

An architectural rendering of the Berol Quarter development, featuring a mix of historic and modern architecture. A large, multi-story historic building with arched windows and a flat roof is in the foreground. Behind it, a tall, modern skyscraper with a grid of windows rises into the sky. The scene includes trees, a sidewalk with people, and a street. The entire image is overlaid with a semi-transparent red color.

BEROL QUARTER

Fire Assessment

AESG

BERKELEY SQUARE DEVELOPMENTS

November 2022

Berol Quarter Limited

Berol House

RIBA Stage 2 Fire & Life Safety Strategy



Project Name	Berol House
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1 Introduction

1.1 Key Stakeholders

Table 1: Key Stakeholders

Role	Organisation
Developer/Contractor	Berkeley Square Development
Architects	John McAslan + Partners
Structural Engineer	Heynes Tillott Finch
Fire Consultant	AESG

1.2 Scope of Works

AESG has been assigned by Berkeley Square Development to provide a RIBA Stage 2 Fire & Life Safety Strategy for Berol House in South Tottenham, London. The purpose of this report is to demonstrate that the design achieves the functional requirements of the Building Regulations 2010 as amended in 2018. Other aspects such as property protection, insurance requirements, property evaluation, business continuation protection, etc. are not within the scope of the appointment.

1.3 Statutory Requirements

1.3.1 The Building Regulations 2010

Fire safety in buildings is governed by Part B of Building Regulations (2010, as amended in 2018). To achieve compliance with Part B of Schedule 1 of the Regulations, the following sections have been addressed:

- 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

Approval of the building design will be sought during the Building Regulations application. Responsibility for deciding if the requirements of the Regulations have been met rests with the Building Control body. The Fire Service will also be consulted as part of this process.

1.3.2 Amended Regulations and Guidance regarding External Wall Construction

As of the 21st of December 2018, amendments to the Building Regulations 2010 and the associated changes to the Approved Document B (Fire Safety) and Regulation 7 (Workmanship and Materials) have come into effect. Regulation 7 of the Building Regulations have been amended to require that materials which are part of or within an external wall, balcony or similar must be non-combustible or of limited combustibility (this means European Classification A2-s1, d0 or Class A1, classified in accordance with BS EN 13501-1:2007+A1:2009) for relevant buildings.

1.3.3 Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order (RRO) is a primary piece of legislation relating to fire safety in newly operational and existing non-domestic premises and is enforced by the local fire authority.

It is necessary, among other things, under this order for the owner/occupier of the building to carry out a fire safety risk assessment for the common areas of the building prior to occupation. The assessment shall be repeated periodically or whenever there are any new hazards or changes within the communal areas. The building's management team will also be responsible under this order to ensure that the building's fire safety provisions are appropriately managed, maintained and tested over the whole life of the building.

1.3.4 Construction, Design and Management Regulations 2015

Projects undertaken within the UK are subject to the requirements of the Construction, Design and Management Regulations (CDM).

This report defines the strategy for meeting the functional and performance requirements for fire safety in the finished building. Where any conclusions or recommendations have been arrived at which specify particular materials, products or forms of construction these will have been assessed by others, in accordance with CDM Regulation 9. In the event that these involve significant residual risks or health and safety critical assumptions, this information will be made available to the Principal Designer. Where the architect or other consultants use the standards put forward in this report to specify works, they are understood to be competent in alerting the Client, Principal Designer, Contractor and Building Occupiers of CDM issues.

1.4 Basis of Design

The proposed building will be designed in accordance with the recommendations of BS 9999:2017, Fire safety in the design and use of buildings – Code of practice will be used for all non-residential areas within the buildings. Throughout the report, this document will be referred to as **BS 9999**.



Where the design does not comply with the recommendations of the above-mentioned guidance document, alternative fire engineering solutions will be proposed to demonstrate that the functional requirements of the Building Regulations have been met. Any departures or deviations from standard design guidance will be highlighted within this report for discussion with the statutory authorities.

1.5 Statutory Consultation

During the planning application process, HSE is a statutory consultee that involves or may involve a relevant building.

As part of the planning application to the local planning authority, the planning application will need to show that the following items have been considered:

- Considered fire safety needs relevant to land use planning for the proposed building
- Considered these needs at an early stage
- Incorporated your thinking into your planning application

HSE provides local planning authorities with fire safety input on proposals.

Examples of fire safety needs relevant to land use planning include:

- Site Layout
- Water supplies for fighting fires
- Access for fire services

During the Building Regulations application process, the Building Control body is required to consult with the Fire Authority. The purpose of this consultation is to give the Fire Authority an opportunity to make observations with respect to The Building Regulations 2010 and to provide an opportunity to make the applicant aware of the action that may have to be taken to meet the requirements of the RRO.

If the Fire Authority requires physical changes to be made to the building to meet the requirements of the RRO, the Building Control body has a legal responsibility to pass on all comments and recommendations to the applicant/responsible person. The applicant should take note of all comments and where necessary implement these into the building design.

1.6 Exclusions

The FLS does not:

- Set out to address insurance requirements, risks to business continuity, and property protection. Recommendations or guidance provided for life safety purposes may or may not be beneficial with regard to these issues.

- Address fire precautions during the construction work for which the risk and hazard from fire are often greater.
- Represent a design or specification; it is a series of principle recommendations that others may consider and relate to the design of the building as appropriate.
- Constitute a fire safety management strategy. It is vital that the future building management team understand the principles of the fire strategy to enable them to implement effective management, inspection, training, and maintenance regimes.
- Satisfy the duties of the owner to carry out or instruct a fire risk assessment to inspect fire safety measures on an ongoing basis.
- Represent a handover document. It is vital that an approved fire strategy (including drawings) is provided to the client at handover to represent an 'as-built' status.

1.7 Limitations

Berol House is an existing building as such following limitation has been imposed:

- A survey of the existing structure of the building has not been conducted. As such, AESG recommends that a survey of the existing structural elements should be conducted.
- A survey of the fire strategy of the existing building has not been conducted. As such, AESG recommends that a Fire Strategy survey including compartmentation should be conducted by a competent company/person.
- A survey of the external wall buildup has not been conducted. As such, AESG recommends that an external wall fire review should be conducted.
- Occupancy is limited to 60 people where a single-door exit is provided to a unit, or the unit has access to a single stair. AESG has assumed that all the terraces will be used by the occupants within the building only. As such no additional occupancy has been considered for the terraces.



2 Executive Summary

2.1 Fire and Life Safety Strategy Summary

Table 2 provides a summary of the pertinent fire safety information relevant to the design.

Table 2: Fire Strategy Summary

Item	Summary-Berol House
Occupancy	Commercial Units: Occupants will be unfamiliar with the building layout and awake during occupancy use. Office: Occupants are awake and familiar with the building
Risk profile	Offices A2 Commercial units B3
Height of the building (Measured from fire service access level to the highest occupied floor).	17.6 m
Number of stairs provided	3
Evacuation Strategy	Simultaneous evacuation
Minimum category of fire detection and alarm system	Minimum M category in offices dependent on existing Fire alarm and detection system. L2 Category in retail units and ancillary areas
Active Systems	Dry riser system, natural smoke ventilation and emergency power supplies will be provided.
Other Fire Protection Measures	emergency lighting and emergency signage
Minimum Structural Fire Protection	Minimum elements of structure for Plant and retail units shall be provided with 90 minutes of structural fire protection and the office units should be provided with 60 minutes of structural fire protection as defined by BS 9999 (office without suppression).

Firefighting Provisions	Three protected stairs and 2 dry riser mains.
Additional Provisions for Occupants	Lifts proposed as Evacuation lifts

3 Design Information

3.1 Building Description

Berol House is an existing building that previously operated as a production factory for Berol Pencil. The site is located in the London Borough of Haringey. The design aspiration for Berol House is to re-develop the existing building into a commercial building providing office spaces on the upper floors with retail units on the ground floor as seen in Figure 1 to Figure 6.

The design intent is to extend the building vertically by providing three additional floors. The proposed building will consist of 6 storeys (ground + 5 floors), and it will be provided with three stairs located at the west, centre, and east part of the building in completion, apart from the top occupied floor (level 5) has two stairs.

The height of the building as measured from the fire service access level at the ground floor to the highest occupied floor is approximately 17.6m.

Plant rooms associated with Berol House are located on the ground floor that is accessible directly from the outside.

