DESIGN CONFIDENCE

Palmdev Pty Ltd

BCA Design Assessment Report

Development Application

1112 – 1116 Barrenjoey Road
Palm Beach NSW 2108

Project: 1112 – 1116 Barrenjoey Road Palm Beach NSW 2108
Document Type: BCA Design Assessment Report
Our Reference: P221_249-2 (BCA) DY

The following report register documents the development and issue of this and each subsequent report(s) undertaken by Design Confidence (Sydney) Pty Ltd.

Revision History—

OUR REFERENCE	REMARKS	ISSUE DATE
P221_249-1 (BCA) DY	DRAFT report issued for review and comment	14 July 2023
P221_249-2 (BCA) DY	FINAL report issued	08 September 2023

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EXECUTIVE SUMMARY

This BCA Design Assessment Report has been prepared by Design Confidence at the request of Palmdev Pty Ltd and relates to the new mixed use residential development located at 1112 – 1116 Barrenjoey Road Palm Beach NSW 2108.

Based upon our assessment to date we are of the opinion that the subject development is capable of achieving compliance with the performance provisions of the BCA, either by complying with the prescriptive requirements or via a performance-based approach.

With respect to the assessment undertaken, the following areas shall be reviewed further as the project develops—

ITEM	DESCRIPTION	RESPONSIBILITY
1.	A required automatic fire sprinkler system installed in a Class 2 building with an effective height of not more than 25 m and a rise in storeys of 4 or more must comply with: (i) AS 2118.1; (ii) AS 2118.4; (iii) FPAA101D; (iv) FPAA101H. As design progresses, please confirm what system is proposed as this will affect the concessions that can be applied, size of tanks, and etc. as well as offer benefits if a fire engineered Performance Solution is pursued. The type of system will also govern DtS requirements, namely vertical protection of openings (i.e., spandrels) as some openings are provided with reduced protection.	Project Architect / Wet Fire Services Engineer / Fire Safety Engineer

In addition to undertaking a detailed assessment of the design against the prescriptive requirements of the BCA a preliminary performance-based assessment has also been undertaken.

The table below lists scenarios where we believe the adoption of a performance design may add value to development in-lieu of complying with the prescriptive (DtS) provisions—

ITEM	PROPOSED PERFORMANCE SOLUTION	BCA DTS CLAUSE	PERFORMANCE REQUIREMENT
FIRE SAFETY			
1.	Justify non-fire-isolated stairway discharging to a point that is 36 m from a single exit / open space.	D2D5 & D2D14	D1P4 & E2P2
2.	Justify exits doors to swing against the direction of egress, i.e., inwards.	D3D25	D1P4
3.	Justify reduced fire rating to that lift doors open directly into SOUs.	C4D12	C1P2

The implementation of a performance-based approach in lieu of compliance with the deemed-to-satisfy (DtS) provisions shall be in consultation with all relevant stakeholders and is subject to the approval of the certifying authority.

The adoption of performance solutions for fire safety matters may be subject to consultation with the NSW Fire Brigade as part of the Construction Certificate process under Section 25 - 29 of the Environmental Planning & Assessment (Development Certification and Fire Safety) Regulation 2021.

1.0 INTRODUCTION

1.1 General

This report has been prepared at the request of Palmdev Pty Ltd and relates to the proposed new mixed use residential development located at 1112 – 1116 Barrenjoey Road Palm Beach NSW 2108.

1.2 Purpose of report

The purpose of this report is to identify the extent to which the architectural design documentation complies with the prescriptive provisions of the NCC 2022 Volume One - Building Code of Australia, thereby after referred to as the BCA.

1.3 Documentation Provided for Assessment

This assessment is based upon the Architectural documentation prepared by Koichi Takada Architects listed within **Appendix 1.**

1.4 Limitations

In interpreting the report, the following limitations shall be noted –

(a) BCA requirements for existing buildings located on the allotment;

(b) This report is based upon, and limited to, the information depicted in the documentation provided for assessment, and does not make any assumptions regarding 'design intention' or the like;

(c) This assessment does not contain comments regarding detailed design issues such as (but not limited to): slip resistance, handrail design, door schedule and door hardware specification and lift specification.

(d) This report is not a regulated design, as defined by the Design Building Practitioners Regulations 2021.

