Karori Community Hall
237 Karori Road, Wellington

Architecture HDT

Fire Engineering Strategy

Holmes Australia Netherlands New Zealand USA

Version A
6 November 2024
113638.05.FESM001

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Issue Authorisation

Project: Karori Community Hall, 237 Karori Road, Wellington

Project No. 113638.05

Version	Date	Status	Prepared	Reviewed
A	6 November 2024	Preliminary – For Information Only	PZP	MCH

Version	Extent of Revision

This report caters specifically for the requirements for this project and this client. No warranty is intended or implied for use by any third party and no responsibility is undertaken to any third party for any material contained herein. This report is produced and signed solely on behalf of Holmes NZ LP and no liability whatsoever accrues to the authors.

New Zealand Building Regulations do not impose specific requirements on a building owner to protect their own property. Consideration of protection of the building owner's and tenants' property is not included in this design beyond the extent which arises from compliance with the Building Code, unless specifically noted otherwise. Accordingly, in the event of a fire, it is possible that the property loss could be significant.

It is assumed that the details of these documents are read and understood. Holmes NZ should be contacted if there are any queries regarding interpretation or meaning of the content. Holmes NZ takes no responsibility for the misinterpretation by others.

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1 PURPOSE

The purpose of this report is to determine the minimum fire safety precautions required within the Karori Community Hall at 237 Karori Road, Wellington to demonstrate compliance with the fire safety requirements of the New Zealand Building Code.

This is a legal requirement whereby it must be shown that after the completion of works, the objectives of clauses of the New Zealand Building Code relating to fire safety (C1-C6) are satisfied.

This Fire Engineering Strategy consists of three sections as follows:

- The scope of works details the work required in order to achieve compliance,
- Appendix A contains verification information required for consent approval only,
- The attached Fire Strategy Sketches supplement both the scope of works and verification items.

This is not a 'For Construction' document in isolation but a performance-based document that is intended to be used by the Architect and other consultants in implementing their detailed designs and preparing their working drawings and specifications. The consultants whose documentation is required to incorporate the requirements of this Fire Engineering Strategy are expected to have read this report, understood the implications as it affects their scope of work, and incorporated the relevant fire requirements into their drawings, specifications, and other construction documents.

This report is issued for the purpose of allowing the design to develop in compliance with the relevant performance requirements of the Building Code with respect to fire.

Additional comments have been included in shaded boxes similar to this to give further information to be considered by the design team.

This report will not be suitable for submission for Building Consent until all issues are resolved, options selected and these shaded boxes removed from the report.

2 PROJECT DETAILS

The existing Karori Community Hall (previously known as Karori Events Centre) is a single level building that contains an auditorium, entry circulation lobby, and associated back of house spaces. The building was previously constructed but unused and has not been granted a CCC. This scope of works is to rectify the fire rating to the north façade and complete the building construction so it can be used by the public.

The building contains a manual fire alarm system.

3 DESIGN APPROACH

Compliance Pathway

To demonstrate compliance with the relevant fire safety clauses of the Building Code, the following Compliance Documents have been adopted as the design basis:

- C/AS2 – Acceptable Solution for Buildings other than Risk Group SH, 1st Edition Amendment 3, 2 November 2023.

Assumptions & Clarifications

The design is based on the following assumptions:

1. No legal agreements exist or are proposed that relate to fire.

2. The building importance level is not IL4 or IL5.
3. The fire design is based around an all out evacuation strategy. Upon alarm all occupants evacuate to a place of safety outside the building.
4. No unit title or similar other boundary arrangements exist or are proposed.

FENZ Design Unit Review

In accordance with section 46(1) of the Building Act 2004 some kinds of applications for Building Consent must be provided to Fire Emergency New Zealand for review. The proposed fire engineering design solution contained herein;

- Establishes compliance in accordance with the provisions of an applicable compliance document, does not involve a modification or waiver of clauses C1-6, D1, F6 or F8 of the Building Code and does not involve other than minor alterations to the fire safety systems.

Therefore, under the Gazette we believe that this application is not required to be forwarded to Fire Emergency New Zealand for review.

4 WORK BY OTHERS

Access Routes

Escape route widths specified in this fire engineering strategy are the minimum widths for fire safety only and may not specifically address requirements for access for people with disabilities.

This report does not detail all requirements required for compliance with D1 and we understand that the compliance with D1 will be documented by others.

Visibility in Escape Routes

The design of systems to achieve compliance with F6 of the NZBC is outside the scope of this report. Any comments in the Fire Engineering documentation regarding visibility in escape routes are for purposes of assisting the designers responsible for F6 compliance.

