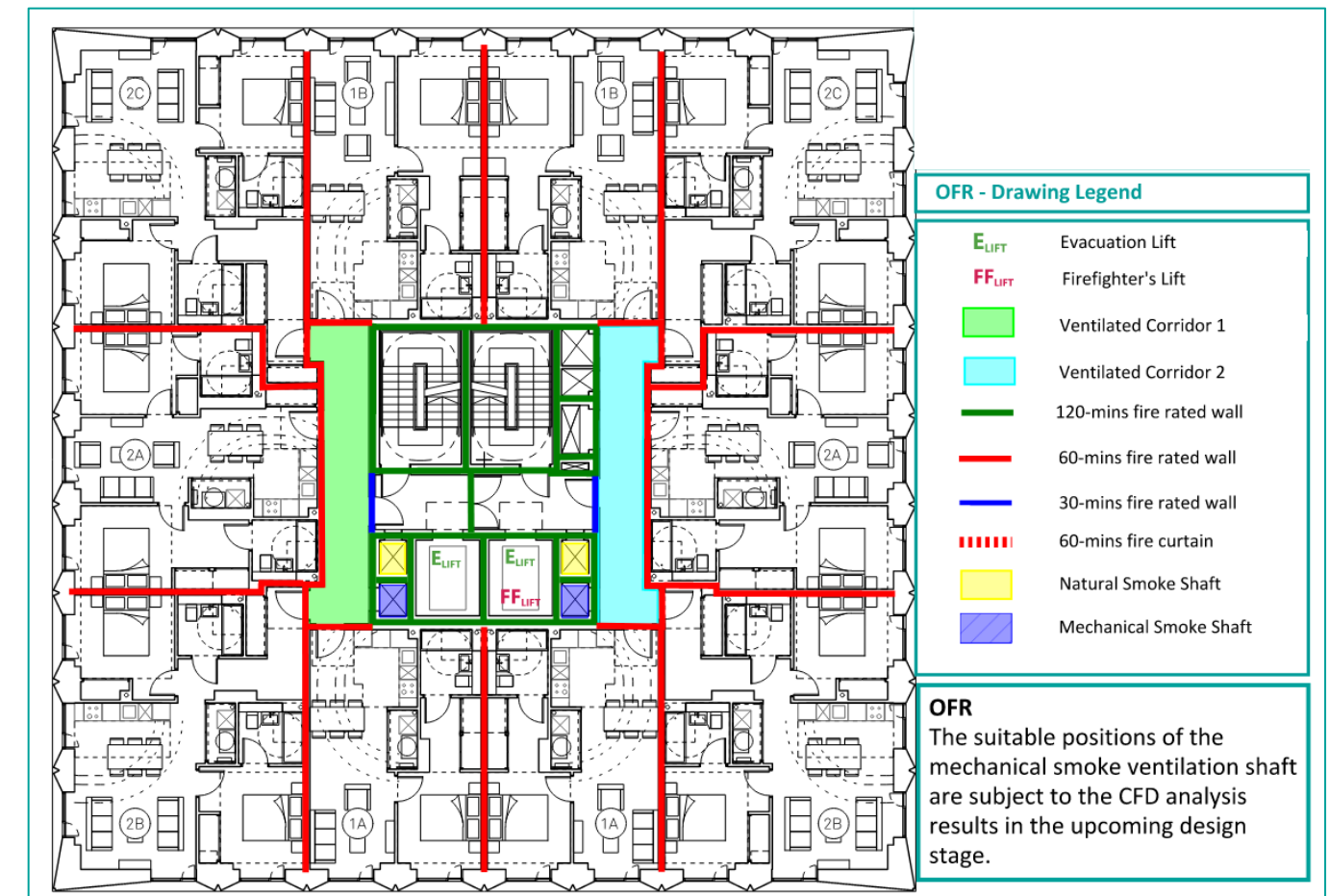


Figure 2: A Demonstration of a typical residential corridor ventilation on upper floors

3.4.4 Evacuation Lift Lobby

There should be an Automated Open Vent (AOV) to be provided within each evacuation lift lobby with a free area of not less than 1.0 m².

Additionally, to mitigate potential depressurisation issues associated with the MSVS, the lobby doors are designed to open into the corridors. This approach ensures pressure equalisation and helps to maintain effective smoke control and ease of door operation during an evacuation.

3.5 Emergency Lighting

Emergency lighting should be installed in accordance with BS 5266-1:2016 [15].

3.6 Emergency Signage

Every escape route should be distinctively and conspicuously marked with appropriate fire safety signage to comply with The Health and Safety (Signs and Signals) Regulations 1996, i.e. signage to be specified in accordance with BS 5499-4 [16], BS 5499-10 [17] and BS ISO 3864- 1 [18].

3.7 Evacuation Lifts

The building is provided with two lifts, each accessed from independent protected lobbies that are connected to separate escape staircases, in accordance with BS 9991:2024.

Both lifts are proposed to be designed as evacuation lifts in accordance with BS EN 81-76 [19], with one of the lifts (the lift located east side) also functioning as a firefighting lift designed in accordance with BS EN 81-72.

Each evacuation lift lobby will be provided with an Emergency Voice Communication (EVC) system, as recommended in BS 9991, to facilitate communication between occupants and management or the fire and rescue service during evacuation.

Where a dual-entry configuration is adopted for the firefighting lift, it is recognised that this represents a deviation from BS 9991 guidance, and justification will be provided within the detailed fire strategy.

In accordance with BS 9991 recommendations, fire curtains will be installed on the entrance-lobby side of the lifts to maintain the required lobby separation and smoke containment. The fire curtain should achieve a minimum of EW60 fire-rated performance.

Where active fire curtain/barrier assemblies are used, they should be tested and installed in accordance with BS 8524-1 [20] and BS 8524-2 [21], respectively.

3.8 Emergency Power

The recommendations within BS 8519 [22] should be followed for the configuration of the circuits within the building and fire protection measures.

All power and control cabling should meet the relevant recommendations in BS 8519 [22] and BS 9991: 2024 [8].

4. MEANS OF ESCAPE

The following sub-sections outline the key principles with regards to the means of escape.

4.1 Evacuation Strategy

4.1.1 Flats

The residential flats in the building should operate what is referred to as a “safe to stay, safe to leave” evacuation strategy. There is no specific difference between this strategy and a “stay put” strategy as the approach set out in BS 9991: 2024 [8] is sometimes referred to.

However, the term “stay put” can be confusing as it implies all occupants other than those in the residential unit of fire origin remaining in place. The strategy envisaged in the standard guidance interpreted by OFR is that:

- Only the occupants from the flat of fire origin should need to evacuate initially;
- All other occupants should be safe to remain in place;
- If further occupants decide to leave or need to leave because they become affected by heat or smoke, they can;
- If the fire and rescue service consider wider evacuation is required, then this can be accommodated.

4.1.2 Residential Ancillary Areas

The evacuation strategy for the residential ancillary areas on the ground floor should be localised evacuation. Occupants within these areas should evacuate in either of the following scenarios:

- Activation of the automatic fire detection and alarm system in these areas;
- Fire suppression system activation; or
- Activation of a manual call point in these areas.

The residential ancillary alarm system should not be linked to the residential system.

4.2 Internal Arrangement of flats

4.2.1 Open Plan flats

The area of the same type of flats slightly varies due to site restrictions, and all proposed flats are still waiting for further internal layout design.

The travel distance measures are indicated in examples of proposed flats in Figure 3.

All flats are open-plan flats, where the bedrooms are accessed from the living areas (inner rooms).

It is recommended that:

- Grade D1 LD1 fire alarm and fire detection system installed per BS 5839-6 [10] and an automatic fire suppression system to BS 9251 [14];
- The size of the flat should not exceed 16m x 12m (192m²);
- The flat should be situated on a single level only;
- The ceilings within the flat have a minimum height of 2.25 m;
- The kitchen be enclosed in flats having an area exceeding 8m x 4m (32m²);
- Cooking appliances in open-plan flats having an area smaller than 8m x 4m (32m²) should not be adjacent to the entrance of the flat.

As a sprinkler system is proposed to be installed in the building, the allowable travel distance from any point of the flat to the entrance door is extended from 9m to 20m. In the current case, the travel distances inside the flats are acceptable.

The proposed flat layouts should align with the above criteria except for the last item, as the kitchens are not currently proposed to be enclosed.