1.5 Report Exclusions

It is conveyed that this report should not be construed to infer that an assessment for compliance with the following has been undertaken –

(a) Work Health & Safety Act (2011) and Regulations (2017);

(b) WorkCover Authority requirements;

(c) Structural and Services Design Documentation;

(d) The individual requirements of service authorities (i.e. Telecommunication Carriers, Sydney Water, Endeavour Energy);

(e) Any conditions imposed by the Consent Authority;

(f) Any conditions imposed by the Principal Certifying Authority;

(g) Design and Building Practitioners Act (2020) and Regulations (2021);

(h) Adaptable Housing (AS4299-1995);

(i) Liveable Housing Guidelines;

(j) BASIX certificate;

(k) The Disability Discrimination Act (DDA) 1992;

(l) The accessibility requirements of the BCA, as contained within Part D4 and F4D5 of the BCA; and

(m) The energy efficiency provisions of the BCA, as contained with Section J of the BCA.

1.6 Relevant Legislative Framework

New building works –

Sub-section 19(1)(c) of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulations 2021 requires that all works forming part of the Construction Certification ('new works') comply with the current requirements of the BCA.

All new works proposed in the architectural documentation are required to comply but existing features of an existing building need not comply with the BCA unless specified under different parts of the legislation e.g. change of building use or consent authority may require upgrade of buildings.

2.0 DEVELOPMENT DESCRIPTION

2.1 General

This report has been prepared at the request of Palmdev Pty Ltd and relates to the proposed new mixed use residential located at 1112 – 1116 Barrenjoey Road, Palm Beach NSW 2108.

Figure 2.1 – 3D view prepared by Koichi Takada Architects

2.2 Building Description

The proposed works comprise of a new mixed use residential building.

Table 2.1 – Building description

DESCRIPTION		
Building Classification	Residential	Class 2
	Retail	Class 6
	Carpark	Class 7a
Rise in Storeys	Five (5)	
Storeys Contained	Six (6)	
Type of Construction	Type A	
Effective Height	13.25 m	> 12 m (Ground FFL 13.45 –LEVEL 2 FFL 19.61)
Fire Compartment Size (Largest)	~1800 m^2	Within Limitation
Sprinkler System	*TBC as design progresses to CC*	
Climate Zone	Climate Zone 5	
Importance Level (AS1170.0)	Level 2	

Table 2.2 – Floor areas and population summary

BUILDING OR PART	FLOOR AREA (m^2)	AREA PER PERSON (m^2)	POPULATION
Shop G01 - Staff	-	-	< 10
Shop G01 - Patrons	~196 m^2	3	65
Shop G02 - Staff	-	-	< 10
Shop G02 - Patrons	~194 m^2	3	65

Notes –
1. The above populations have been based on the floor areas and calculations in accordance with D2D18 of the BCA; and
2. Each retail tenancy is assumed to have less than 10 staff.

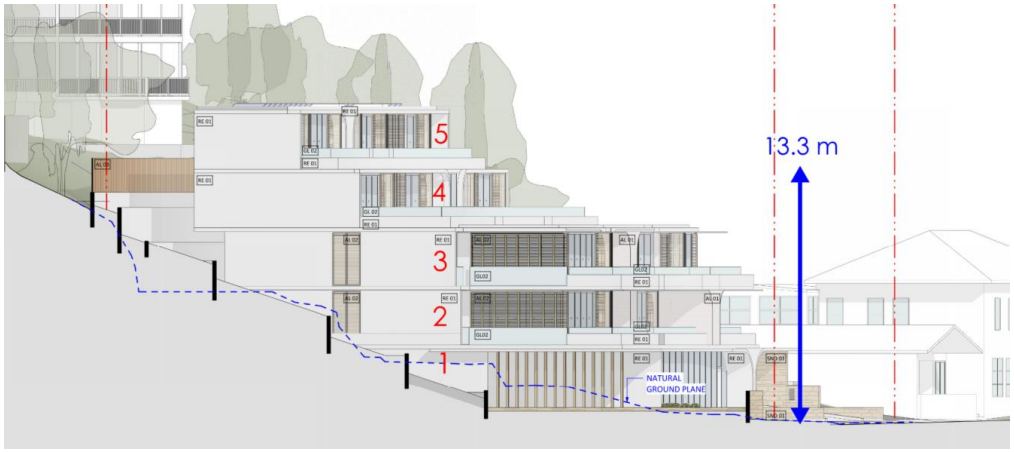


Figure 2.2 – RIS and effective height

The building is determined to have a RIS of five (5), as the building is setback from allotment boundaries, RIS is the greatest number of storeys above the finished ground plane.

Similarly, effective height is measured from the lowest storey included in RIS i.e. Ground floor.