The design of systems to provide artificial lighting to escape routes (both internal and external paths) in compliance with G8 of the NZBC is outside the scope of this report.

Wayfinding/Signage

The design of exit signage for compliance with F8.3.3 a) of the NZBC is outside the scope of this report. Any comments in the Fire Engineering documentation regarding exit signage positioning and signage icons on the attached Fire Strategy Sketches are for purposes of identifying the required egress routes in assisting the designers responsible for clause F8.3.3 a) compliance.

Structure

Defining the period of fire resistance and fire severity in consideration of clause C6.2 b, c, and d of the NZBC is addressed by this fire strategy. Identification of the structural systems needed for structural stability to achieve the performance requirements and the means of achieving this requirement is to be provided by others.

HSNO

This Fire Engineering Strategy does not specifically consider requirements for Hazardous Substances and New Organisms (HSNO). Therefore, clause C5.7 c) of the NZBC is not covered by this report.

If the building will contain hazardous substances (as defined under the HSNO Act) we expect that specialists will complete a review of the requirements for safe storage of these materials and advise of any fire safety additions (e.g., fire rated enclosures and signage) that arise out of this review.

Fire Safety and Evacuation of Building Regulations

Preparation and approval of any required Evacuation Scheme or Evacuation Plan, is to be provided by others.

5 SCOPE OF WORKS

We believe that the proposed work will comply with the objectives of the New Zealand Building Code clauses C1 to C6 Protection from Fire, to the extent required by the Building Act, based on implementation of the following Scope of Works. This is required to be read in conjunction with the Fire Strategy Sketches.

5.1 Fire Safety Systems

5.1.1 A Type 2 fire alarm system (consisting of manual call points) complying with NZS 4512 is to be installed throughout the building.

5.1.2 The fire alarm system shall have a connection to a remote receiving centre.

5.2 Escape Route Requirements

5.2.1 Open path escape routes are to have minimum clear widths not less than 850 mm with doors of no less than 760 mm.

5.2.2 Tired seating in the auditorium is to be retractable. Where this is provided, clear widths along the aisles are to achieve a minimum of:

- 750mm when serving up to 60 seats,
- 900 mm when serving over 60 seats on one side only, or
- 1100 mm in all other cases.

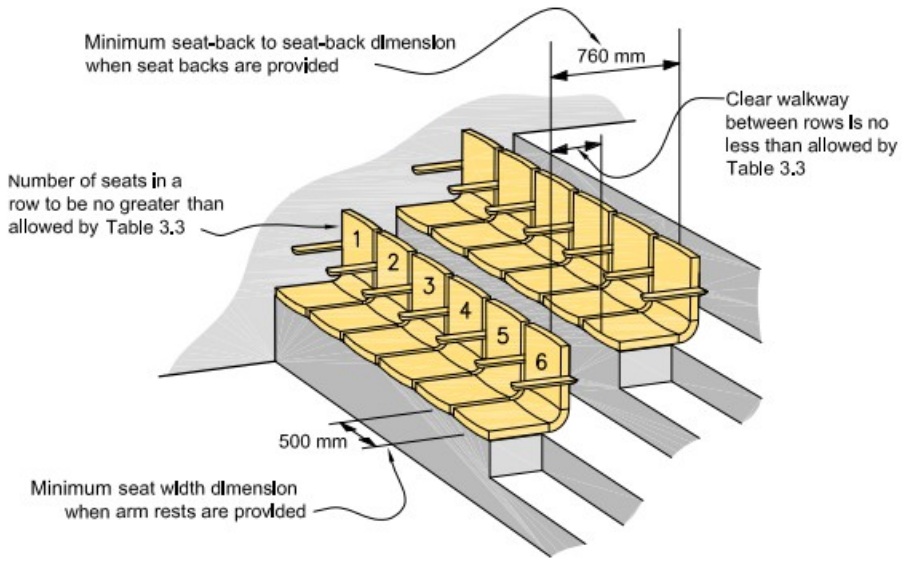
Additionally, each cross-aisle shall have a width of no less than that of the widest aisle it serves plus 50% of the sum of the widths of all other aisles served.

5.2.3 Minimum walkway widths between seats are to be achieved as per Table 3.3 and Figure 3.13 from C/AS2:

Table 3.3 Walkways in fixed seating
Paragraph 3.7.6

Minimum walkway width (mm)	Maximum number of seats in any row	
	One aisle	Aisles both sides
300	7	14
340	9	16
380	9	18
420	10	20
460	11	22
500	12	24

Figure 3.13 Fixed seating – with backs
Paragraph 3.7.6 d)



5.2.4 The clear height of escape routes shall be no less than that required by D1/AS1. This requires a clear height of 2100 mm across the full width, including all lighting, signage, and other ceiling fittings, unless noted otherwise below.