However, OFR acknowledges that the current proposal is acceptable, with OFR’s interpretation to be provided in section 4.3.

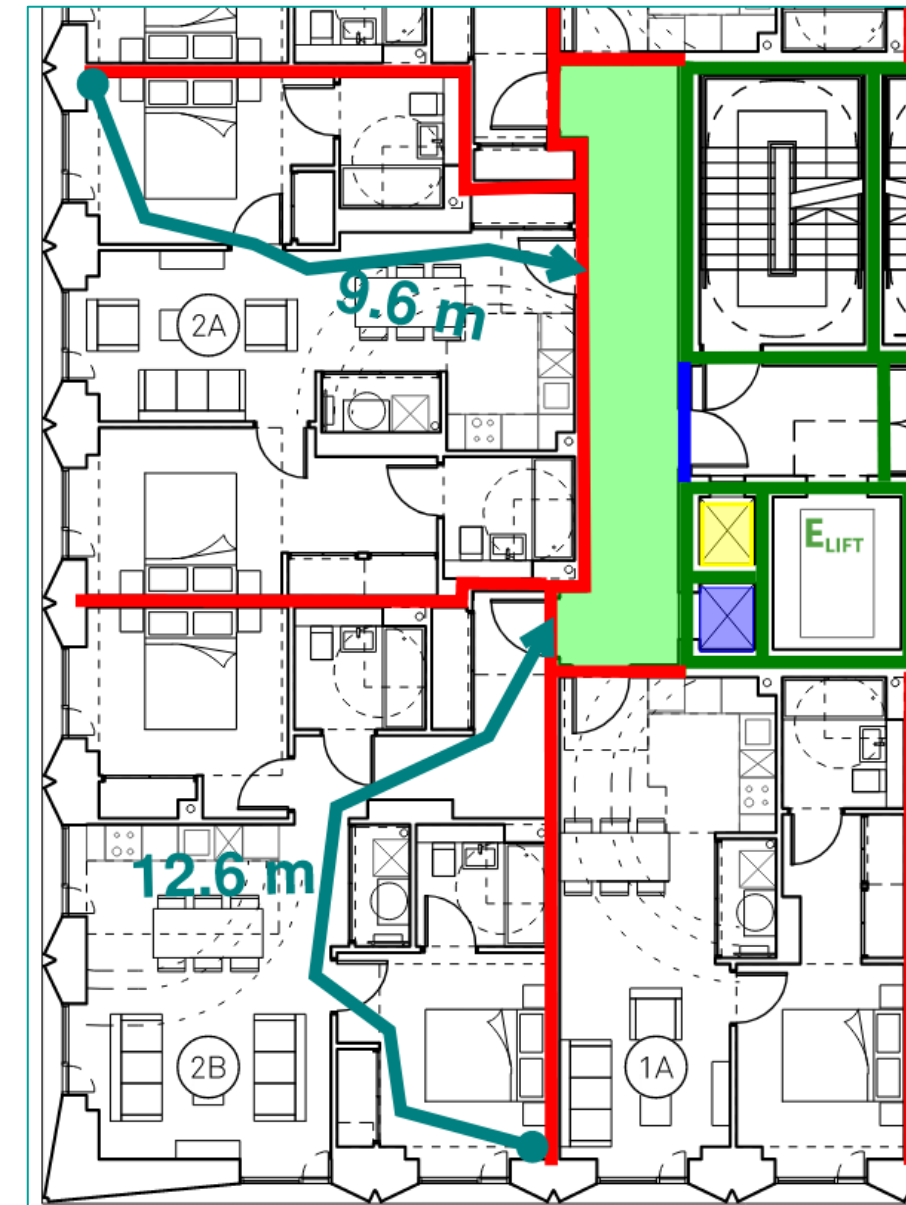


Figure 3: Indicative Travel Distance Measurement

4.3 Cooking Facilities Locations Analysis

Where the escape route from a separate habitable room is through a living area containing a kitchen that is not located within a separate enclosure, the following recommendations should be met:

- All rooms in the dwelling, except for any exclusions as described in BS 9251 [14] should be provided with a sprinkler system confirming to BS 9251;
- The dwelling should be provided with a Category LD1 fire detection and fire alarm system in accordance with BS 5839-6:2019+A1;
- All cooking apparatus, with a fixed connection to the dwelling's electricity or gas supply, should be located as far away from the escape route as practicable. The edge of the cooking apparatus should be not less than 1.8 m away from an escape door, a door to an adjoining habitable room or a means of escape route to an escape door;
- All egress routes from habitable rooms to the escape door (s) from the dwelling should be not less than 0.9 m in width. No fixed obstructions (such as radiators or cupboards) should be located within the 0.9m escape route; and
- A gap of 0.3 m should be provided between the leading edge of the exit door from the space containing the cooking facility and the 1.8m zone from the cooking apparatus, to allow people with mobility impairments to access the door hardware.

BS 9991: 2024 [7] also notes that the recommendations above are intended to restrict the heat flux received by a person escaping past the cooking apparatus to not more than 2.5 kW/m².

The indicative cooking facility location is indicated in Figure 4.

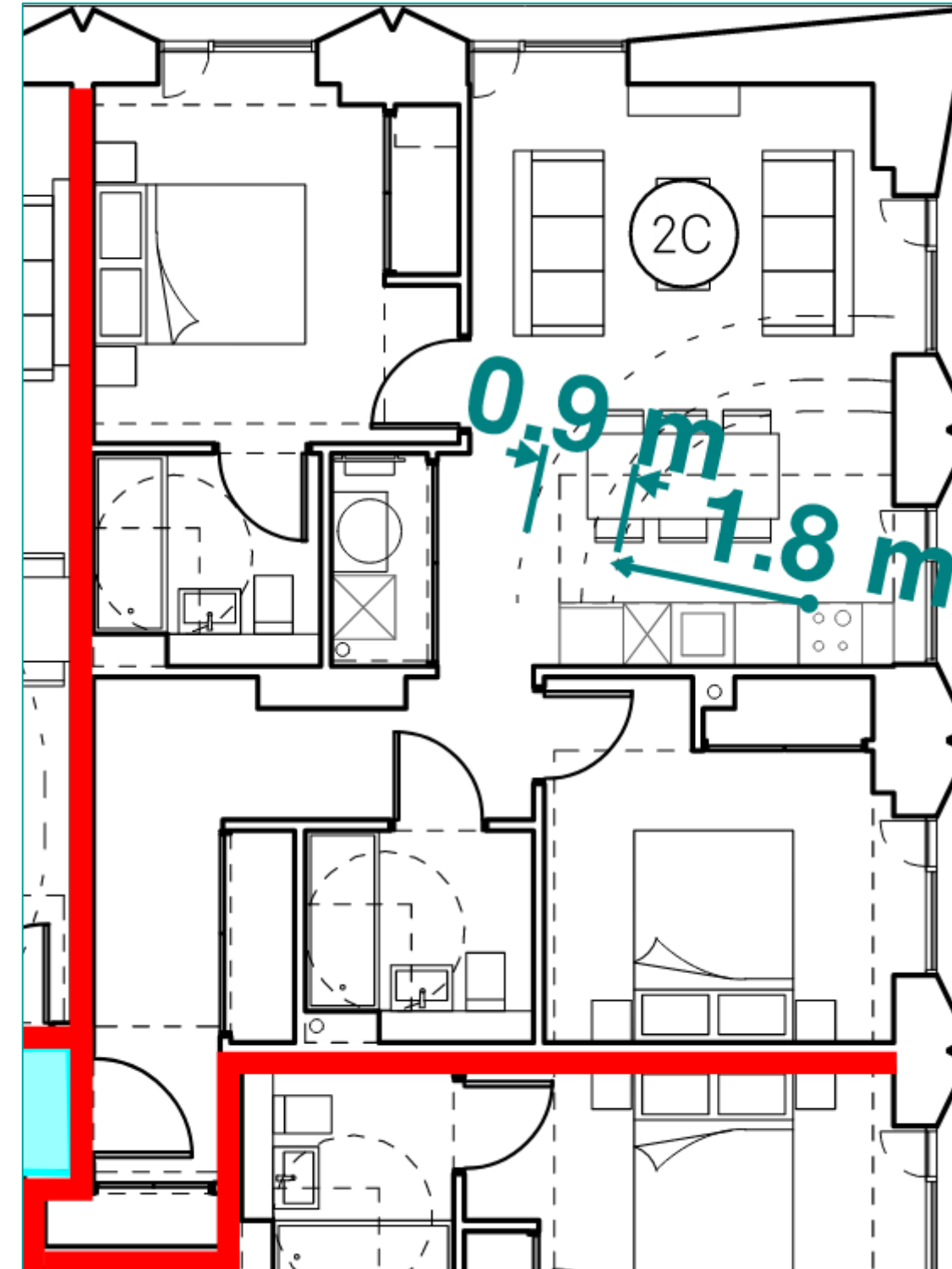


Figure 4: An indicative cooking facility analysis measurement

4.4 Common Corridor Escape Routes

4.4.1 Overview

All flats in the scheme are accessed via common residential corridors/directly from outside. BS 9991:2024 [8] recommends that the travel distances between the exit doors from the dwellings and a relatively smoke-free area are limited, and that the amount of smoke and other combustion products in the internal corridor is kept to a minimum by providing cross-corridor fire doors and ventilation.