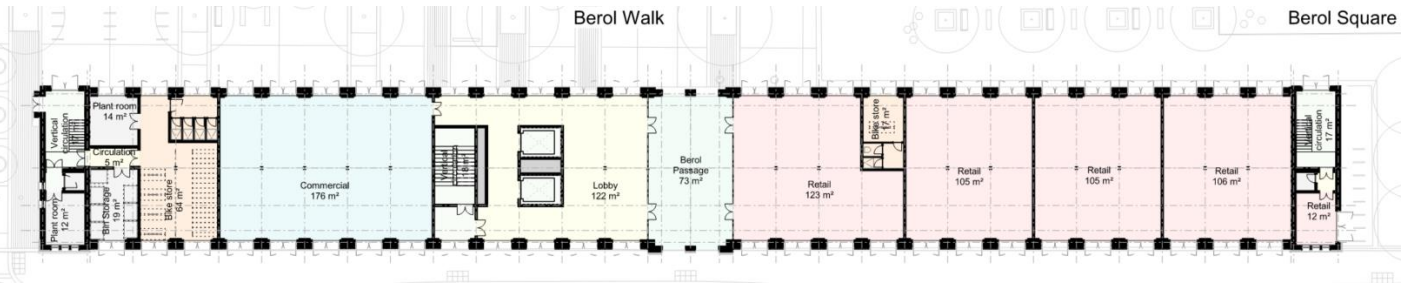


Figure 1- Ground Floor Layout

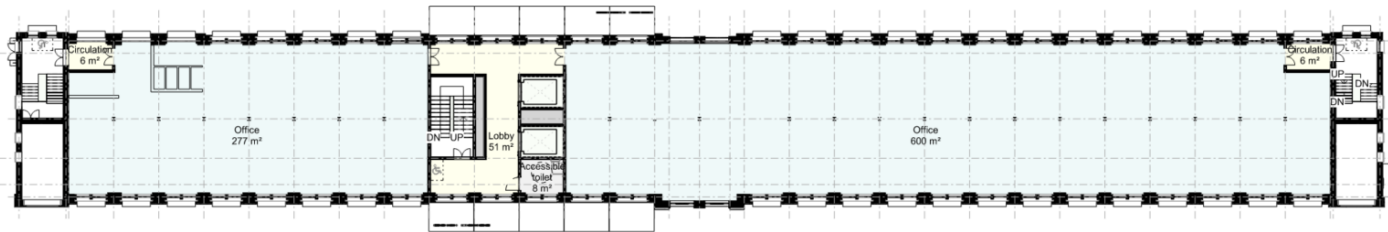


Figure 2 - Floor 1 Layout

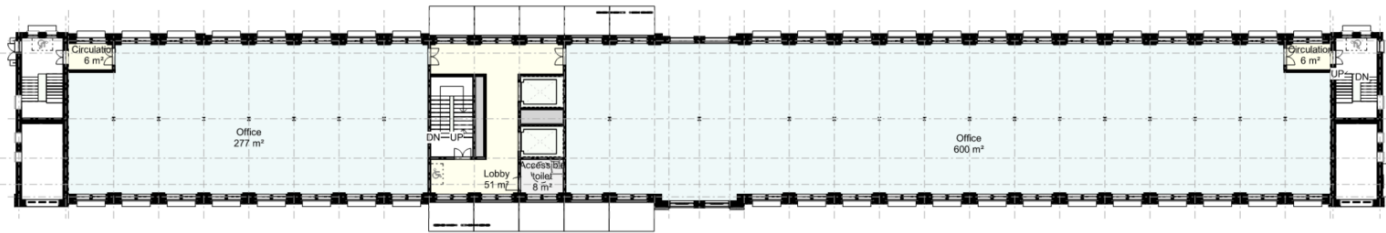


Figure 3- Floor 2 Layout

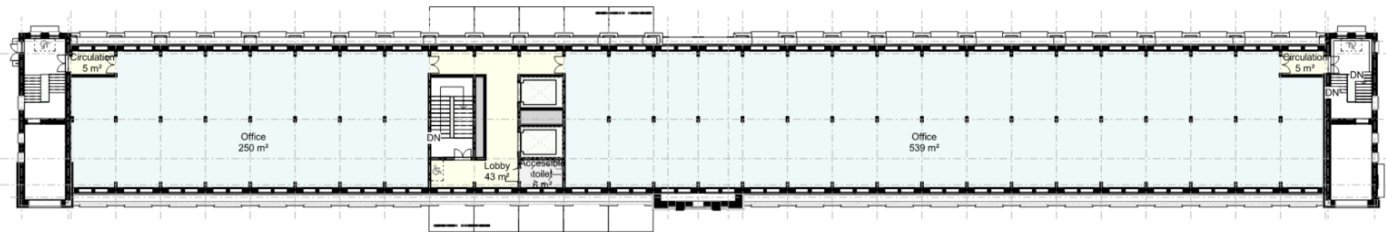


Figure 4- Floor 3 Layout

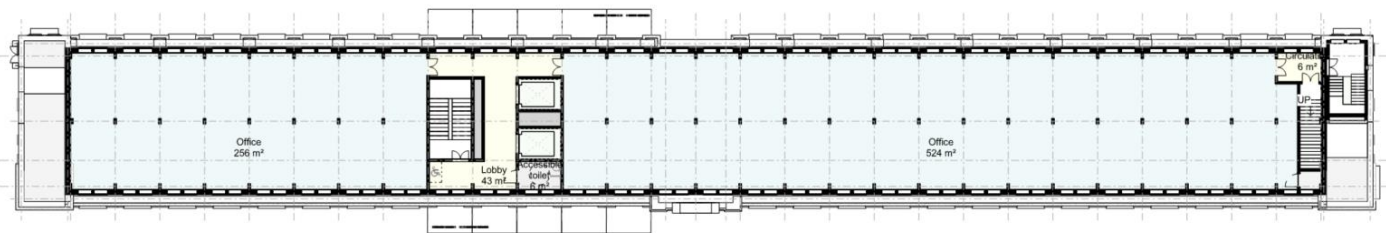


Figure 5- Floor 4 Layout

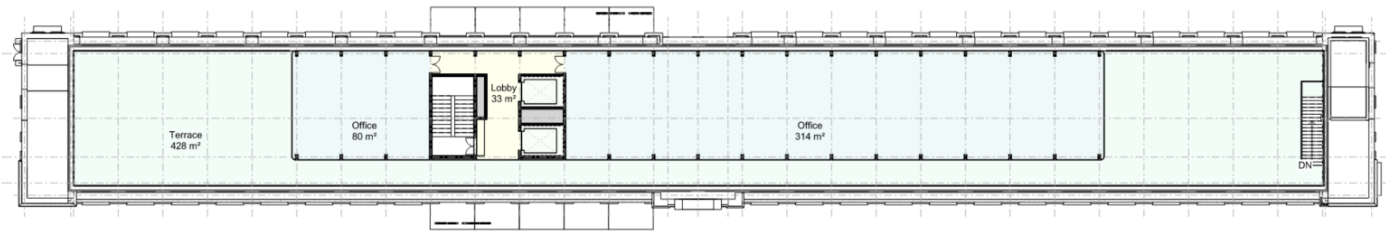


Figure 6- Floor 5 Layout

3.2 Drawing Schedule

AESG has been provided with the drawings listed in Table 3. It is understood that these are the latest set of drawings, accurate at the time this report was written. The Fire and Life Safety strategy has been based on the drawings listed in Table 3.

Table 3: Reference Drawings

Building	Drawing number	Description	Drawing date
Berol House	2042-JMP-XX-00-DR-A-3000	Proposed Level_00	24/10/2022
	2042-JMP-XX-01-DR-A-3001	Proposed Level_01	24/10/2022
	2042-JMP-XX-02-DR-A-3002	Proposed Level_02	24/10/2022
	2042-JMP-XX-03-DR-A-3003	Proposed Level_03	24/10/2022
	2042-JMP-XX-04-DR-A-3004	Proposed Level_04	24/10/2022
	2042-JMP-XX-05-DR-A-3005	Proposed Level_05	24/10/2022
	2042-JMP-XX-06-DR-A-3006	Proposed Level_06	24/10/2022

Note. Any changes to the design will require the Fire and Life Safety strategy to be reviewed.

4 B1 - Means of Warning and Escape

4.1 Risk profiles

In order to establish the minimum package or protection for occupants, BS 9999 uses risk profiles. The risk profiles contained within Berol House are demonstrated in Table 4.

Table 4: Risk Profile

Area	Occupancy Characteristic	Fire Growth Rate ⁽¹⁾	Risk Profile
Office	A – Occupants who are awake and familiar with the building.	2- Medium	A2
Retail units	B – Occupants who are awake and unfamiliar with the building.	3– Fast	B3



Plant Room	A – Occupants who are awake and familiar with the building.	3 or 4– fast to ultra-Fast depends on further assessment	A3 or A4
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4.2 Occupancy Profile

Table 5: Occupancy Profile

Level	Use	Floor Space Factor	Total Occupancy
Fifth	Office	4 m ² /person	99 ^[2]
Fourth	Office	4 m ² /person	195
Third	Office	4 m ² /person	198
Second	Office	4 m ² /person	219
First	Office	4 m ² /person	219
Ground Floor ^[1]	Retail units ^[1]	2 m ² /person	314

Note 1: The retail units, commercial space and plant room are located on the ground level only and occupants can escape to the relative/ultimate point of safety directly on Ashley Road to the south or Berol Walk to the north of the building. They will not escape via the stairs intended for the upper floors. As such, the stair capacity assessment has not taken into account the occupancy within the retail and commercial units on ground level.

Note 2: The travel distances are achieved everywhere, except on the unit on Level 05. AESG has suggested providing a secondary escape door to the terrace. This will allow the occupants to escape via the secondary escape stair provided at the east of the building. Furthermore, if only one escape door is provided, the occupancy should be limited to 60 people.

4.3 Evacuation Strategy

All areas of the building will have a simultaneous evacuation. It is important to note that the retail/commercial areas will not be interlinked with office areas.

4.4 Fire Detection and Alarm Systems

A summary of the fire detection and alarm systems used within the building is displayed in Table 6. If the alarm system in the existing building is a higher specification than category M, then all new areas will be provided with the same category.

Table 6: Detection and Alarm System Summary

Area	System Provided
Office	Category M system
Retail Units	L2
Ancillary Areas	L2

4.5 Horizontal Means of Escape

4.5.1 Travel Distances

Table 8 is a summary of the travel distance limitations of the building in accordance with BS 9999.

Table 7: Travel Distance Limitations

Accommodation	Risk Profile	Maximum Permitted Travel Distance	
		One-way travel	Two-way travel
Office	A2	15 m	37 m
Plant Rooms	A3	12 m	30 m
Plant Rooms	A4	NA	NA
Retail	B3	11m	27 m

4.5.2 Minimum Number of Exits

To facilitate the safe egress of occupants, the building should be provided with a minimum number of exits and escape routes from each room, tier, or storey. These requirements are displayed in Table 8.

Table 8: Minimum Number of Exits

Number of Exits/Escape Routes	Maximum Occupancy
1	1 - 60
2	61 - 600
3	More than 600



4.5.3 Discounting Exits

All the stairs and the associated discharge corridors are lobby protected, as such, no stairs have been discounted for escape.

Where a room/area is provided with a single exit, occupancy is limited to 60 people. Occupants must also be able to travel from the most remote part of the room to the exit within single-direction travel distance limitations.

4.5.4 Minimum Exit Widths

Table 9: Minimum Exit Widths

Area	Minimum clear width
Office	1050 mm ⁽¹⁾
Retail units	850mm ⁽¹⁾⁽²⁾
Ancillary areas	800mm ⁽³⁾

Note.

- (1) 850mm is the minimum clear width to provide an unobstructed route for occupants such as wheelchair users.
- (2) Exit widths may be required to be increased in these areas to accommodate the expected occupancy number.
- (3) It is not anticipated that occupants such as wheelchair users will access these areas.

4.5.5 Exit Width Calculations

To ensure that exits are suitably sized for the number of occupants expected to use them, the following equation will be used:

Required door width = *min. width per person* × *expected occupancy*

A summary of minimum exit widths per person as required in Table 12 of BS 9999, has been displayed in Table 10.