2.3 BCA Assessment – Interpretation Notes

To provide the reader with additional context, the following information regarding assessment methodology used in this assessment is provided below—

(a) For the purposes of exposure to fire-source features, the building is located more than 6 m from the far boundary ('other side') of Barrenjoey Road;

(b) The building is required to and assumed to be sprinkler protected throughout, as the type of system is unknown at this stage concessions afforded by Spec. 17 have not been assessed;

(c) Storage areas in basement has floor area less than 10% the floor area of the storey, hence the basement in its entirety is classified as Class 7b;

(d) Ground floor in its entirety is classified as Class 6, Lobby serves both the residential units and retail tenancies, hence classified as Class 6 as the more stringent classification applies;

(e) Bike storage and bins rooms have floor area less than 10% the floor area of the storey, hence Ground Floor in its entirety is classified as Class 6;

(f) BOH space of retail tenancies are assessed as ancillary Class 6;

(g) Stair 1 in basement is a circulation stair to address changes in level and not an exit subject to Part D2 of the BCA;

(h) FS1 and FS2 connecting two (2) storeys are not required to be fire-isolated and hence assessed as non-fire-isolated stairs;

(i) FS3 (Stair 2) and FS4 (Stair 3) connecting three (3) storeys are not required to be fire-isolated and hence assessed as non-fire-isolated stairs;

(j) Travel and discharge of FS3 (Stair 2) and FS4 (Stair 3) are subject to Class 2 requirements;

(k) D2D14 (6) is not applicable to FS3 (Stair 2) and FS4 (Stair 3) as the building does not require two (2) exits;

(l) Stair 4 and 5 are entirely within the SOU of Apartment 301 and not subject to Part D2 of the BCA;

(m) Balcony and Lobby on Level 3 is 'private' to and within the SOU of Apartment 301;

(n) Lift 1 serves a storey with effective height greater than 12 m;

(o) As design progresses to CC, further details shall be developed to ensure compliance with the requirements of the BCA is achieved, such as:

(i) Wall and floor schedule, showing FRL's, construction, & etc;
(ii) External finishes schedule;
(iii) Stair details, showing handrails, barriers, risers, goings, & etc;
(iv) Balcony details showing barriers and thresholds;
(v) Door and window schedules showing fire doors, operation of latches, window restrictors etc.
(vi) Signage schedule showing statutory signage;
(vii) RLs / FFLs of landscaped (external) egress routes;
(viii) Portable fire extinguisher locations;
(ix) Lift details showing size of lift car etc; and
(x) Wet area details.

Several acronyms and abbreviations are used throughout this report, refer to **Appendix 2** for clarification.

3.0 BCA ASSESSMENT SUMMARY

3.1 Interpretation

The following table summarises the compliance status of the architectural design in terms of each applicable prescriptive provision of the BCA and indicates a capability for compliance with the BCA. The following is an explanation of the terminology used in the summary checklist:

(a) N/A: Not Applicable. This clause is not applicable to the proposed design.

(b) Complies: The proposed design complies with the relevant provisions of the BCA.

(c) Does not comply: The proposed design does not comply with the BCA and requires amendment or investigations into the feasibility of a Performance Solution.

(d) Capable of compliance: The proposed design does not provide enough information to determine compliance, compliance could be achieved as design progresses.

Table 3 – BCA Assessment summary checklist

	BCA CLAUSE	COMPLIES	DOES NOT COMPLY	CAPABLE OF COMPLIANCE
Section B – Structure				
Part B1 - Structural provisions				
B1D2	Resistance to actions			✓
B1D3	Determination of individual actions			✓
B1D4	Determination of structural resistance of materials and forms of construction			✓
B1D6	Construction of buildings in flood hazard areas			✓
Section C – Fire Resistance				
Part C2 - Fire Resistance and Stability				
C2D2	Type of construction required			✓
C2D3	Calculation of rise in storeys	Note		
C2D9	Lightweight construction			✓
C2D10	Non-combustible building elements			✓
C2D11	Fire hazard properties			✓
C2D12	Performance of external walls in fire	**N/A**		
C2D13	Fire-protected timber: Concession	**N/A**		
C2D14	Ancillary elements			✓
C2D15	Fixing of bonded laminated cladding panels			✓
Part C3 - Compartmentation and separation				
C3D3	General floor area and volume limitations	✓		
C3D4	Large isolated buildings	**N/A**		
C3D5	Requirements for open spaces and vehicular access	**N/A**		
C3D6	Class 9 buildings	**N/A**		
C3D7	Vertical separation of openings in external walls		✓	