4.4.2 Dwellings With Multiple Escape Routes

As the building will be provided with sprinkler protection, BS 9991 recommends that the maximum single-direction travel distance is limited to 15 m, and the maximum travel distance where there are multiple means of escape is limited to 30 m. In the building, the recommended travel distances from BS 9991: 2024 [8] are understood to be met.

4.5 Vertical Means of Escape

4.5.1 Stair Description

The building is designed with two stairs. All storeys should be served by two protected stairs as indicated.

4.5.2 Stair Width

BS 9991: 2024 [8] recommends that the clear width of each common stair should have a clear width not less than the values given in BS 5395-1: 2010 Table 1, i.e., 1,000 mm for regular two-way traffic stairs. Both stairs are currently proposed to have a clear width of 1200 mm.

This is deemed as suitable as there are no explicit recommendations in BS 9991: 2024 to calculate the stair capacity for a residential building (due to the stay-put strategy typically implemented for the residential levels).

4.6 Persons with Reduced Mobility (PRM)

The accessible means of escape needs to form an integral part of the design and be incorporated into the fire safety strategy. No reliance should be made on the fire service to assist in the evacuation of mobility impaired occupants. Therefore, associated with each protected stair enclosure in all buildings should be an evacuation lift.

The evacuation lift lobby should provide a refuge area for those waiting for the evacuation lift, have direct access to a protected stairway and not be directly accessible from any flat, storage room or electrical equipment room.

It should be ensured that the lifts remain operational during an event of fire unless the evacuation lift lobby is compromised with smoke, forming untenable conditions. The lifts should not be designed to immediately ground after the activation of smoke detectors, as the conditions inside the corridor can still be tenable for occupants to evacuate, as they are equipped with a mechanical smoke control system).

Please refer to the Appendix for the evacuation lift lobby demonstration.

5. INTERNAL FIRE SPREAD (LININGS)

All wall and ceiling linings in the building are to meet the recommendations from BS 9991: 2024 [8] in residential areas and non-residential areas.

The recommendations of both are summarised in Table 4.

Table 4: Classification of linings

Location	European Class ⁽¹⁾
Small rooms of area not more than:	
4 m² in residential accommodation 30 m² in non-residential accommodation	D-s3, d2
Other rooms ⁽²⁾	C-s3, d2
Circulation spaces within dwellings	
Other circulation spaces (including the common areas of the building)	B-s3, d2

Notes:

- (1) When classified in accordance with BS EN 13501-1:2018 [23].
- (2) Parts of walls in rooms may be of European Class D-s3, d2 provided that the total area of those parts in any one room does not exceed one half of the floor area of the room, subject to a maximum of 20 m² in residential accommodation, and 60 m² in non-residential accommodation.

6. INTERNAL FIRE SPREAD (STRUCTURE)

6.1 Structural Fire Resistance

Fire resistance is a measure of one or more of the following:

- Loadbearing capacity (R) – resistance to collapse, which applies to loadbearing elements only;
- Integrity (E) – resistance to fire penetration; and
- Insulation (I) – resistance to the transfer of excessive heat.

The building is more than 30m in height from the access level to the topmost habitable level.

Therefore, BS 9991: 2024 [8] recommends that all load-bearing elements of the structure should be provided with a minimum of 120 minutes fire resistance (120 R) for the building.

6.2 Compartmentation and Fire-Resisting Construction

6.2.1 Overview

Table 5 provides indicative compartmentation recommendations for the scheme during RIBA Stage 2. This information is based on the recommendations within BS 9991: 2024.

6.2.2 Compartment Floors

All floors should be designed as compartment floors, achieving at a minimum of 120 minutes for the building, i.e., fire resistance of 120 REI.

6.2.3 Compartment Walls

Compartment walls should match the fire resistance period of the structure (120 minutes REI).

6.2.4 Fire Doors

Fire doors should be provided as per Table 5.

Fire doors penetrating a fire-rated partition should be provided in accordance with BS 476-22 [24] or classified in accordance with BS EN 13501-2 [25] and provided with smoke seals (where specified) in accordance with BS 476-31.1:1 [26] or BS EN 1634-3 [27].

All fire doors should be fitted with self-closers except for fire doors to cupboards and service risers, which are to be kept locked shut. Where a self-closing device is considered of hindrance to the normal use of the building, automatic hold-open devices linked to the fire detection and alarm system in accordance with BS 7273-4 should be provided.

6.2.5 Cavity Barriers

Cavity barriers should be provided to close the edges of cavities, including around openings and other penetrations through a wall.

Cavity barriers should also be provided at the junction between an external cavity wall and every compartment wall and compartment floor, and at the junction between an internal cavity wall and every compartment wall, compartment floor, or other wall or door that forms a fire-resisting barrier.

Table 5: Minimum fire resistance performance for elements within the building

Element	Minimum Fire Resistance Performance ⁽¹⁾	Minimum Fire Performance for Fire Door set
Loadbearing elements	120 R	N/a
Compartment floor	120 REI	N/a
Compartment walls	120 REI	FD 120S
Flat enclosures	60 REI	FD 30S
Protected shaft (Stair)	120 REI	FD 60S
Firefighting shaft	120 REI	FD 60S
Protected shaft (service risers)	120 REI	FD 60
Protected shaft (smoke shaft)	120 REI	FD 60
Protected Lobbies	30 REI	FD 30S
Cross-corridor partitions	30 REI	FD 30S
Refuse Store	60 REI	FD 60S
Amenity	30 REI	FD 30S
Substation ⁽²⁾ , Plant Room, LV Switch Room	120 REI	FD 60S
Sprinkler tank room	120 REI	FD 60S
Cavity barriers	30 E / 15 I	N/a

Notes:

(1) The 'R' rating only applies to load-bearing elements.

(2) The substation may require 240 minutes fire resistance following electricity provider recommendations

7. EXTERNAL FIRE SPREAD

7.1 External Wall Build-up

For residential buildings over 18m in height, the external surface of the walls achieves Class A2-s1, d0 or better in accordance with BS EN 13501-1, to satisfy the requirements of Regulation 7(2).

30 minutes fire resisting construction should be provided around the elevation of the building, if persons have to escape within 1.8 m of the elevation.

Regulation 7(2) does not apply to the following:

- cavity trays when used between two leaves of masonry;
- any part of a roof (other than any part of a roof which falls within paragraph (iv) of regulation 2(6)) if that part is connected to an external wall;
- door frames and doors;
- electrical installations;
- fibre optic cables
- insulation and waterproofing materials used below ground level [or up to 300mm above that level];
- intumescent and fire-stopping materials where the inclusion of the materials is necessary to meet the requirements of Part B of Schedule 1;
- membranes;
- seals, gaskets, fixings, sealants and backer rods;
- components associated with a solar shading device, excluding components whose primary function is to provide shade or deflect sunlight, such as the awning curtain or slats;
- thermal break materials where the inclusion of the materials is necessary to meet the thermal bridging requirements of Part L of Schedule 1;
- window frames and glass; and
- materials which form the top horizontal floor layer of a balcony, which are of European Classification A1fl or A2fl-s1 (classified in accordance with the reaction to fire classification), provided that the entire layer has an impermeate substrate under it.

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 an external wall should also be Class A2-s1, d0 or better.