Table 10: Minimum Exit Width Per Person

Risk Profile	Minimum Width Per Person
A2	3.6 mm
A3	4.6 mm

B3	6.0 mm
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4.5.6 Doors Less Than 1050mm Wide

If an escape door has a clear width of less than 1050mm then the following equation should be used to calculate its capacity:

Exit capacity = $\frac{500}{min. width per person}$

4.5.7 Direction of Opening

All storey and final exits should open in the direction of escape. Where a door is hung to swing against the direction of escape the door capacity is limited to 60 people.

4.5.8 Door Fastenings

All doors used as means of escape or final exit must be readily openable without the use of a key at all material times. Doors may be fitted with hardware to allow them to be locked when rooms are empty.

To expedite escape from secure areas, locks may be fitted so that keys are operated from the outside and manually opened from the inside.

Door entry controls should be mounted between 900mm and 1000mm above the finished floor level.

Doors fitted with electronic security locks should be fail-safe and open upon actuation of the fire detection and alarm system within the buildings. Break glass panels will also be provided in case the electronic system fails to disengage the door locks.

4.5.9 Door Threshold

Doorways on escape routes must be provided with accessible thresholds to allow a smooth transition of occupants such as wheelchair users.

4.6 Vertical Means of Escape

4.6.1 Minimum Stair Widths

As shown in Figure 1 to Figure 6 Berol House is provided with three stairs, except for level 04 and 05 which are provided with two stairs at the centre and at the east part of the building as shown in Figure 6. AESG conducted a stair width assessment as such the occupancies at Levels 01 to 05 will be divided within the stairs as shown in Table 11 below.



Table 11: Occupancy Distribution

Level	Total Occupancy on each level	Division of occupancies within stairs		
		West	Centre	East
Level 1	219	35	110	75
Level 2	219	35	110	75
Level 3	198	31	98	67
Level 4	195	-	130	66
Level 5	99	-	58	39
Total Occupancy	930	101	506	322

As such, the minimum stair width is required as per Table 13 of BS 9999 is shown below in Table 12.

Table 12: Minimum Stair Widths

Stair core	No of floor serving	Minimum Width of stairs per person
West	3	3.25 mm
Centre	5	2.45 mm
East	5	2.45 mm

4.6.2 Stair Width Calculations

To ensure that stairs are suitably sized for the number of occupants expected to use them the following equation will be used:

$$\text{Required stair width} = \text{min. width per person} \times \text{expected occupancy}$$

Detailed analysis of the occupancy figures will be completed during RIBA Stage 3 to determine the exact width of stairs within the building. A summary of minimum widths per person has been displayed in Table 13.

Table 13: Minimum Exit Width Per Person

Stair core	No of floor serving	Minimum Width of stair
West	3	325 mm
Centre	5	1236 mm
East	5	788 mm

All the stairs within the building are adequately sized to accommodate the occupancy calculated in Table 11 during simultaneous evacuation. The sizes of the proposed stairs are shown in Table 14 below.

Table 14: Proposed Stair Width Within Berol House

Stair core	Stair Width
West	1200 mm
Centre	1400 mm
East	1200 mm

4.7 Exit From Stair Enclosure

All escape stairs should be provided with a final exit allowing occupants to discharge directly outside the building. Where this has not been provided a protected route must be incorporated into the design. The protected route must continue from the foot of the stair to a final exit elsewhere on the perimeter of the building. The protected route is considered an extension of the stair and must be afforded the same level of protection as the stair itself.

The proposed design of the escape stairs within Berol House discharges directly to a final exit outside of the building.

4.8 Evacuation of Persons with Restricted Mobility

4.8.1 Requirements for Refuges

1 refuge should be provided at each above-ground level within all three stairs. Refuges do not need to be located within the stair enclosure but should enable direct access to the stair.

The number of refuge spaces does not need to equal the number of wheelchair users who may be in the building. A single refuge may be occupied by more than one person during the



evacuation procedure. A risk assessment should be conducted to ascertain if additional refuges are required due to the nature of the occupancy within the building.

Refuges should be a minimum of 900mm x 1400mm in size and accessible by someone in a wheelchair. Where sited in a protected stairway, protected lobby or protected corridor, refuges should not reduce the width of the escape route or obstruct the flow of people escaping.

Refuges should be provided with an emergency voice communication (EVC) system.

4.8.2 Emergency Voice Communication Systems (EVCS)

An emergency voice communication system will provide two-way voice communication between a central control point (location to be confirmed) and outstations (located at each refuge point). Where occupants are required to wait for assistance at refuge points, they must be able to communicate and receive reassurance or instruction. This is used in a fire emergency situation.

Emergency voice communication systems should comply with British Standard 5839-9. It should consist of Type B outstations communicating with a master station adjacent to the fire detection and alarm panel. If this location is impractical, then wireless technology may be more appropriate. Wireless technology falls outside the scope of this fire strategy and should be investigated by a specialist consultant.

4.8.3 Changes in Floor Level

In order to negotiate level changes within a building, suitable ramping may be used as an alternative to stepped access/egress routes. Where a ramp is used the following requirements should be met:

- The gradient of any ramp must not be greater than 1:12.
- An individual flight of ramp must not have a going longer than 10m.
- An individual flight of ramp must not rise above 500mm.
- The ramp should have a minimum width of 1500mm.
- Landings should be provided at the foot and head of a ramp. The landing should be at least as wide as the ramp itself and clear of any obstructions.
- Ramps should be designed and installed in accordance with BS 8300.

4.8.4 Personal Emergency Evacuation Plans (PEEPs)

Wherever possible, personal emergency evacuation plans (PEEPs) should be produced in accordance with BS 9999 for all people requiring assistance to leave the building. Through the recording of PEEP, the management team should be made aware of the amount of staff support required for each evacuation.

Individual PEEP should be created for people who frequently use the premise. This may include staff or regular contractors. Following discussions with an individual, a plan can be developed for their specific needs which should contain details of how they will evacuate the building.

By considering the individual needs of a person, management are able to make reasonable adjustments to the premises or procedures. They are also able to make provision for actions to be taken in the event of a false alarm, or if the person cannot return to the building after a fire.

PEEPs should also be created for infrequent or first-time visitors to the building (this should include maintenance staff). This may include new members of staff or members of the public. Visitors who are likely to require assistance in the event of an evacuation should be encouraged to make themselves known to staff. Management should be encouraged to have staff who are trained in disability awareness.

Staff should be trained so that they are aware of the facilities and their responsibility to evacuate disabled people and know how to use features such as evacuation lifts and refuges (if required). Enough staff should be available at all times to make sure that evacuation plans are viable.

5 Active Systems

5.1 Emergency Lighting

Emergency escape lighting should be provided in the following locations:

- Ancillary accommodation normally accessible to occupants
- Common stairs
- All common escape routes
- Common escape routes across a flat roof/terrace

The emergency lighting system should be designed and installed in accordance with BS 5266-1.

5.2 Emergency Signage

Escape and other fire safety signage should also be provided in accordance with BS ISO 3864-1 and BS 5499-4.

5.3 Emergency Power Supplies

In the event of a failure of the mains power supply, a secondary backup power supply must be provided to feed all life safety systems that require electricity to function as intended. The secondary supply will be appropriate for the life safety system concerned and is recommended to be provided via a separate external substation or via a standby generator. The following systems must be provided with a backup power supply:



- Automatic fire alarm and detection system
- Illuminated emergency signage
- Emergency lighting
- Refuge emergency voice communication systems
- Any other life safety systems.

6 B2 - Internal Fire Spread (Linings)

An internal lining is any product or material used in lining any partition, wall, ceiling or other internal structure. For compliance with the Building Regulations, linings should adequately resist the spread of flame over their surfaces. In addition, if ignited, linings should inhibit the rate of heat release or the rate of fire growth.

6.1 Classification of Linings

The surface linings of walls and ceilings should meet the classifications displayed in Table 15.

Table 15: Classification of Linings

Location	National Classification	European Classification
A small room of area not exceeding 4m ² in a residential building and 30m ² in a non-residential building.	3	D-s3, d2
Other rooms (including garages)	1	C-s3, d2
Circulation spaces within dwellings	1	C-s3, d2
Other circulation spaces including common areas of the office	0 ⁽¹⁾	B-s3, d2

Note.

⁽¹⁾ Class 0 is not identified in any BS test standard. A Class 0 product is considered to be either of the following:

- Composed throughout of materials of limited combustibility.

- A material having a Class 1 surface spread of flame, and which has a fire propagation index (I) of not more than 12 and a sub-index (i1) of not more than 6. The fire propagation index is established by reference to the method specified in BS 476-6.

Parts of walls in rooms may be of lower performance than those displayed in Table 15, but no worse than class D-s3, d2.

7 B3 – Internal Fire Spread (Structure)

7.1 Elements of Structure

Elements of structure include, but are not limited to, the primary structural frame and load-bearing walls and floors. Any elements of structure that support the roof only need not be fire protected, unless supporting life safety equipment, providing structural stability to the building, or its failure could lead to progressive collapse.

BS 9999 states the required fire resistance of structural elements of the building. This value is based on the height of the highest occupied floor and whether the building is sprinklered or not. The requirements for structural fire resistance are displayed in Table 16.

Table 16: Minimum Period of Fire Resistance for Elements of Structure

Building	Height to top occupied storey	The minimum period of fire resistance
Berol House	17.6 m	Minimum Elements of structure for risk profiles A3 or A4 shall be provided with 90-minute structural fire protection and areas with risk profiles A2 and B3 should be provided with 60 minutes of structural fire protection, as defined by BS 9999 (office without suppression).

7.2 Materials Classification for Construction of Common Stairs

In accordance with BS 9999, flights and landings of common stairs should be constructed of Class A2-s3, d2 or better materials as all proposed buildings are above 18m in height from ground level.



7.2.1 Compartment Floors

Compartmentation of the upper floors will be reviewed based on the external wall assessment and the design aspiration of the design team.

The plant room and retail units are located only at the ground level, as such, these will be separated from the upper floors by 90 minutes of fire-resistance construction. However, MEP Engineers must be consulted to confirm the use of the Plant Rooms and any anticipated future use to make a final decision.

7.2.2 Compartmentation Walls

All of the following should be provided with compartment walls:

- Any wall separating offices should have at least 60 minutes of fire resistance.
- Any wall separating retail units should have at least 90 minutes of fire resistance.