In plantrooms, services platforms, catwalks and associated accessways, escape routes may be designed to the requirements of AS 1657:2013.

5.2.5 All doors on escape routes shall have a clear height of no less than 1955 mm for the required width of the opening, open onto a level floor area on both sides of the door, and where side hinged shall open no less than 90° and the door swing shall not reduce the width of any escape route.

5.2.6 Doors serving a space with more than 50 persons shall swing in the direction of egress. Refer to the fire sketches for the door swing directions.

5.2.7 All manually operated doors on escape routes shall have door handles complying with D1/AS1 and door opening forces that do not exceed 67 N to release the latch, 133 N to set the door in motion, and 67 N to open the door to the minimum required width.

5.2.8 Doorsets located on escape routes (escape stairs and corridors) can use any combination of single or double door leaves provided that the required total escape width is provided. Where a double leaf doorset is provided and the egress width taken as the full door width, both leaves shall be available for egress and no single leaf may be less than 500 mm wide. The doorset shall be provided with appropriate hardware to ensure that both leaves are available for egress.

5.2.9 No less than two exits are required to be provided where there are over 50 people in any area. Exits are required to be located 8 m apart.

5.2.10 All locking devices on doors on escape routes from the area of alteration shall be clearly visible, located where such a device would normally be expected, designed to be easily operated without a key or other implement and allow the door to open in a normal manner.

5.2.11 All electronic locking devices on doors on escape routes shall either act under free handle or be fitted with a push button or switch that is fail safe (i.e. independent of any building management system or security system). The operation must be such that it releases the lock and allows the door to be open.

5.2.12 Panic Hardware (Crash Bars) are required to be provided on the doors exiting from the auditorium and foyer. The associated actuating portion shall consist of a horizontal bar that is not less than half the width of the escape route door leaf and be located between 800 mm and 1200 mm above the floor. The horizontal force is not to exceed 67 N and the door lock is to release allowing the door to swing freely.

5.3 Artificial Lighting and Signage

5.3.1 Emergency lighting complying with F6 is required to be provided throughout the building.

5.3.2 Illuminated exit signage complying with F8 is required to be provided throughout the building.

Note that exit sign symbols are shown on the attached Fire Strategy Sketches to identify the required egress paths. The design of the exit signage system is to be provided by others.

5.3.3 Signage for the fire related safety features of the building shall be provided to comply with F8.

5.4 Limitation on Internal Materials Usage

5.4.1 Throughout the building, internal surface finishes shall meet the following group number requirements (when tested to ISO 9705:1993 as per C/VM2 Clause A1.2, or ISO 5660:2002 as per C/VM2 Clause A1.3).

Table 1: Group Number limitations

Building Elements	Location	Maximum Material Group[1]
Ceilings and walls	Crowd spaces (public areas)	2S
Ceilings and walls	All other occupied spaces	3
HVAC ducts	Internal surfaces	1S
	External surfaces	3

Note 1: Any lower Group Numbers than that specified, and those with additional Group Number -S, will meet the requirement.

Note surface finish controls do not apply to:

- Small areas of non-conforming product within a space with a total aggregate surface area not more than 5.0 m^2.
- Electrical switches, outlets, cover plates and similar small discontinuous areas.
- Pipes and cables used to distribute power or services.
- Handrails and general decorative trim of any material such as architraves, skirtings and window components including reveals, provided these do not exceed 5% of the surface area of the wall or ceiling to which it is attached.
- Damp-proof courses, seals, caulking, flashings, thermal breaks and ground moisture barriers.
- Timber joinery and structural timber building elements constructed from solid wood, glulam or laminated veneer lumber. This includes heavy timber columns, beams, portals and shear walls not more than 3.0 m wide, but does not include exposed timber panels or permanent formwork on the underside of floor/ceiling systems.
- Individual doorsets.
- Continuous areas of permanently installed openable wall partitions not more than 3.0 m high and having a surface area of not more than 25% of the divided room floor area or 5.0 m^2, whichever is less.

The correlation of wall and ceiling surface finishes derived from Australian or European classifications to the Group Number requirements of NZBC Clause 3.4(a) can, without the need for further testing, be taken as described in the following.