Membranes used as part of the external wall construction above ground level should achieve at a minimum Class B-s3, d0.

Thermal breaks should not span two compartments and should be limited in size to the minimum required to restrict the thermal bridging (the principal insulation layer is not to be regarded as a thermal break).

It is recommended that all practical endeavours should be applied to seek the best performing materials (subject to other performances being satisfactory).

7.2 Roof Coverings

Performance of the resistance of roofs to external fire exposure is measured in terms of penetration through the roof construction and the spread of flame over its surface. Roof covering designations are derived in accordance with the means detailed in BS EN 13501-5 [28].

Due to the proximity of the buildings to each other, it is recommended that the roof coverings for the building, over compartment walls, and on the Class A2 substrate, be used to achieve B_{ROOF}(t4).

7.3 Space Separation Assessment

The primary objective of the space separation assessment is to evaluate and ensure that the proposed development does not adversely affect the adjacent historic premises, the Marble Arch Inn.

Preliminary calculations in accordance with BR 187 [29] are conducted, in order to determine the requisite quantity of fire-rated external wall construction to mitigate the risk of fire spread across relevant boundaries.

The relevant boundaries on the ground floor and the first floor are shown in Figure 5 and Figure 6. The calculation results are further tabulated in *Table 6*.

The following assumptions have been made for these calculations:

- Each area has been measured as an equivalent rectangle;
- The fire has been assumed to compromise the entirety of a compartment;
- The fire should be restricted to a single level due to the compartment floors;
- The employed relevant boundaries for the elevations are the site boundaries set by the design team;
- In areas where the building is constructed on the relevant boundary, this calculation was not done as external walls in these areas should be fire resisting from both sides, with only small, unprotected openings allowed, as defined in BS 9991: 2024 [8];
- The largest compartment facing the elevation across the building height is selected to check the allowable unprotected area, as it should generate the maximum area for the relevant building elevations;
- The automatic sprinkler system was accounted for by doubling the allowable unprotected area.

As the design develops, further details will be provided at the next design stage.

Table 6: Space Separation Assessment Calculation

Level-Room	Heat Flux (kW/m ²)	Boundary Distance (m)	Enclosing Rectangle (W x H) (m)	Allowable Unprotected Area (%)
Ground – Plant room	168	2.7	12.9 x 4.0	48*
Ground – Cycle Store	84	7.6	17.0 x 4.0	100
Ground – Refuse Store	84	5.0	9.6 x 4.0	100
First – Flat	84	2.7	9.8 x 3.0	100*

Note*: The allowable unprotected area is doubled, as the room is sprinkler protected.