7.2.3 Service Penetrations

All service risers/ducts must achieve the same level of fire resistance as the element through which they pass.

7.3 Fire Doors

All fire doors within the building will be provided in accordance with BS 9999. Each door shall be tested and achieve the appropriate performance as stated in BS 476-22.

Where a fire door to a service riser opens into a common corridor, or if it opens into a stair enclosure, the fire doors will be provided with smoke seals (BS 476-31) as an additional measure to protect the escape route. A schedule for fire doors within the building is shown in Table 17.

7.4 Fire Resistance Summary

Table 17 provides a summary of the requirements for fire-resistant construction and fire doors within Berol House.

Table 17: Fire Resistance and Fire Door Summary

Location	Fire Resistance	Fire Door Type
Compartment Floors separating Ground Floor and Upper Office Floors	REI 90 minutes	N/A

Compartment Floor (Level 01- Level 05) ^[3]	REI 60 minutes	N/A
Lift Shaft	REI 60 minutes	FD30
Construction separating offices	REI 60 minutes	N/A
Stair Enclosure	REI 60 minutes	FD 30 S

Note 3: Compartmentation of the upper floors will be reviewed based on the external wall assessment and the design aspiration of the design team.

7.4.1 Concealed spaces

Cavity barriers must be installed in all cavities/voids to prevent the potential for extensive unseen fire spread within these areas. Cavity barriers and fire stopping should be installed in accordance with Figure 7.

The key areas that will be provided with cavity barriers are as follows:

- At the junction between a cavity wall and every compartment floor, compartment wall, or other wall or door assembly that forms a fire-resisting barrier.
- In protected escape routes, above and below any fire-resisting construction that is not carried full storey height.
- At the edges of any external wall cavities (including around openings, i.e., windows).
- Within extensive cavities that exceed the distances set out in Table 18.

Table 18: Maximum Dimensions of Cavities

Location	Class of surface exposed in the cavity	Maximum dimension in any direction
Between roof and ceiling	Any class	20m
Any other cavity	C-s3, d2	20m
	Any class	10m

The cavity barriers will provide a 30-minute fire rating (i.e. 30 minutes integrity and 15 minutes insulation). Any penetrations through the cavity barriers will be either:

- Fitted with a proprietary sealing system.
- Pipes of limited diameters that are sealed with fire-stopping or sealed with sleeving of
 - non-combustible pipe material.



The provisions in Table 18 do not apply to any cavity described below:

- In a wall which should be fire-resisting only because it is load bearing.
- In a masonry or concrete external cavity wall (two leaves of brick or concrete each at least 75mm thick, cavity closed around gaps and to close of edges of cavities).
- Formed behind the external skin of an external cladding system with a masonry or concrete inner leaf at least 75mm thick, or by over-cladding an existing masonry (or concrete) external wall, or an existing concrete roof, provided that the cavity does not contain combustible insulation and the building is not put to a residential or institutional use.
- Between double-skinned corrugated or profiled insulated roof sheeting, if the sheeting is a material of limited combustibility and both surfaces of the insulating layer have a surface spread of flame at least Class C-s3, d2 or better and make contact with the inner and outer skins of cladding.
- In any floor or roof cavity above a fire-resisting ceiling (at least 30 minutes FR) which extends throughout the building or compartment, subject to a 30m limit on the extent of the cavity.
- Below a floor next to the ground or oversite concrete, if the cavity is less than 1000mm in height or if the cavity is not normally accessible by persons unless there are openings in the floor such that it is possible for combustibles to accumulate in the cavity (in which case cavity barriers should be provided and access should be provided to the cavity for cleaning).
- Cavities that specifically protected by a sprinkler system in accordance with BS EN 12845.

Where a single room exceeds 20m in any direction, cavity barriers within the ceiling void and/or floor void need only to be placed on the line of enclosing walls/partitions of any room and where services penetrate any fire-resisting floors to avoid vertical and horizontal voids meeting, provided that:

- The cavity barriers are no more than 40m apart; and
- The surface of the material/product exposed in the cavity being Class C-s3, d2 or better.

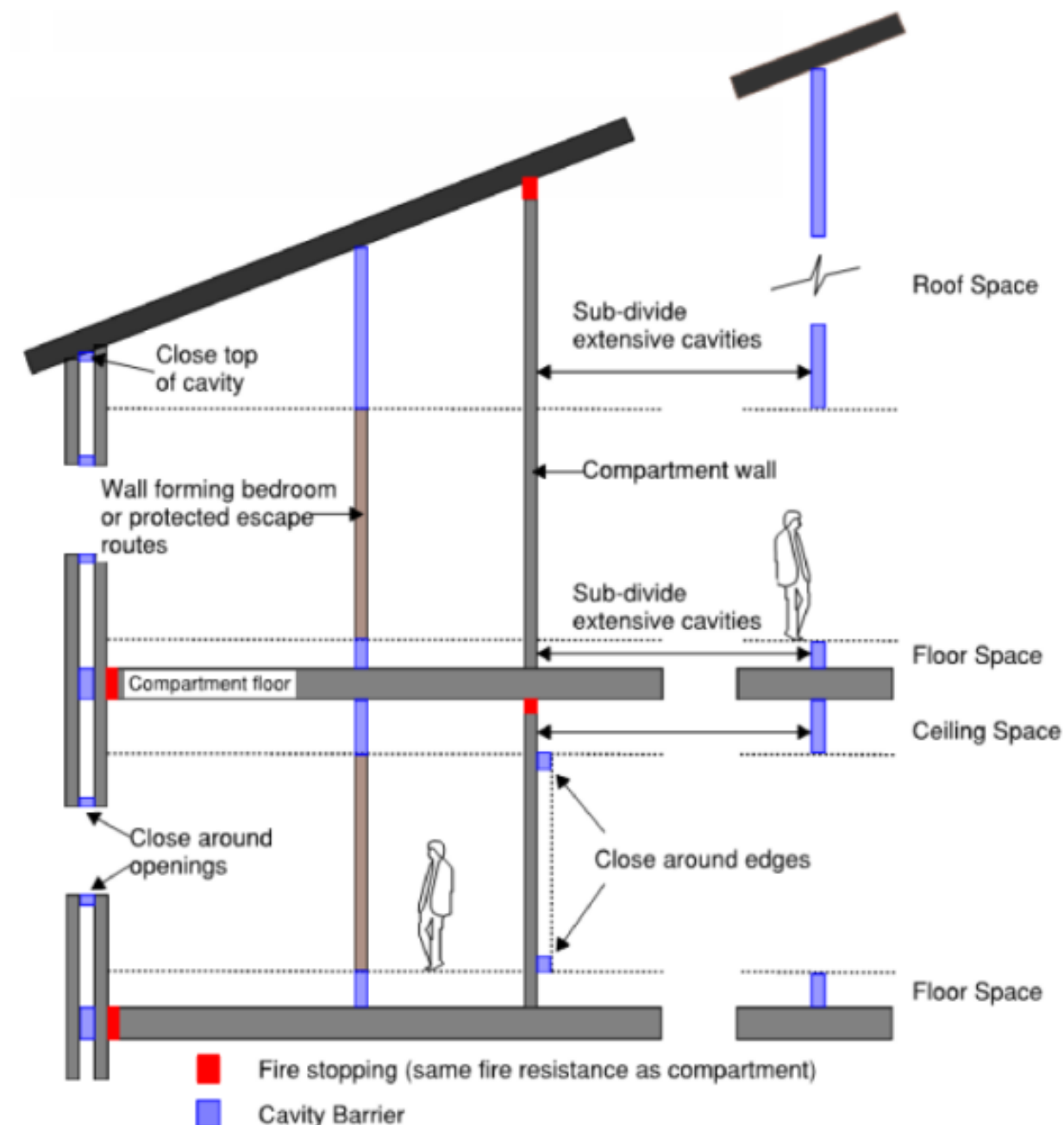


Figure 7: Provisions For Cavity Barriers

7.4.2 Protection of openings and fire stopping

Any openings for services that breach compartment/firewalls need to be fire-stopped unless protected throughout their entire length with fire-resisting material. This is to prevent the passage of fire and assist in retarding the movement of smoke.

Pipes that pass through a fire-separating element should meet one of the following provisions:



- **Proprietary Seals** – Provide a proprietary sealing system which has been shown by test to maintain the fire resistance of the wall, floor or cavity barrier.
- **Restricted Pipe Diameter** – Where a proprietary sealing system is not used, fire stopping may be used around the pipe, keeping the opening as small as possible. The nominal internal diameter of the pipe should not be more than the relevant dimension given in Table 19.
- **Sleeving** – A pipe of lead, aluminium, aluminium alloy, fibre-cement or uPVC, with a maximum nominal internal diameter of 160mm, may be used with a sleeving of non-combustible pipe. The opening in the structure should be as small as possible and provide fire stopping between the pipe and the structure. The sleeve should extend no less than 1000mm on either side of the structure as indicated in Figure 8.

Joints between elements of structures that serve as barriers to fire will be fire-stopped to prevent the passage of fire and smoke.

It is also proposed that all existing penetrations will be assessed, and remedial works undertaken to ensure any penetrations through compartment floors or fire-resistant construction are appropriately stopped.

Table 19: Permitted Pipe Penetration Details

Situation ^{A)}	Maximum nominal internal diameter (mm)		
	Class A1 materials ^{B)}	Lead, aluminium, aluminium alloy, PVC ^{C)} , fibre-cement	Any other material
Structure (but not a wall separating buildings) enclosing a protected shaft which is not a staircase or a lift shaft	160	110	All diameters
Compartment wall or compartment floor between offices	160	160 (stack pipe) ^{D)} 110 (branch pipe) ^{D)}	All diameters
Any other situation	160	40	All diameters

^{A)} The diameters given for pipes of material b) used in situation 2) assume that the pipes are part of an above-ground drainage system and are enclosed as shown in Draft BS 9999. If they are not, the smaller diameter given in situation 3) should be used.

- ^{B)} A class A1 material (such as cast iron or steel) which, if exposed to a temperature of 800 °C, will not soften or fracture to the extent that flame or hot gas will pass through the wall of the pipe.
- ^{C)} uPVC pipes conforming to BS 4514 and uPVC pipes conforming to BS EN 1329-1. Products of any diameter that fall within the scope of BS EN 1366-3 should be fire-stopped.
- ^{D)} These diameters are only in relation to pipes forming part of an above-ground drainage system and enclosed as shown in Draft BS 9991 Figure 40. In other cases, the maximum diameters against situation 3) apply.