Table 2: Australian or European correlations

Group Number to NZBC Clause C3.4(a)	Australian Group Number to NCC Specification C1.10 Clause 4 using AS ISO 9705:2003	European Classification to BS EN 13501-1:2018
1S	Group 1, and a smoke growth rate index not more than 100	Class A1, A2 or B and smoke production rating s1 or s2
1	Group 1	Class A1, A2 or B

Group Number to NZBC Clause C3.4(a)	Australian Group Number to NCC Specification C1.10 Clause 4 using AS ISO 9705:2003	European Classification to BS EN 13501-1:2018
2S	Group 2, and a smoke growth rate index not more than 100	Class C and smoke production rating s1 or s2
2	Group 2	Class C
3	Group 3	Class D

5.4.2 If any foamed plastic building materials or combustible insulating materials form part of a wall, ceiling or roof system, the completed system (foamed plastic and/or foamed plastic plus a surface lining) is required to meet the above maximum material group number as applicable for the location of this building material. In addition, the foamed plastic is to meet the flame propagation criteria as specified in latest versions of AS 1366. It is strongly recommended that foamed plastic materials are not used.

5.4.3 Throughout the building, flooring shall either be non-combustible or meet the following critical radiant flux limitations (when tested to ISO 9239-1:2010).

Table 3: Critical flux limitations for flooring

Area of Building	Minimum Critical Radiant Flux [kW/m²]
All occupied spaces	2.2

5.4.4 Throughout the building, suspended flexible fabrics shall have a Flammability Index of no greater than 12 (when tested to AS 1530.2:1993).

5.4.5 Throughout the building, flexible fabrics used as underlay to roofing or exterior cladding that is exposed to view, shall have a flammability index of no greater than 5 (when tested to NZS/AS 1530.2:1993).

5.5 External Construction

5.5.1 Fire separations on the external faces of the building are identified on the attached Fire Strategy Sketches and are required to be rated to achieve no less than 120/120/120.

5.5.2 More information is required on the distance from the building to the relevant property boundaries (including the adjacent community centre on the same site). Especially where these boundaries are not parallel to the external walls of the building.

5.5.3 Fire rated construction for the protection of fire spread to other properties (i.e. external walls, internal building elements separating different titles) shall achieve structural stability during and post fire.

5.6 Firefighting facilities

5.6.1	Vehicular access needs to provide access to within 20 m of the firefighter access point into the building. The fire alarm control panel shall also be located nearby (as to be approved by FENZ). We understand the existing configuration and layouts have already been approved.

5.6.2 As the buildings is located remote from the street boundaries of the property, the internal roads (where indicated on the site plan) will be used for vehicular access and therefore need to comply with the following items.

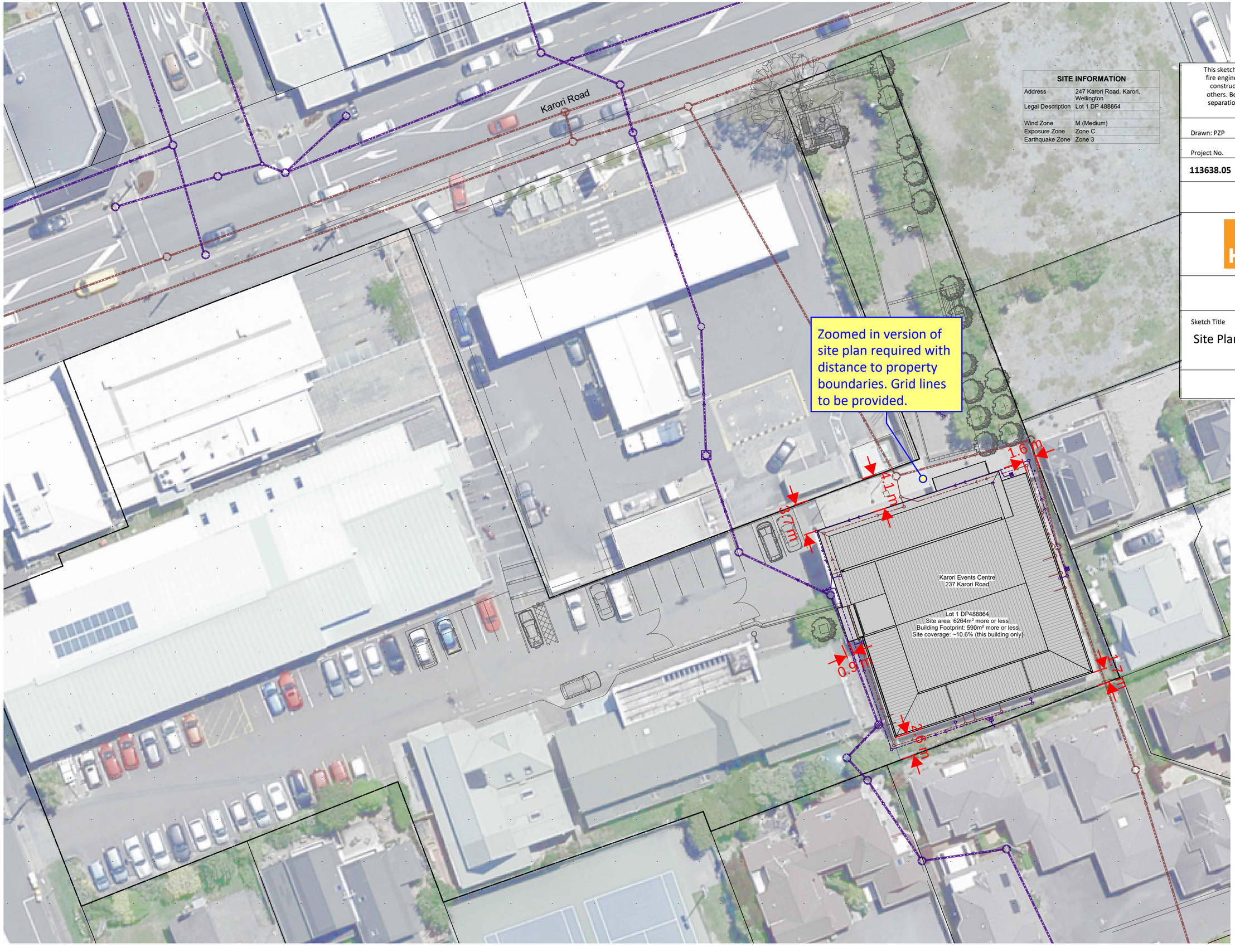
- Internal access roads and pavements shall withstand a laden weight of up to 25 tonnes with an axle load of 8 tonnes, or have a load-bearing capacity of no less than the public roadway serving the property, whichever is lower.
- Be trafficable in all weathers.
- Have a minimum width of 4.0 m.
- Provide a clear passageway of no less than 3.5 m width and 4.0 m in height at site entrances, internal entrances and between buildings.