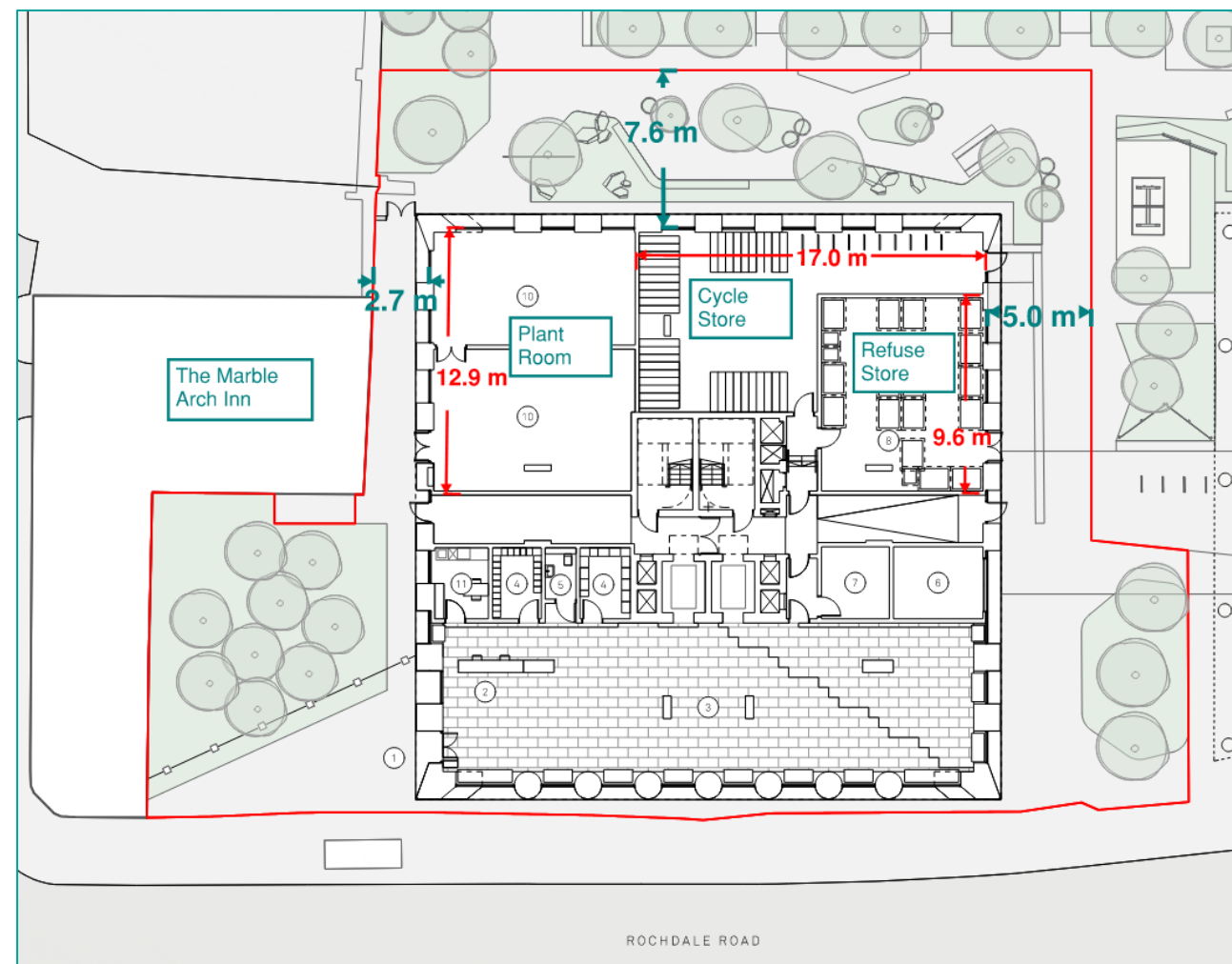


Figure 5: Relevant Boundaries on the Ground Floor

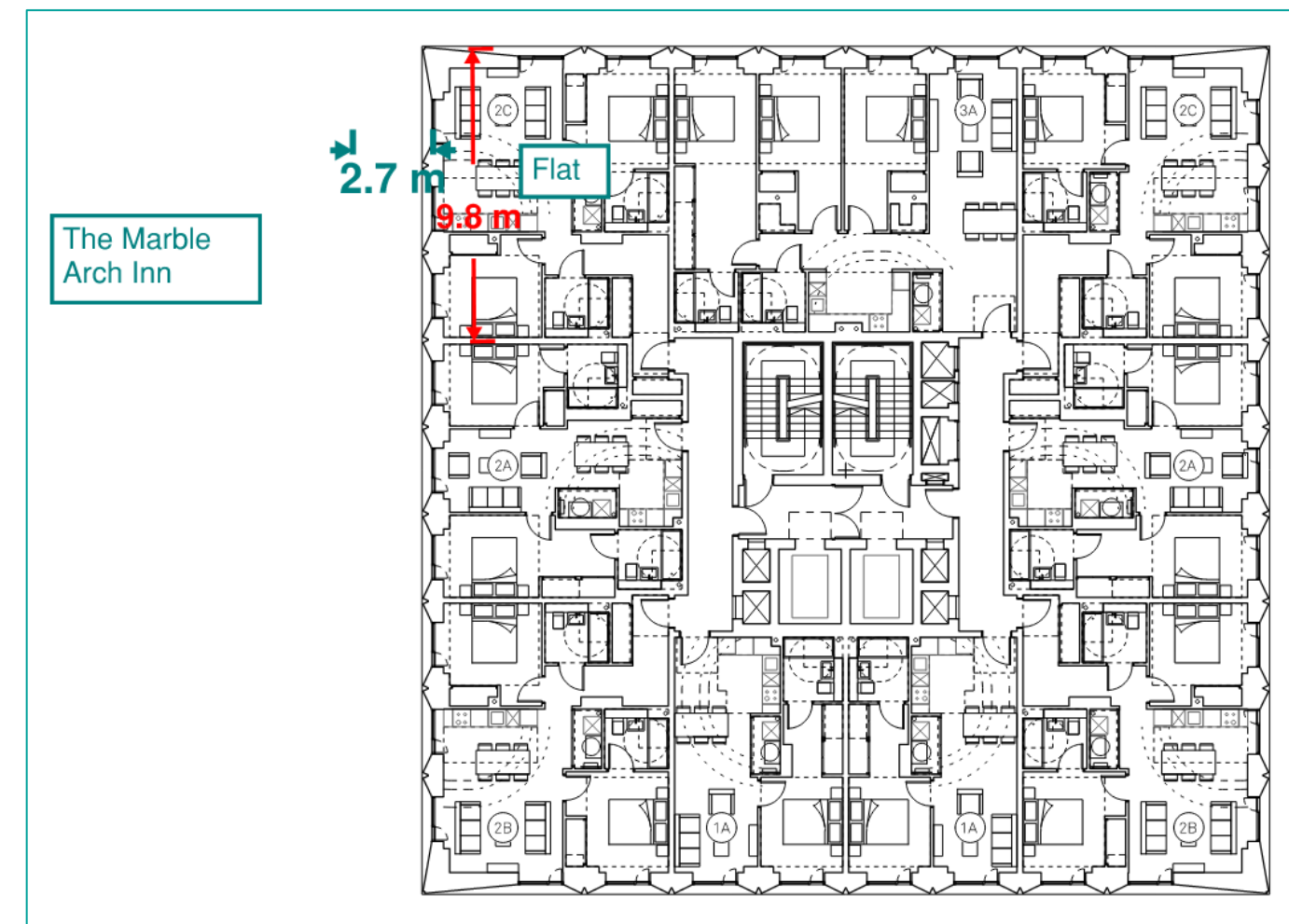


Figure 6: Relevant Boundaries on the First Floor

8. ACCESS AND FACILITIES FOR THE FIRE AND RESCUE SERVICE

8.1 External Fire-fighting Facilities

It is proposed to incorporate one firefighting shaft within the block, given the floor area is less than 900 m², which should be provided with a dry riser in the firefighting shaft, as the topmost habitable level is below 50 m in height.

BS 9991: 2024 recommends that the fire appliance should be able to park within 18m of the fire main inlet connection point, typically on the face of the building close to the entrance point leading to the stair enclosure, with the inlet visible from the fire appliance. An indicative figure is shown in Figure 7.

The dry riser main should be accessed from the side of Rochdale Road. Additionally, as per guidance, turning facilities should be provided in any dead-end access route that is more than 20m long. This can be done by a hammerhead or a turning circle.

The fire appliance access route should, as a minimum, meet the recommendation in Table 7.

Furthermore, fire appliances are not standardised in the UK. These values should therefore be confirmed by the Greater Manchester Fire and Rescue Service.

Table 7: Firefighting appliance access route specifications

Appliance Type	Minimum width of road between kerbs (m)	Minimum width of gateways (m)	Minimum turning circle between kerbs (m)	Minimum turning circle between walls (m)	Minimum clearance height (m)	Minimum carrying capacity (tonnes)
Pump	3.7	3.1	16.8	19.2	3.7	12.5
High-Reach	3.7	3.1	26	29	4	17

8.2 Hose Coverage

When a building is fitted throughout with a sprinkler system in accordance with BS 9251 [14], sufficient fire-fighting shaft should be provided that every part of every storey is no more than 60 m from a fire main outlet in a fire-fighting shaft, as measured on a route suitable for laying hose.

As per the current drawings, all areas of the building are within 60 m of the dry riser outlet point. The first floor, served as an example, is provided in Figure 8.

8.3 Hydrant Provisions

BS 9991: 2024 [7] recommends that hydrants be located in positions that are near building entry points (including entry points to the protected stairs containing fire mains) and fire appliance parking positions.

For buildings that are provided with dry rising mains, such as these buildings, hydrants should be provided within 90 m of an entry point to the building and not more than 90 m apart.

The locations of the existing hydrants should be confirmed at the next design stage via a suitable utilities survey.

It should be demonstrated that the water mains and hydrants can deliver a sufficient flow of water to enable effective firefighting to be undertaken.

All hydrants should have signage in accordance with BS 3251 [30].