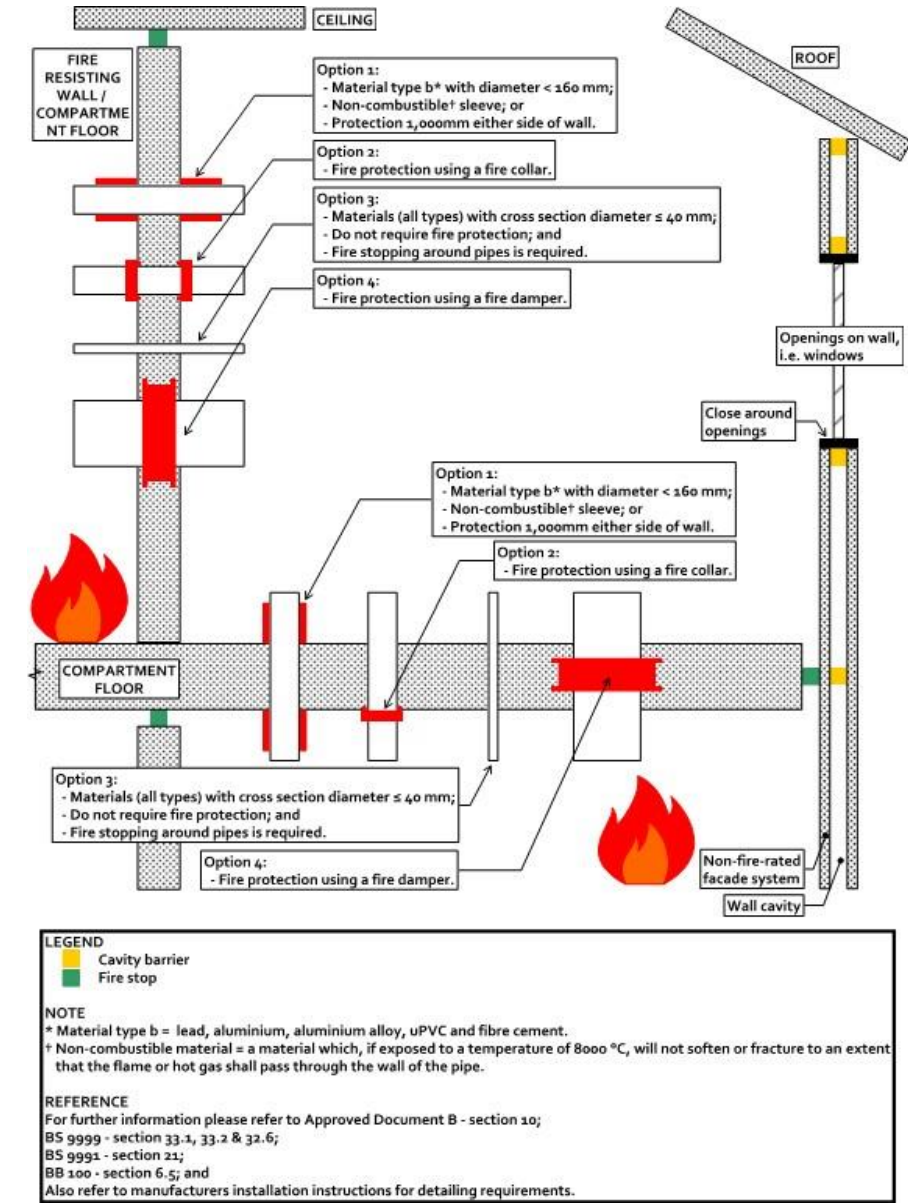


Figure 8: Fire Stopping Details



8 B4 - External Fire Spread

8.1 External Wall Construction

The external envelope of a building should not provide the medium for fire spread if it is likely to be a risk to health or safety. The use of combustible materials in the cladding system and extensive cavities may present such a risk.

8.1.1 Definition of External Wall and Specified Attachments

The external wall of a building includes the following:

- Anything located within any space forming part of the wall.
- Any decoration or other finish applied to any external (but not internal) surface forming part of the wall.
- Any windows and doors in the wall.
- Any part of a roof pitched at an angle of more than 70 degrees to the horizontal if that part of the roof adjoins a space within the building to which persons have access, but are not accessible only to carry out repairs or maintenance.

Specified attachment means;

- A balcony is attached to an external wall.
- A device for reducing heat gain within a building by deflecting sunlight which is attached to an external wall.
- A solar panel is attached to an external wall.

8.2 Fire Spread Between Buildings

BS 9999 states that there are 2 basic methods of fire spread between buildings, direct flame impingement and heat radiation. For buildings within 1000mm of the relevant boundary direct flame impingement is the main mechanism of fire spread. Beyond this distance radiated heat is the main mechanism of fire spread.

To reduce the risk of external fire spread from one building to another, the amount of unprotected area that is allowed on an elevation may be limited, depending on the boundary distance.

AESG will use the 'enclosing rectangle' methodology described in BR 187 - External Fire Spread: Building separation and boundary distance to calculate the maximum percentage of the unprotected area permitted within each elevation.

8.3 Roof Coverings

Roof coverings should achieve the classification requirements set out in Table 36 of BS 9999. Table 20 of this report has summarised these requirements.

Table 20: Roof Covering Requirements

Designation of Covering of Roof or Part of Roof	Minimum Distance from any Point to the Relevant Boundary			
European Class	Less than 6 m	At least 6m	At least 12m	At least 20m
B _{ROOF} (t4)	Acceptable	Acceptable	Acceptable	Acceptable
C _{ROOF} (t4)	Not Acceptable	Acceptable	Acceptable	Acceptable
D _{ROOF} (t4)	Not Acceptable	Acceptable ⁽¹⁾⁽²⁾	Acceptable ⁽¹⁾	Acceptable
E _{ROOF} (t4)	Not Acceptable	Acceptable ⁽²⁾	Acceptable	Acceptable
F _{ROOF} (t4)	Not Acceptable	Not Acceptable	Not Acceptable	Acceptable ⁽²⁾

Note.

⁽¹⁾ Not acceptable on any of the following buildings:

- occupancy characteristic A;
- buildings with a volume of more than 1500m³.

⁽²⁾ Acceptable on buildings not listed in footnote ⁽¹⁾, if part of the roof is no more than 3 m² in the area and is at least 1.5m from any similar part, with the roof between the parts covered with a material of limited combustibility.

9 B5 - Access & Facilities for the Fire Service

9.1 Fire Appliance Access

The site is located on Ashley Road, which the Fire Service appliances can access. The access route for Fire Service appliances must conform to the size and load requirements set out in Table 21.



Table 21: Fire Appliance Roadway Requirements

Appliance type	Minimum width of road between kerbs (m)	Minimum width of gateways (m)	Minimum turning circle between kerbs (m)	Minimum turning circle between walls (m)	Minimum clearance height (m)	Minimum carrying capacity (tonnes)
Pump	3.7	3.1	16.8	19.2	3.7	12.5
High Reach	3.7	3.1	26.0	29.0	4.0	17.0

Access should prevent a fire service vehicle needing to reverse more than 20m to manoeuvre. To comply with this requirement appropriate turning circles and/or hammerhead turns will be provided if necessary.

9.1.1 Firefighting Stair

All three stairs are protected stairways. The centre and east stair way will include a dry riser main.

9.1.2 Rising Fire Main

Berol House is accessed from Ashley Road. Access should be provided to allow a Fire Service pumping appliance to within 18m of, and within sight of, a suitable entrance giving access to the fire main.

The dry riser requirement will be dominated by hose laying distance. According to the requirement within BS 9999, for a non-sprinkler building, the maximum hose laying distance is 45m from a fire main outlet.

As such, two dry risers will be required within the stair enclosure at the centre and at the east of the building. The dry-rising fire main inlets shall be positioned at the façade of the building and the outlets shall be located at each landing of both stairs.

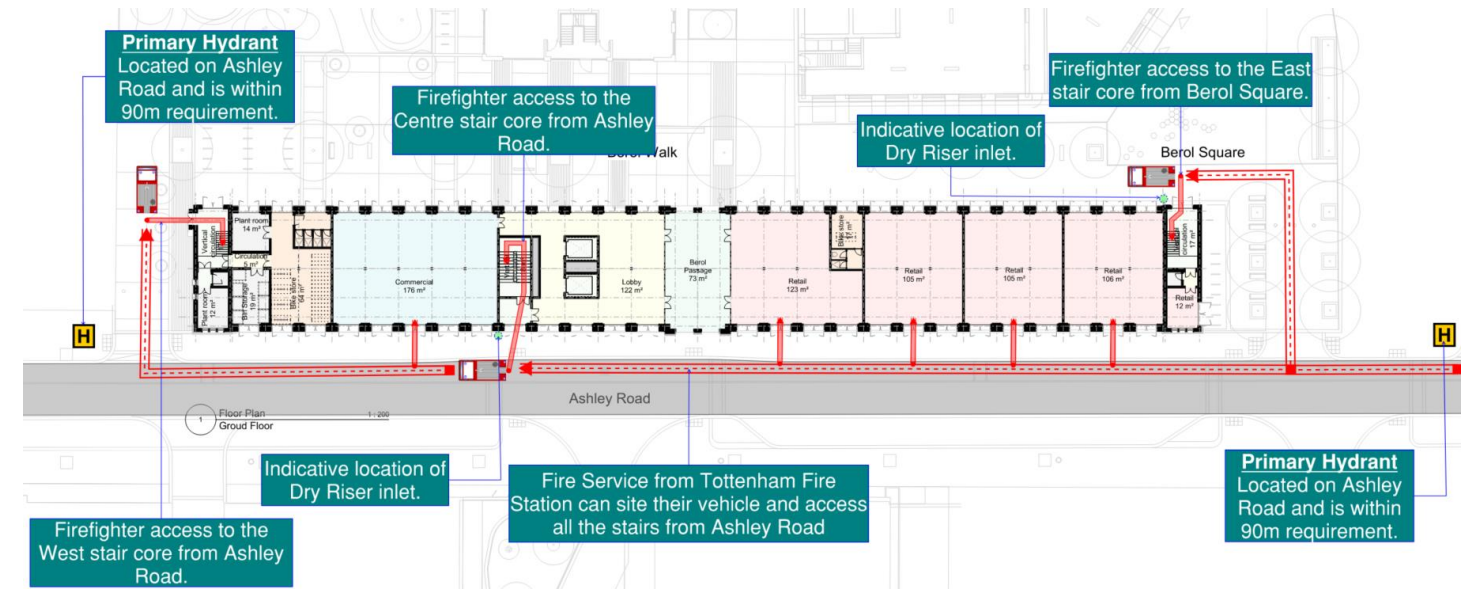


Figure 9: Proposed Fire Service Access – Berol House

9.2 Hose Length Coverage

The building will be designed so that Fire Service personnel can reach all parts of a qualifying storey within 45m. This distance is measured from the rising main outlet to the most remote part of that floor on a route suitable for laying the hose.