5.7 Prevention of Fire Occurring

5.7.1 Solid fuel appliances, oil-fired appliances, and open fires are required to be designed and installed C/AS2 Part 7 and the manufacturer's requirements.

5.7.2 Gas-burning appliances must be installed in accordance with Clause G11 of the New Zealand Building Code.

5.7.3 Electrical installations must be installed in accordance with Clause G9 of the New Zealand Building Code.



SITE INFORMATION

Address	247 Karori Road, Karori, Wellington
Legal Description	Lot 1 DP 488864
Wind Zone	M (Medium)
Exposure Zone	Zone C
Earthquake Zone	Zone 3

NOTES:

1. Do not scale off this drawing. Use figured dimensions only. Drawings printed from .pdf files will **NOT** be to scale.
2. Contractor to verify all details and dimensions on site before commencing work.
3. Contractor to report any apparent discrepancy to the Architect for interpretation prior to affected work proceeding.

This sketch does not constitute a complete fire engineering design or detail. Detailed construction drawings are provided by others. Best viewed in colour. Not all fire separations around ducts and shafts are shown.

Drawn: PZP Date: 6 / 11 / 2024

Project No.	Sheet No.	Rev
113638.05	**FS 101**	**A**

Holmes

Sketch Title

Site Plan

REVISIONS:

REV	DATE	AMMENDMENT
P0	04.04.23	PRELIMINARY
P1	01.11.2024	Rev A - Developed Design & Pricing

Developed Design

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Karori Community Hall

237 Karori Road, Wellington 6012

for Wellington City Council
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EXISTING SITE PLAN