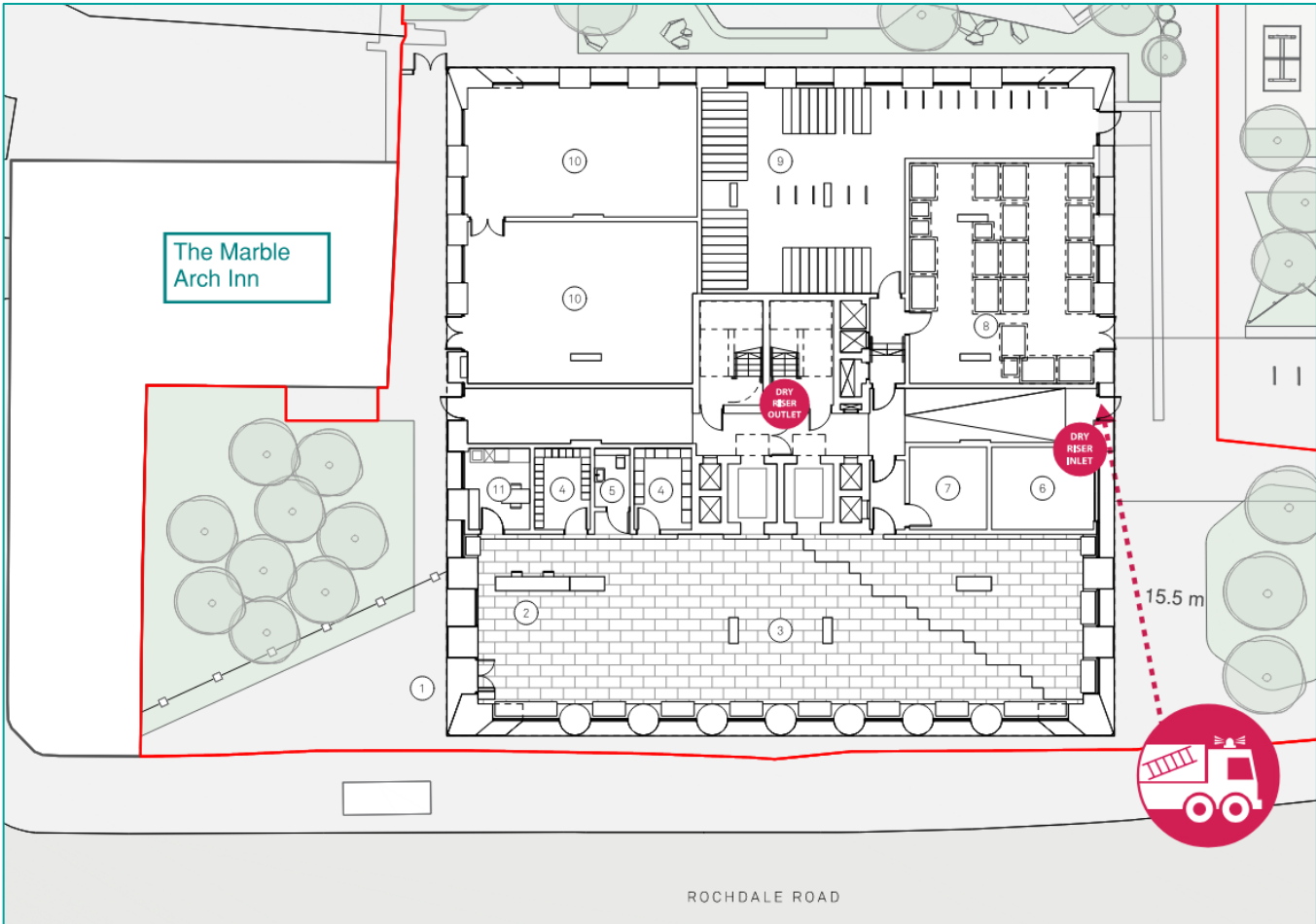


Figure 7: Fire service protected corridor configuration, an indicative figure

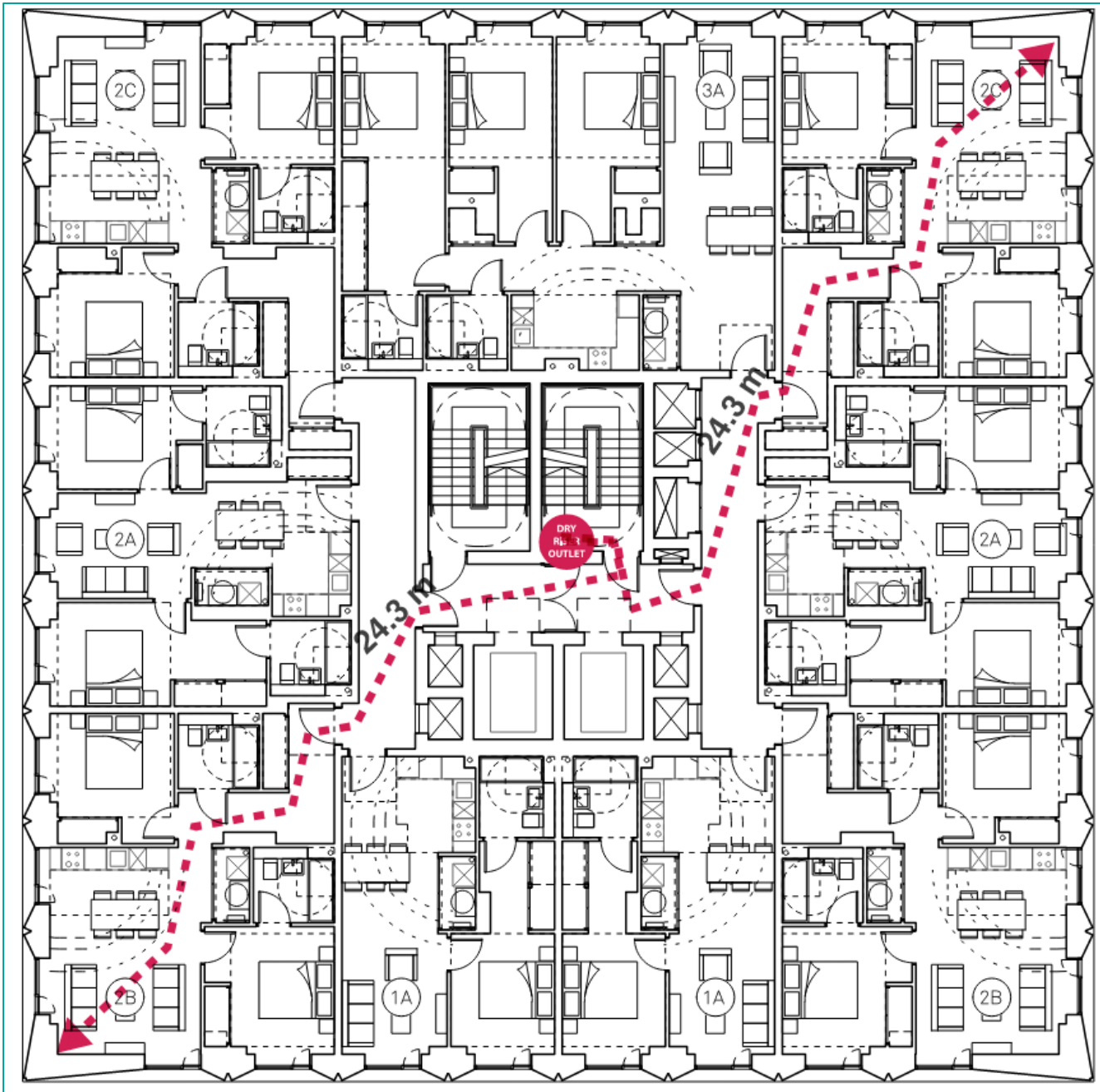


Figure 8: Estimated hose coverage, an indicative figure

8.4 Wayfinding Signage for the Fire Service

To assist the Fire and Rescue Service in identifying each floor of the building and individual flats, floor identification signs should be provided as per best practice and the guidance to meet all of the following conditions:

- The signs should be located on every landing of a protected stairway and every protected corridor/lobby into which a fire-fighting lift opens;
- The text should be in sans serif typeface with a letter height of at least 50 mm. The height of the numeral that designates the floor number should be at least 75 mm;
- The signs should be visible from the top step of a fire-fighting stair and, where possible, from inside a fire-fighting lift when the lift car doors open;
- The signs should be mounted between 1.7 m and 2.0 m above floor level and, as far as practicable, all the signs should be mounted at the same height; and
- The text should be on a contrasting background, easily legible and readable in low-level lighting conditions or when illuminated with a torch.

8.5 Secure Information Boxes

A secure information box provides a secure facility to store information about a building for use by the fire and rescue service during an incident. As the buildings have a top storey height of more than 11 m above ground level, the buildings should be provided with a secure information box. The box should meet all the following conditions:

Sized

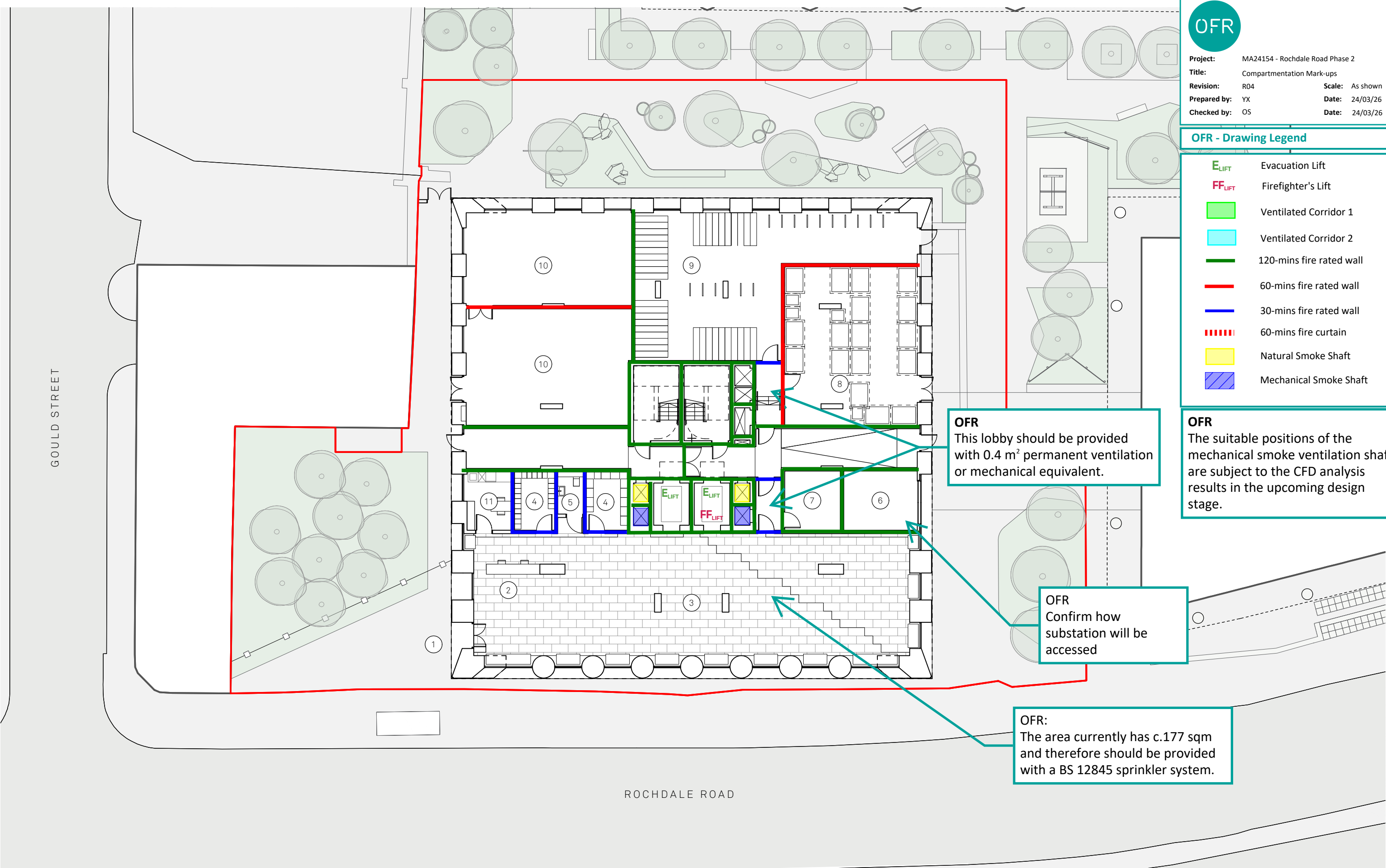
- Sized to accommodate all necessary information;
- Easily located and identified by firefighters;
- Secured to resist unauthorised access but readily accessible by firefighters;
- Protected from the weather.