9.3 Fire Hydrants

Hydrants should be provided within 90m of the dry main inlet on a route suitable for laying the hose. The existing fire hydrants are located on Ashley Road at the east and west end of the building. This is within 90 m and therefore additional hydrants are not required.

9.4 Information for the fire and rescue service

It is a considerable advantage for the fire and rescue service to be provided with information about the building on arrival at the site. All buildings should be provided with an emergency pack in accordance with BS 9999 Section 44. Therefore, the building should be provided with an emergency pack (Plans box).

Typical types of premises information boxes should include:

- fire and rescue service contingency plan for the building (this is usually provided by the fire and rescue service);
- simple floor plan layouts, indicating any relevant fire resistance provisions, internal access provisions, fire-fighting facilities, building services and any specific hazards;



- any relevant information (including operating instructions) relating to equipment/fixed installations provided for means of escape or firefighting;
- the implications of any fire engineering strategy on the performance of the building during a fire, e.g. reduced fire resistance of elements of structure or areas of the building with additional fire protection measures;
- information relevant to preventing environmental damage;
- information relevant to mitigating loss and assisting salvage operations.

If a 'plans box' is used to store this information on site, a photo-luminescent identification sign should be provided to the other face of the box door. The sign should remain prominent so that if the building's lighting fails, the location of the box is still visible. If a 'plans box' is not used, then appropriate method should be applied to ensure the documents are clearly identifiable upon the arrival of the fire and rescue service.

10 Fire Safety Management

10.1 Management Requirements

Effective arrangements should be put in place to manage all aspects of fire safety in the premises and the details of those arrangements need to be recorded, e.g., within a fire safety management plan. The arrangements should include the following key areas:

- Development of a suitable emergency procedure;
- Maintenance contracts for essential fire safety systems and equipment;
- Schedule of in-house checks and tests;
- Display of appropriate fire safety notices and signs;
- Communications arrangements;
- Liaison with the fire service;
- Fire prevention, including control of works on site (e.g., hot work permits);
- Contingency plans;
- Management of bicycle rack space at Ground Floor to ensure it is only used for storage of bicycles.

Note: The above list is not intended to be exhaustive, only to highlight some key areas.

10.2 Management co-ordination and responsibility

The building is split into separate tenancies. As such, it is important that a holistic approach is taken towards the requirements of the fire management strategy for the building.

Overall control is afforded to the building manager who must ensure that the responsible person for each tenancy is adequately informed of their roles and responsibilities. This includes, but is not limited to:

- Adequate numbers of trained staff.
- Adequate internal procedures relating to fire safety.
- Adequate training.
- Awareness of actions taken within the building in the event of a fire.
- Responsibility to advise building management on changes to items which may affect fire and life safety (occupancy numbers, vulnerable people, increased hazards etc.).

10.3 Portable Fire Extinguishers

Portable fire extinguishers are not a requirement under the Building Regulations and need only be provided within the building based on the end-user requirements and the Fire Risk Assessment undertaken as part of the RRO requirements. If required, portable fire extinguishers should be of specified types and in specific locations as per BS 5306-8.

10.4 Fire Safety Manual

A Fire Safety Manual should be created to contain design information and operational records. The design information forms the basis of an ongoing history document to which additional material is added when the building is occupied and at regular intervals thereafter. The fire safety manual should:

- Provide a full description of the assumptions and philosophies that led to the fire safety design, including explicit assumptions regarding the management of the building, housekeeping and other management functions;
- Provide the nature of the fire safety planning, construction and systems designed into the building, and their relationship to the overall safety and evacuation management;
- Provide documentation produced at the design stage to describe the use of the various protection systems in each type of incident and the responsibilities of the staff;
- Provide a continuously updated record of all aspects of the building and the building users that affect its fire safety.



10.5 Regulation 38

To satisfy Regulation 38 of the Building Regulations a full package of building design information will be passed to the end user including the following relevant information:

- This fire strategy report;
- Any management information proposed in addition to that contained in this strategy;
- Details of all passive fire safety measures (including compartmentation, cavity barriers, fire doors, self-closers, and duct dampers);
- Details of the fire alarm and detection systems, emergency lighting, emergency signage, access controls, door hold open devices;
- Details of all active fire safety measures including the smoke control system design, mode of operation and control systems; (where applicable)
- Details of the dry risers and fire hydrants;
- Any high-risk rooms and equipment present;
- As built plans for the building;
- Fire strategy drawings of every floor level within the building;
- O&M Manuals for the building systems, including commissioning information and certification.

This information will be transferred as a package of information by the main contractor at handover of the building.

11 Conclusion

This fire strategy report sets out the basic design principles for Berol House. Once the design principles set in this report are followed, design of the building will comply with Building Regulations 2010 as amended in 2018.



APPENDIX - A

FIRE STRATEGY DRAWINGS

GBA by Level	area
Level 0	1178 m²
GIA by Level	Area
Level 0	1075 m²
NIA by use	Area
Level 0	
Bike Store	81 m²
Circulation	7 m²
Commercial	176 m²
External area	73 m²
Lobby	122 m²
Plant room	29 m²
Refuse collection	19 m²
Retail	450 m²
Vertical circulation	76 m²
	1033 m²

Project Logo

Notes
Do not scale from this drawing.
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All dimensions are in millimeters unless noted otherwise.

Rev	Date	Description	Drawn	Checked
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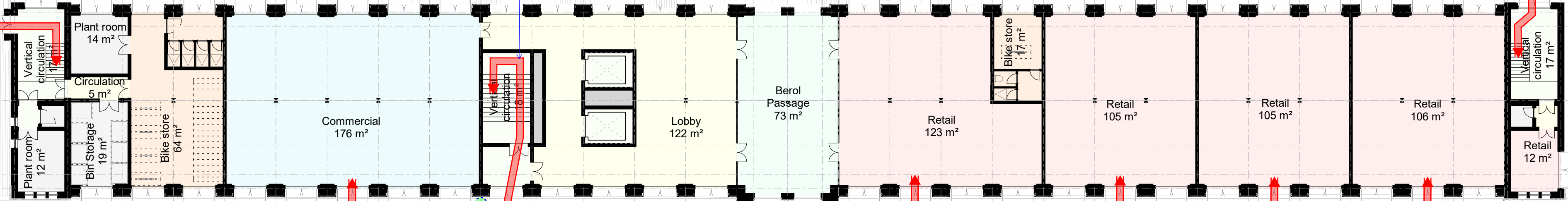
Primary Hydrant
Located on Ashley Road and is within 90m requirement.

Firefighter access to the Centre stair core from Ashley Road.

Firefighter access to the East stair core from Berol Square.

Indicative location of Dry Riser inlet.

Berol Square



Indicative location of Dry Riser inlet.

Fire Service from Tottenham Fire Station can site their vehicle and access all the stairs from Ashley Road

Primary Hydrant
Located on Ashley Road and is within 90m requirement.

Firefighter access to the West stair core from Ashley Road.

Key Plan

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Berol House

proposed_level 00

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Date:	24/10/22	Drawing:	JMP
Status:		Checked:	JMP
Drawing No:	2042-JMP-XX-00-DR-A-3000	Revision:	

GBA by Level	area
Level 0	1178 m²
GIA by Level	Area
Level 0	1075 m²

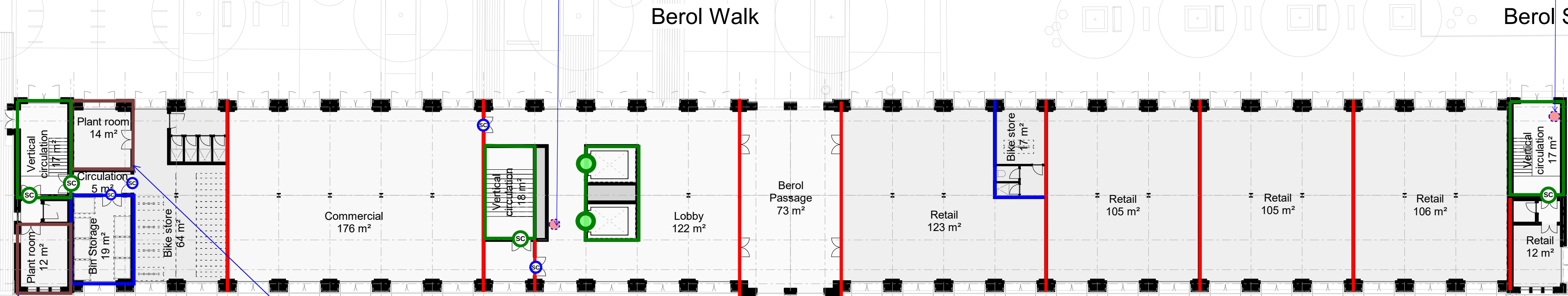
NIA by use	Area
Level 0	
Bike Store	81 m²
Circulation	7 m²
Commercial	176 m²
External area	73 m²
Lobby	122 m²
Plant room	29 m²
Refuse collection	19 m²
Retail	450 m²
Vertical circulation	76 m²
	1033 m²

ANNOTATION	DESCRIPTION
	60 Minutes Fire Resistant Construction for Protected Stair Enclosure and Lift Shaft
	90 Minutes Fire Resistant Construction separating the units on GF
	60 Minutes Fire Resistant Construction for Corridor
	FD 30 S Fire Door (Smoke Seal) + Self Closure for Protected Stair Enclosure
	FD 30 Fire Door for Lift Enclosure
	FD 30 S Fire Door (Smoke Seal) + Self Closer

Project Logo
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Rev Date Description Drawn Checked

Indicative location of Dry riser main outlet at the center.