Scale (A1) 1 : 200	Job No. 2305
Drawing No. **A1.00**	Revision No. **P1**

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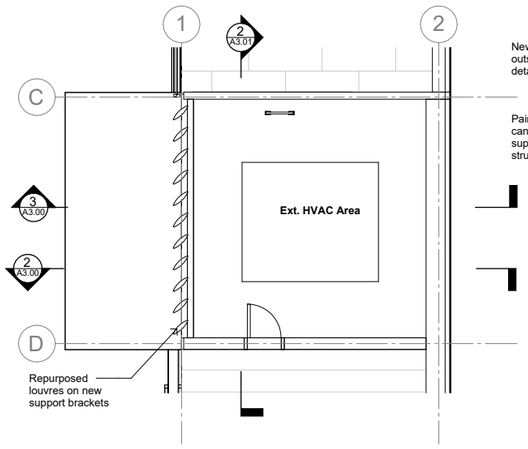
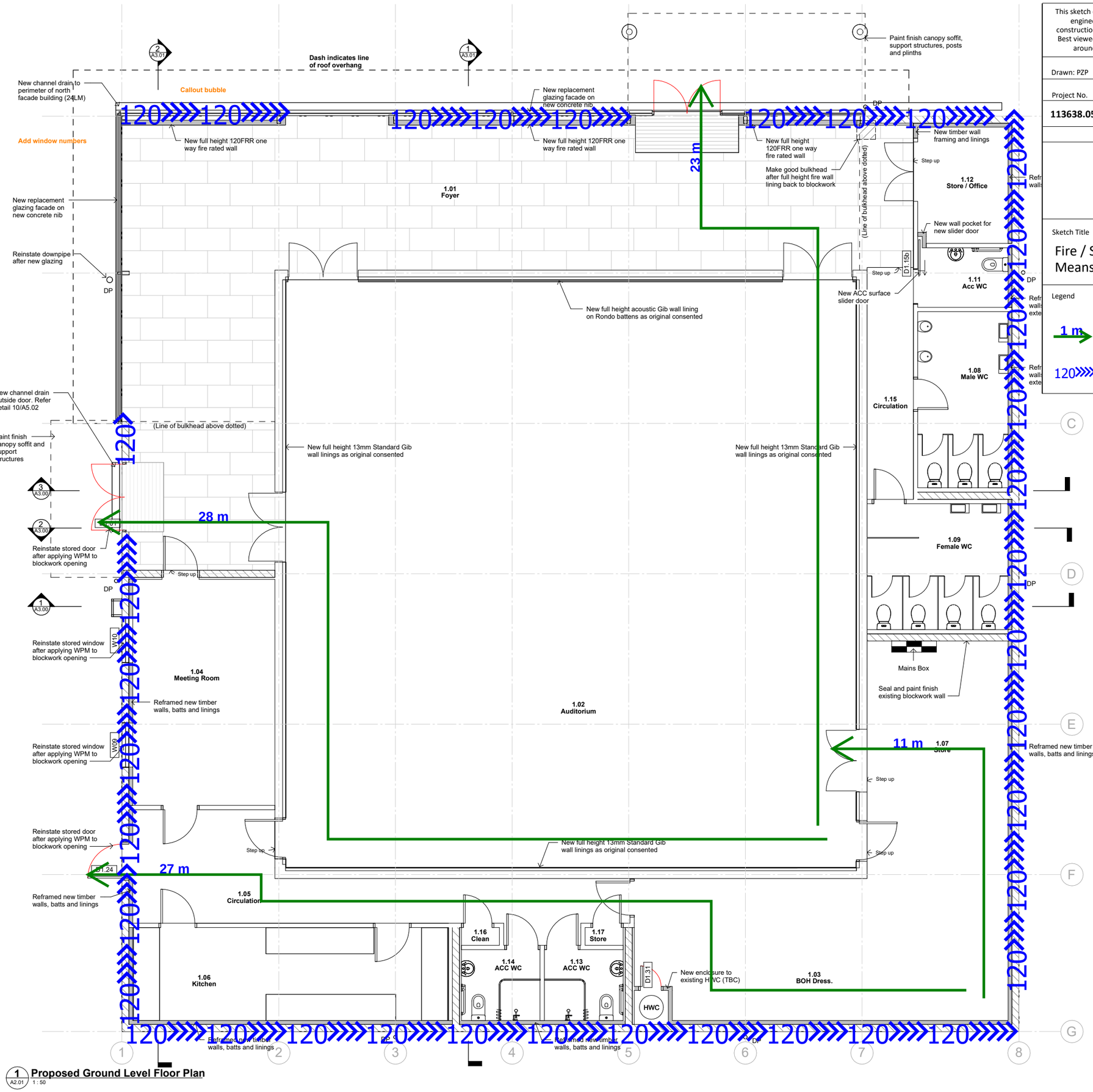


2 Proposed HVAC Mezzanine Level
A2.01 1 : 50



1 Proposed Ground Level Floor Plan
A2.01 1 : 50

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Drawn: PZP Date: 6 / 11 / 2024

Project No.	Sheet No.	Rev
113638.05	FS 102	A

Holmes

Sketch Title

Fire / Smoke Separations & Means of Escape

Legend

1 m Egress route

120 Proposed 120 minute fire rating

REVISIONS:

REV	DATE	AMMENDMENT
P0	04.04.23	PRELIMINARY
P1	01.11.2024	Rev A - Developed Design & Pricing