Best practice guidance for the adoption of these secure information boxes is contained within Sections 2 to 4 of the 'Code of Practice for the Provision of Premises Information Boxes in Residential Buildings' published by the Fire Industry Association (FIA).

9. REFERENCES

- [1] HM Government, 'The Building Regulations 2010, incorporating amendments up to 2023', Ministry for Housing, Communities & Local Government, 2023.
- [2] HM Government, 'Building Act 1984', Department for Communities and Local Government, London, UK, 1984.
- [3] *The Regulatory Reform (Fire Safety) Order 2005*. 2005. [Online]. Available: <http://www.legislation.gov.uk/ukxi/2005/1541/contents/made>
- [4] *The Fire Safety Act 2021*. 2021. [Online]. Available: <https://www.legislation.gov.uk/ukpga/2021/24/contents/enacted>
- [5] 'Fire Safety (England) Regulations 2022', HM Government.
- [6] HSE, 'The Construction (Design and Management) Regulations 2015', Health and Safety Executive, 2015.
- [7] BSI, 'BS 9991:2024 Fire safety in the design, management and use of residential buildings – Code of practice', London, 2024.
- [8] BSI, 'British Standard BS 9991: 2015, Fire safety in the design, management and use of residential buildings'.
- [9] BSI, 'PD 7974-0:2002 Application of fire safety engineering principles to the design of buildings. Guide to design framework and fire safety engineering procedures', BSI, London, 2002.
- [10] BSI, 'BS 5839-6:2019+A1:2020 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', BSI, London, 2020.
- [11] BSI, 'BS 5839-1:2025 Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises', BSI, London, 2025.
- [12] BSI, 'BS 5266-1:2016', BSI, London, 2001.
- [13] 'BS 8629:2019 Code of practice for the design, installation, commissioning and maintenance of evacuation alert systems for use by fire and rescue services in buildings containing flats (+A1:2023)', BSI British Standards, 2023.
- [14] BSI, 'BS 9251:2021 Fire sprinkler systems for domestic and residential occupancies. Code of practice', BSI, London, 2021.
- [15] BSI, 'BS 5266-1:2016 Emergency lighting. Code of practice for the emergency lighting of premises', BSI, London, 2016.
- [16] BSI, 'BS 5499-4:2013 Safety signs. Code of practice for escape route signing', BSI, London, 2013.
- [17] BSI, 'BS 5499-10:2014+A1:2023 Guidance for the selection and use of safety signs and fire safety notices', BSI, London, 2023.
- [18] BSI, 'BS ISO 3864-1:2011 Graphical symbols. Safety colours and safety signs. Design principles for safety signs and safety markings', BSI, London, 2011.
- [19] BSI, 'BS EN 81-76:2025 Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lifts. Evacuation of persons with disabilities using lifts', BSI, London, 2025.
- [20] BSI, 'British Standard BS 8524-1:2013, Active fire curtain barrier assemblies – Part 1: Specification', BSI Standards Publication, 2013.
- [21] BSI, 'British Standard BS 8524-2:2013, Active fire curtain barrier assemblies – Part 2: Code of practice for application, installation and maintenance', BSI Standards Publication, 2013.
- [22] BSI, 'BS 8519:2020, Selection and installation of fire-resistant power and control cable systems for life safety, fire-fighting and other critical applications – Code of practice', BSI Standards Publication, 2020.
- [23] BSI, 'BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests', BSI Standards Publication, London, 2018.
- [24] BSI, 'BS 476-22:1987 Fire tests on building materials and structures. Method for determination of the fire resistance of non-loadbearing elements of construction', British Standards Institution, London, 1987.
- [25] BSI, 'BS EN 13501-2:2023 Fire classification of construction products and building elements. Classification using data from fire resistance tests, excluding ventilation services', BSI, London, 2023.
- [26] BSI, 'BS 476-31.1:1983 Fire tests on building materials and structures. Methods for measuring smoke penetration through doorsets and shutter assemblies. Method of measurement under ambient temperature conditions', BSI, London, 1983.
- [27] BSI, 'BS EN 1634-3:2004 Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware. Smoke control test for door and shutter assemblies', BSI, London, 2005.
- [28] BSI, 'BS EN 13501-5:2016 Fire classification of construction products and building elements. Classification using data from external fire exposure to roofs tests', BSI, London, 2016.
- [29] R. Chitty, *BR 187 External fire spread. Building separation and boundary distances.*, 2nd ed. Watford: BRE Bookshop, 2014.
- [30] BSI, 'BS 3251:2017 Specification Indicator plates for fire hydrants and emergency water supplies'. BSI, 2017.

APPENDIX A – COMPARTMENTATION DRAWINGS



Project: MA24154 - Rochdale Road Phase 2
Title: Compartmentation Mark-ups
Revision: R04
Prepared by: YX
Checked by: OS
Scale: As shown
Date: 24/03/26
Date: 24/03/26

OFR - Drawing Legend

- E_{LIFT}** Evacuation Lift
- FF_{LIFT}** Firefighter's Lift
- Ventilated Corridor 1
- Ventilated Corridor 2
- 120-mins fire rated wall
- 60-mins fire rated wall
- 30-mins fire rated wall
- 60-mins fire curtain
- Natural Smoke Shaft
- Mechanical Smoke Shaft

OFR
The suitable positions of the mechanical smoke ventilation shaft are subject to the CFD analysis results in the upcoming design stage.

OFR
This lobby should be provided with 0.4 m² permanent ventilation or mechanical equivalent.

OFR
Confirm how substation will be accessed

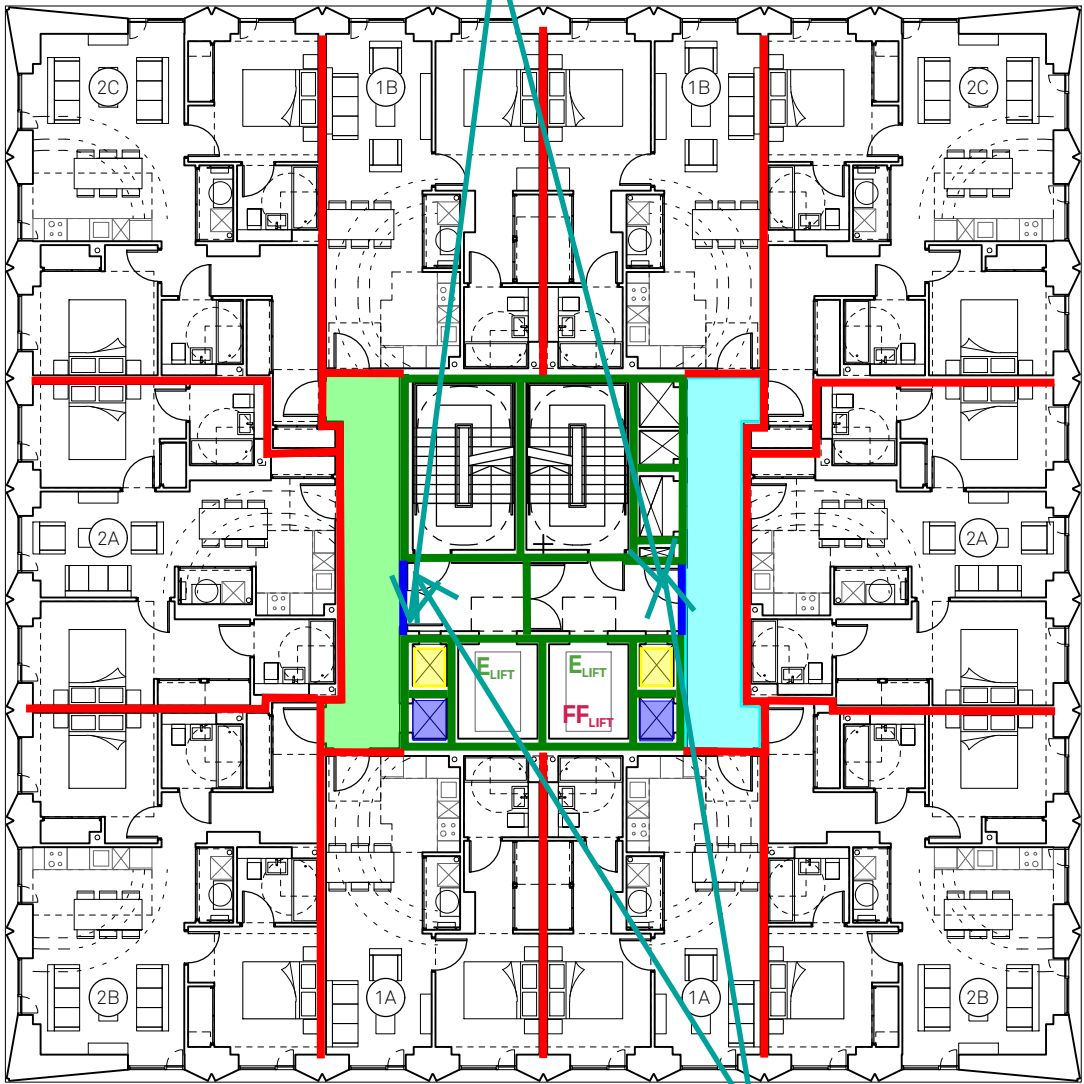
OFR:
The area currently has c.177 sqm and therefore should be provided with a BS 12845 sprinkler system.