Indicative location of Dry riser main outlet at the east.



1 Floor Plan
Groud Floor

Based on the Risk Profile of A3 for the Plant room, they are required to have a minimum fire rating of 90 minutes by BS9999. However, MEP Engineers must be consulted to confirm the use of the Plant Rooms and any anticipated future use to make a final decision.

Key Plan

JOHN McASLAN + PARTNERS

Architect

Landscape

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Berol House

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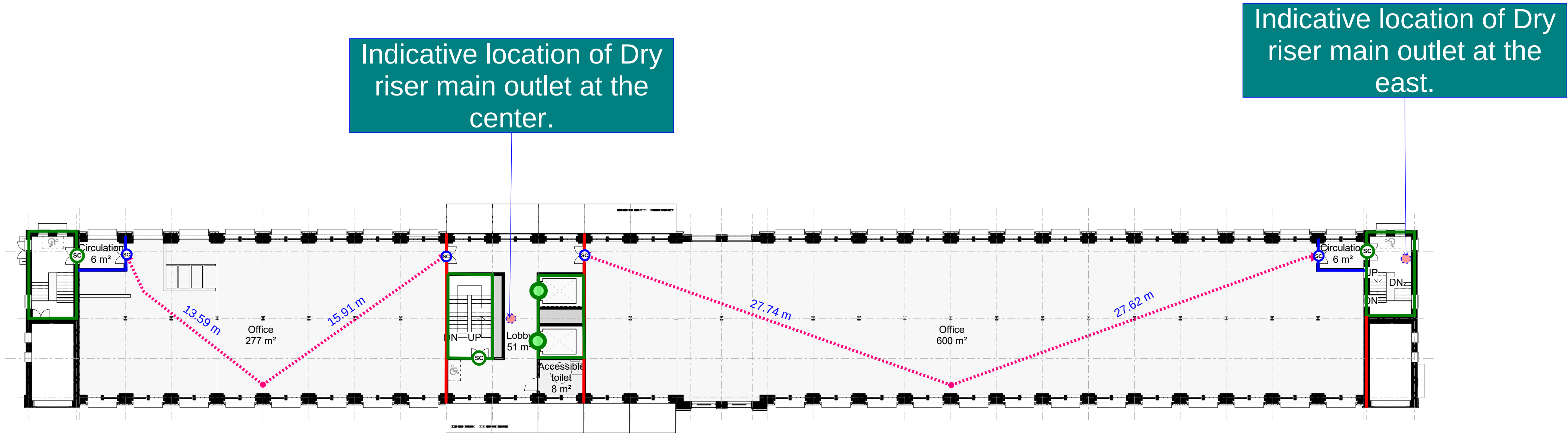
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GBA by Level	area
Level 1	1159 m²
GIA by Level	Area
Level 1	1052 m²
NIA by use	Area
Level 1	
Circulation	12 m²
Lobby	51 m²
Office	877 m²
Toilet	8 m²
Vertical circulation	35 m²
	982 m²
Level M1	
Circulation	4 m²
Plant room	4 m²
Toilet	24 m²
	31 m²

ANNOTATION	DESCRIPTION
	60 Minutes Fire Resistant Construction for Protected Stair Enclosure and Lift Shaft
	60 Minutes Fire Resistant Construction
	60 Minutes Fire Resistant Construction for Corridor
SC	FD 30 S Fire Door (Smoke Seal) + Self Closure for Protected Stair Enclosure
	FD 30 Fire Door for Lift Enclosure
SC	FD 30 S Fire Door (Smoke Seal) + Self Closer

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1 Floor Plan
First Floor
1 : 200



2 Floor Plan
Gable mezzanine level 01
1 : 200

Key Plan

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Landscape

Berol House

proposed_level 01

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Drawing No:	2042-JMP-XX-01-DR-A-3001	Revision:	

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GBA by Level	area
Level 2	1159 m²

GIA by Level	Area
Level 2	1052 m²

NIA by use	Area
Level 2	
Circulation	12 m²
Lobby	51 m²
Office	877 m²
Toilet	8 m²
Vertical circulation	35 m²
	982 m²

Level M2	
Circulation	4 m²
Plant room	4 m²
Toilet	24 m²
	31 m²

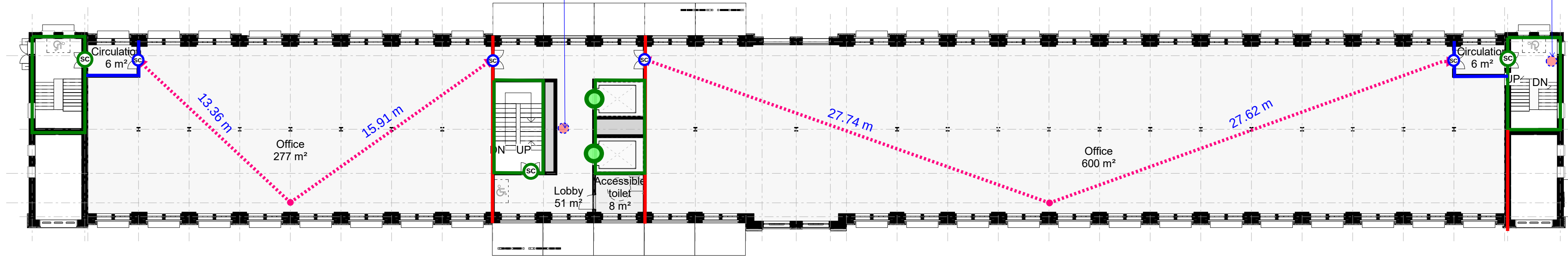
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	FD 30 S Fire Door (Smoke Seal) + Self Closure for Protected Stair Enclosure
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	FD 30 S Fire Door (Smoke Seal) + Self Closer

Project Logo				
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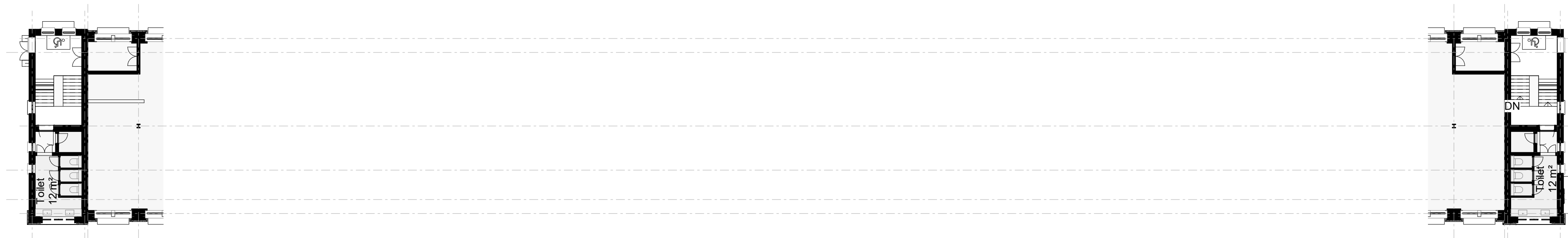
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Indicative location of Dry riser main outlet at the center.

Indicative location of Dry riser main outlet at the east.



1 Floor Plan
Floor 02
1 : 200



2 Floor Plan
Gable mezzanine level 02
1 : 200

Key Plan				
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Date:	24/10/22	Drawing:	JMP	
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Drawing No:	2042-JMP-XX-02-DR-A-3002		Revision:	

GBA by Level	area
Level 3	1061 m²
GlA by Level	Area
Level 3	960 m²
NIA by use	Area
Level 3	
Circulation	54 m²
Office	788 m²
Toilet	6 m²
Vertical circulation	35 m²
	883 m²

Level M3	
Circulation	4 m²
Plant room	4 m²
Toilet	24 m²
	31 m²

ANNOTATION	DESCRIPTION
	60 Minutes Fire Resistant Construction for Protected Stair Enclosure and Lift Shaft
	60 Minutes Fire Resistant Construction
	60 Minutes Fire Resistant Construction for Corridor
	FD 30 S Fire Door (Smoke Seal) + Self Closure for Protected Stair Enclosure
	FD 30 Fire Door for Lift Enclosure
	FD 30 S Fire Door (Smoke Seal) + Self Closer

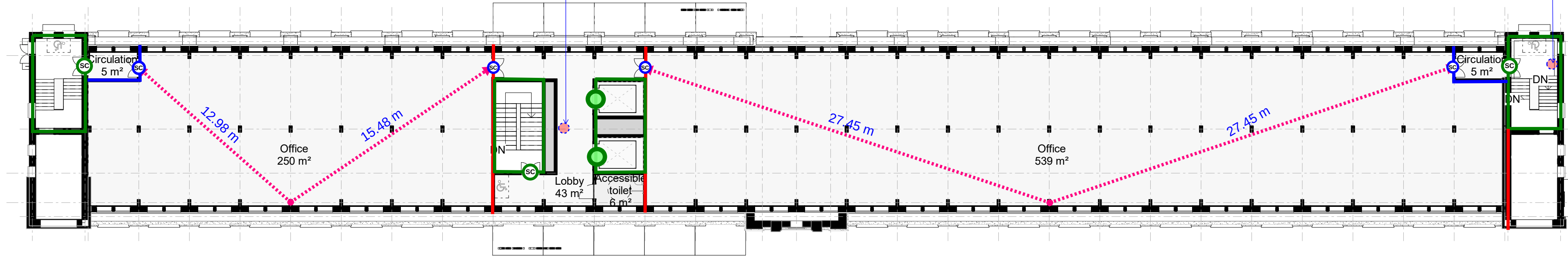
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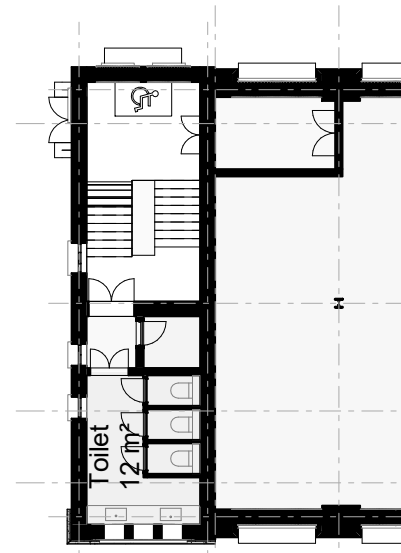
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Indicative location of Dry riser main outlet at the center.