Developed Design

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PROPOSED GROUND FLOOR PLAN

Scale (A1) 1 : 50	Job No. 2305
Drawing No. A1.11	Revision No. P1

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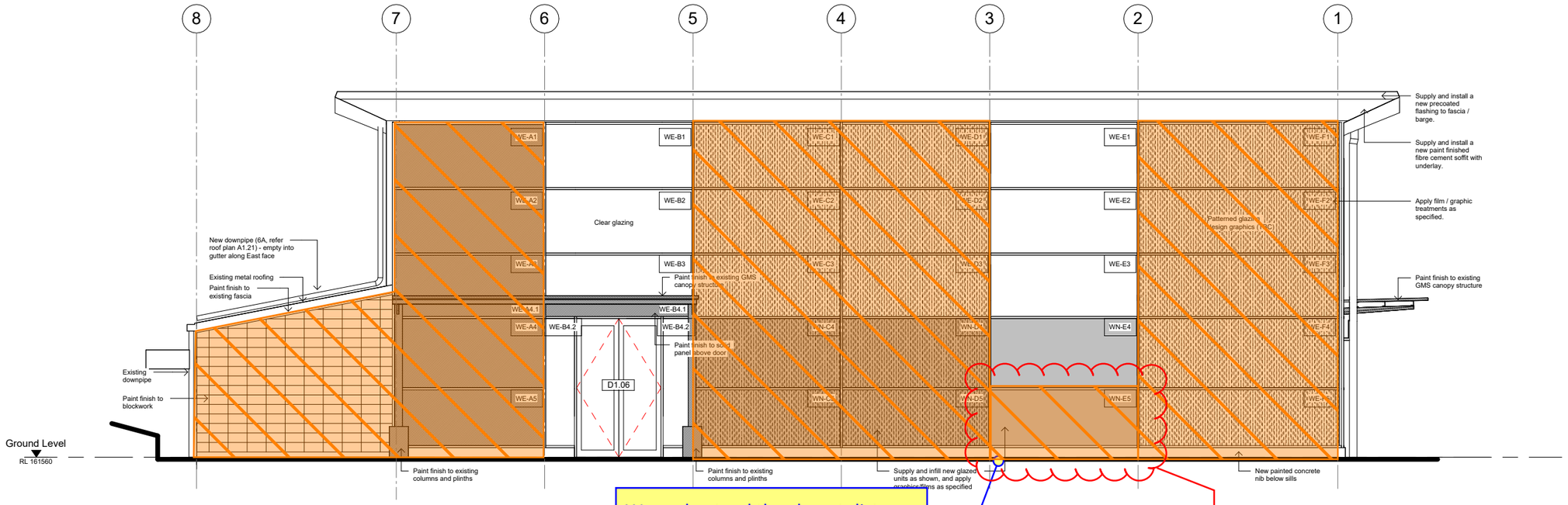
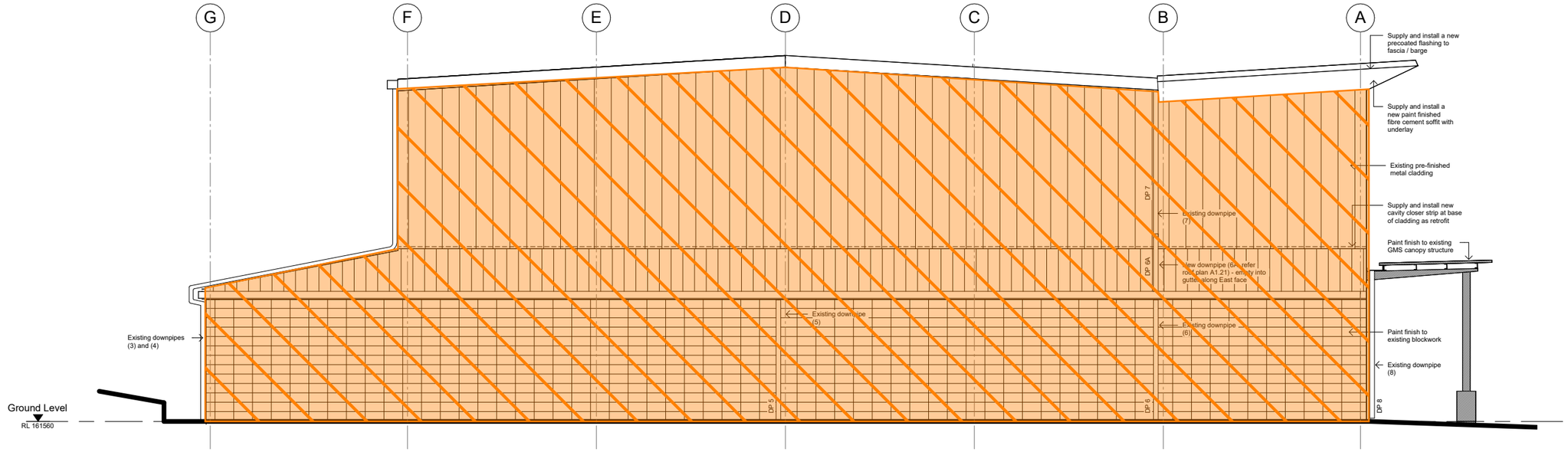


We understand the closest distance from the non-rated part of this face to the boundary is at least 4.0 m. To be confirmed with accurate site plan.