OFR - Drawing Legend

- E_{LIFT} Evacuation Lift
- FF_{LIFT} Firefighter's Lift
- Ventilated Corridor 1
- Ventilated Corridor 2
- 120-mins fire rated wall
- 60-mins fire rated wall
- 30-mins fire rated wall
- 60-mins fire curtain
- Natural Smoke Shaft
- Mechanical Smoke Shaft

OFR
The suitable positions of the mechanical smoke ventilation shaft are subject to the CFD analysis results in the upcoming design stage.

OFR
Lobby doors to open into the common corridor to avoid excessive depressurisation resulting in door opening force exceeding 100n.



OFR
There should be a minimum of 500mm between the lobby wall and the lift door or control panel, whichever is closer.

Key:
 Application Boundary
xx Refer to area schedule

North:



Project:
85 Rochdale Road

Status:
Information

Scale:
1:200 @ A3

Date:
03/03/26

Title:
Proposed 8st to 16th Floor

Drawing No:
243-JMA-B1-08-DR-A-022208

Rev:
P02

Jon Matthews Architects

Union, 2-10 Albert Square, Manchester, M2 6LW
0161 974 3690

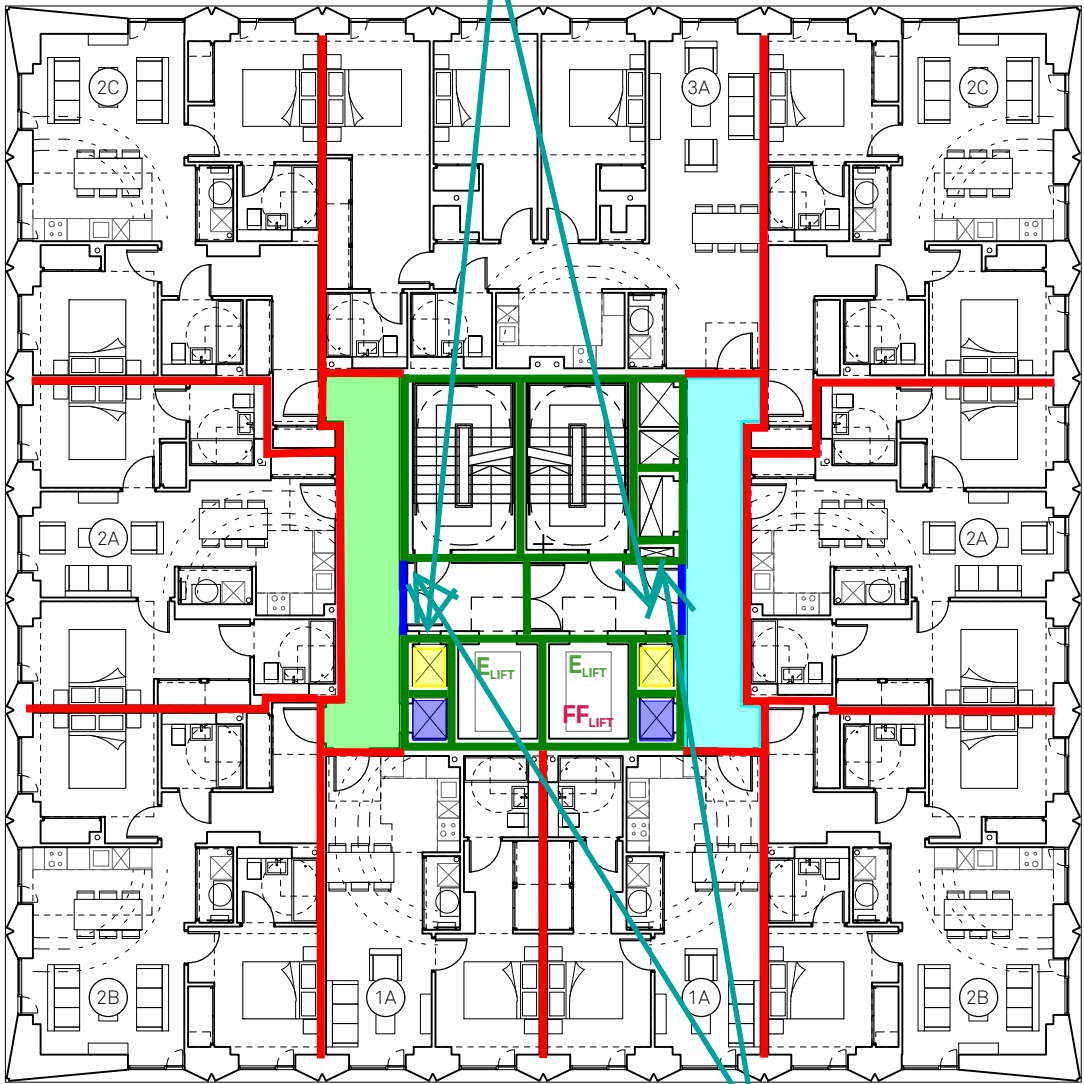
Copyright of this drawing is vested in Jon Matthews Architects and must not be copied or reproduced without written consent. Figured dimensions only are to be taken from this drawing. Do not scale from this drawing. For full company disclosure please visit www.jonmatthewsarchitects.com

OFR - Drawing Legend

- E_{LIFT} Evacuation Lift
- FF_{LIFT} Firefighter's Lift
- Ventilated Corridor 1
- Ventilated Corridor 2
- 120-mins fire rated wall
- 60-mins fire rated wall
- 30-mins fire rated wall
- 60-mins fire curtain
- Natural Smoke Shaft
- Mechanical Smoke Shaft

OFR
The suitable positions of the mechanical smoke ventilation shaft are subject to the CFD analysis results in the upcoming design stage.

OFR
Lobby doors to open into the common corridor to avoid excessive depressurisation resulting in door opening force exceeding 100n.



OFR
There should be a minimum of 500mm between the lobby wall and the lift door or control panel, whichever is closer.

Key:
 Application Boundary
xx Refer to area schedule

North:



Project:
85 Rochdale Road

Status:
Information

Scale:
1:200 @ A3

Date:
03/03/26

Title:
Proposed 1st to 7th Floor

Drawing No:
243-JMA-B1-01-DR-A-022201

Rev:
P07

Jon Matthews Architects

Union, 2-10 Albert Square, Manchester, M2 6LW
0161 974 3690

Copyright of this drawing is vested in Jon Matthews Architects and must not be copied or reproduced without written consent. Figured dimensions only are to be taken from this drawing. Do not scale from this drawing. For full company disclosure please visit www.jonmatthewsarchitects.com