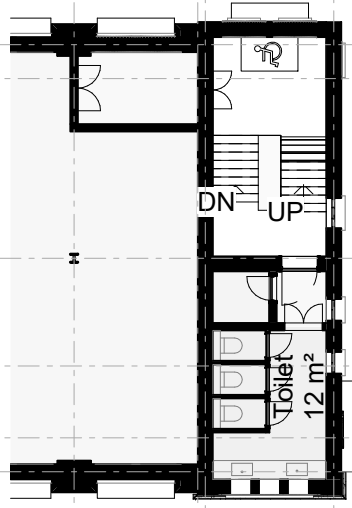
Indicative location of Dry riser main outlet at the east.



1 Floor Plan
Floor 03
1 : 200



2 Floor Plan
Gable mezzanine level 03
1 : 200



Key Plan

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Berol House			
proposed_level 03			
Scale at A1:	1 : 200	Job Number:	2042
Date:	24/10/22	Drawing:	JMP
Status:	Checked:	Checked:	JMP
Drawing No:	2042-JMP-XX-03-DR-A-3003	Revision:	

GBA by Level

area

Level 3

1061 m²

GIA by Level

Area

Level 4

898 m²

NIA by use

Area

Level 4

Circulation

6 m²

Lobby

43 m²

Office

780 m²

Plant room

2 m²

Toilet

6 m²

Level M4

838 m²

Circulation

4 m²

Plant room

28 m²

31 m²

ANNOTATION



60 Minutes Fire Resistant Construction for Protected Stair Enclosure and Lift Shaft



60 Minutes Fire Resistant Construction



60 Minutes Fire Resistant Construction for Corridor



FD 30 S Fire Door (Smoke Seal) + Self Closure for Protected Stair Enclosure



FD 30 Fire Door for Lift Enclosure



FD 30 S Fire Door (Smoke Seal) + Self Closer

Project Logo

Notes

Do not scale from this drawing.

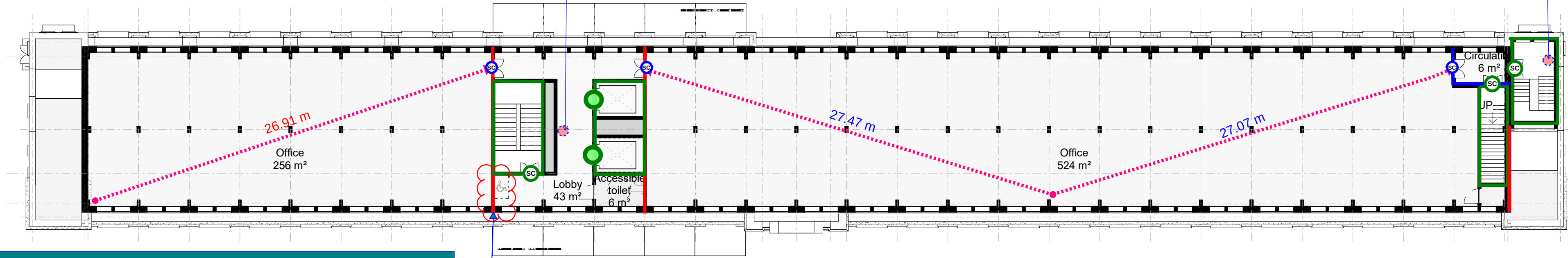
All dimensions, levels, coordinates and other setting out information is to be checked on site and any discrepancies noted in writing to the Project Manager.

All dimensions are in millimeters unless noted otherwise.

Rev Date Description Drawn Checked

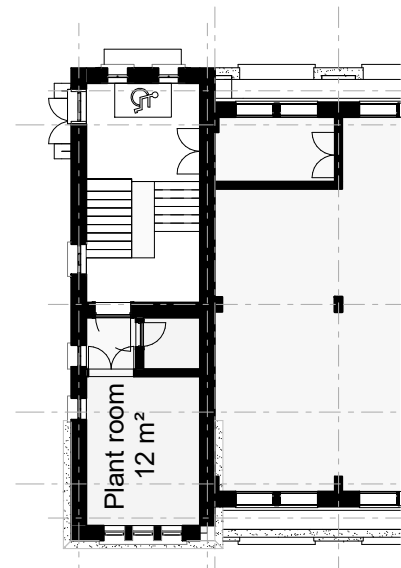
Indicative location of Dry riser main outlet at the center.

Indicative location of Dry riser main outlet at the east.

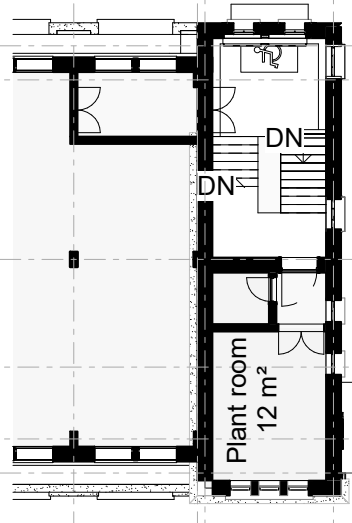


An alternate exit will be provided for this unit as indicated.

1 Floor Plan
Floor 04
1 : 200



2 Floor Plan
Gable mezzanine level 04
1 : 200



Key Plan

JOHN McASLAN + PARTNERS

Architect
Landscape

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Berol House

proposed_level 04

Scale at A1:	1 : 200	Job Number:	2042
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Status:	Checked:	Checked:	JMP
Drawing No:	2042-JMP-XX-04-DR-A-3004	Revision:	

GBA by Level

Level 5 461 m²

GIA by Level

Level 5 454 m²

NIA by use

Level 5 33 m²
Lobby 394 m²
Office 426 m²

Level M5 46 m²
Roof 46 m²

ANNOTATION



DESCRIPTION

60 Minutes Fire Resistant Construction for Protected Stair Enclosure and Lift Shaft

60 Minutes Fire Resistant Construction

60 Minutes Fire Resistant Construction for Corridor

FD 30 S Fire Door (Smoke Seal) + Self Closure for Protected Stair Enclosure

FD 30 Fire Door for Lift Enclosure

FD 30 S Fire Door (Smoke Seal) + Self Closer

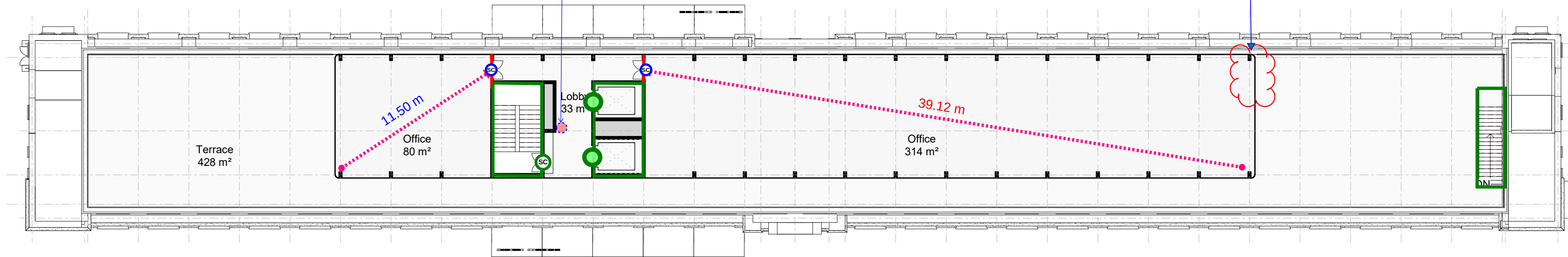
Project Logo

Notes
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Rev Date Description Drawn Checked

Indicative location of Dry riser main outlet at the center.

Occupancy limited to 60 people as only one exit from the unit is provided. AESG have recommended to provide an alternate escape route from this unit, potentially via the open terrace to the secondary escape stair as indicated.



1 Floor Plan
Floor 05 1 : 200



2 Floor Plan
Gable mezzanine level 05 1 : 200

Key Plan

JOHN McASLAN + PARTNERS

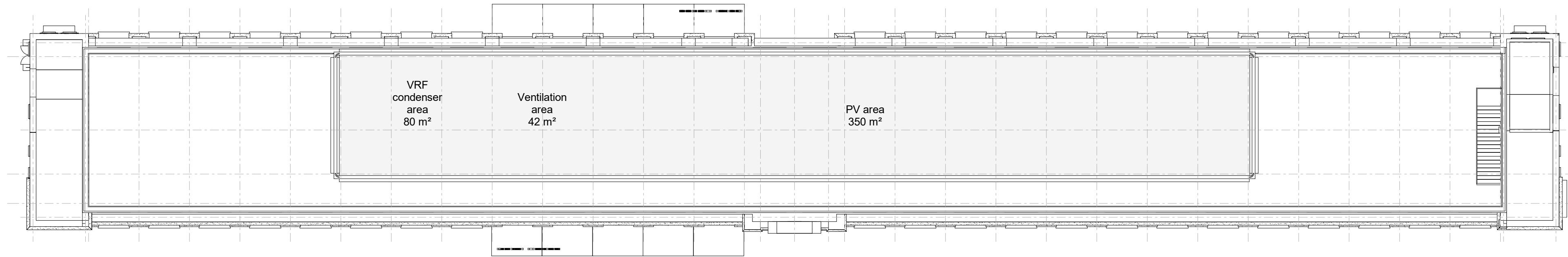
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Berol House

proposed_level 05

Scale at A1:	1 : 200	Job Number:	2042
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Status:	Checked:	Checked:	JMP
Drawing No:	2042-JMP-XX-05-DR-A-3005	Revision:	

Roof area	Area
Level 6	472 m ²
Roof	472 m ²



1

Floor Plan
Floor 06

1 : 200

Project Logo

Notes
Do not scale from this drawing.
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All dimensions are in millimeters unless noted otherwise.

Rev	Date	Description	Drawn	Checked
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Key Plan

JOHN McASLAN + PARTNERS

Architect

Landscape

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Berol House			
proposed_level 06			
Scale at A1:	1 : 200	Job Number:	2042
Date:	24/10/22	Drawing:	JMP
Status:		Checked:	JMP
Drawing No:	2042-JMP-XX-06-DR-A-3006	Revision:	