Rating required TBC on detailed information about the property boundary locations

1 Proposed North Elevation
1 : 50



2 Proposed East Elevation
1 : 50

This sketch does not constitute a complete fire engineering design or detail. Detailed construction drawings are provided by others. Best viewed in colour. Not all fire separations around ducts and shafts are shown.

Drawn: PZP Date: 6 / 11 / 2024

Project No.	Sheet No.	Rev
113638.05	FS 103	A

Holmes

Sketch Title

Elevations - External FRR

Legend

120 minute FRR

REVISIONS:

REV	DATE	AMMENDMENT
P0	04.04.23	PRELIMINARY
P1	01.11.2024	Rev A - Developed Design & Pricing

Developed Design

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PROPOSED - NORTH AND EAST ELEVATIONS

Scale (A1) 1 : 50	Job No. 2305
Drawing No. A2.03	Revision No. P1

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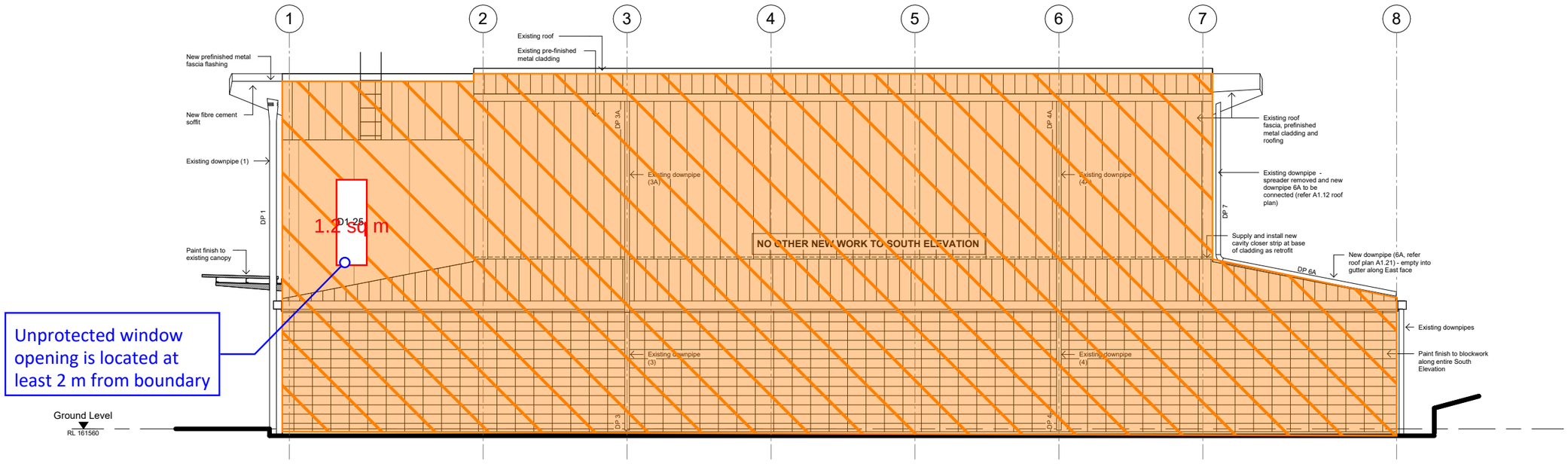

1 Proposed South Elevation
1 : 50

2 Proposed West Elevation
1 : 50

Distance to adjacent building to be confirmed via detailed site plan. We understand the door D1.01 is not directly facing the adjacent building.

This sketch does not constitute a complete fire engineering design or detail. Detailed construction drawings are provided by others. Best viewed in colour. Not all fire separations around ducts and shafts are shown.

Drawn: PZP Date: 6 / 11 / 2024

Project No.	Sheet No.	Rev
113638.05	FS 104	A

Holmes

Sketch Title

Elevations - External FRR

Legend

120 minute FRR

REVISIONS:

REV	DATE	AMMENDMENT
P0	04.04.23	PRELIMINARY
P1	01.11.2024	Rev A - Developed Design & Pricing

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PROPOSED - SOUTH AND WEST ELEVATIONS

Scale (A1) 1 : 50	Job No. 2305
Drawing No. A2.04	Revision No. P1

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