	BCA CLAUSE	COMPLIES	DOES NOT COMPLY	CAPABLE OF COMPLIANCE
C3D8	Separation by fire walls	**N/A**		
C3D9	Separation of classifications in the same storey			✓
C3D10	Separation of classifications in different storeys			✓
C3D11	Separation of lift shafts			✓
C3D12	Stairways and lifts in one shaft			✓
C3D13	Separation of equipment			✓
C3D14	Electricity supply system			✓
C3D15	Public corridors in Class 2 and 3 buildings	✓		
Part C4 - Protection of openings				
C4D3	Protection of openings in external walls	**N/A**		
C4D4	Separation of external walls and associated openings in different fire compartments	**N/A**		
C4D5	Acceptable methods of protection	Note		
C4D6	Doorways in fire walls	**N/A**		
C4D7	Sliding fire doors	**N/A**		
C4D8	Protection of doorways in horizontal exits	**N/A**		
C4D9	Openings in fire-isolated exits	**N/A**		
C4D10	Service penetrations in fire-isolated exits	**N/A**		
C4D11	Openings in fire-isolated lift shafts			✓
C4D12	Bounding construction: Class 2 and 3 buildings and Class 4 parts		✓	
C4D13	Openings in floors and ceilings for services			✓
C4D14	Openings in shafts			✓
C4D15	Openings for service installations			✓
C4D16	Construction joints			✓
C4D17	Columns protected with lightweight construction to achieve an FRL			✓
Section D – Access and Egress				
Part D2 - Provisions for escape				
D2D3	Number of exits required			✓
D2D4	When fire-isolated stairways and ramps are required			✓
D2D5	Exit travel distances		✓	
D2D6	Distance between alternative exits			✓
D2D7	Height of exits, paths of travel to exits and doorways			✓
D2D8	Width of exits and paths of travel to exits			✓
D2D9	Width of doorways in exits or paths of travel to exits			✓
D2D10	Exit width not to diminish in direction of travel			✓
D2D11	Determination and measurement of exits and paths of travel to exits	Note		

	BCA CLAUSE	COMPLIES	DOES NOT COMPLY	CAPABLE OF COMPLIANCE
D2D12	Travel via fire-isolated exits	**N/A**		
D2D13	External stairways or ramps in lieu of fire-isolated exits	**N/A**		
D2D14	Travel by non-fire-isolated stairways or ramps		✓	
D2D15	Discharge from exits			✓
D2D16	Horizontal exits	**N/A**		
D2D17	Non-required stairways, ramps or escalators	**N/A**		
D2D21	Plant rooms, lift machine rooms and electricity network substations: Concession	Note		
D2D22	Access to lift pits			✓
D2D23	Egress from primary schools	**N/A**		
Part D3 - Construction of exits				
D3D3	Fire-isolated stairways and ramps	**N/A**		
D3D4	Non-fire-isolated stairways and ramps			✓
D3D5	Separation of rising and descending stair flights	**N/A**		
D3D6	Open access ramps and balconies	**N/A**		
D3D7	Smoke lobbies	**N/A**		
D3D8	Installations in exits and paths of travel			✓
D3D9	Enclosure of space under stairs and ramps			✓
D3D10	Width of required stairways and ramps			✓
D3D11	Pedestrian ramps	**N/A**		
D3D12	Fire-isolated passageways	**N/A**		
D3D13	Roof as open space	**N/A**		
D3D14	Goings and risers			✓
D3D15	Landings			✓
D3D16	Thresholds			✓
D3D17	Barriers to prevent falls			✓
D3D18	Height of barriers			✓
D3D19	Openings in barriers			✓
D3D20	Barrier climbability			✓
D3D21	Wire barriers			✓
D3D22	Handrails			✓
D3D23	Fixed platforms, walkways, stairways and ladders			✓
D3D24	Doorways and doors			✓
D3D25	Swinging doors	✓		
D3D26	Operation of latch			✓
D3D27	Re-entry from fire-isolated exits	**N/A**		
D3D28	Signs on doors			✓
D3D29	Protection of openable windows			✓
D3D30	Timber stairways: Concession	**N/A**		

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	CAPABLE OF COMPLIANCE
Section E – Services and Equipment				
Part E1 – Fire fighting equipment				
E1D2	Fire hydrants			✓
E1D3	Fire hose reels			✓
E1D4 - E1D12	Sprinklers			✓
E1D13	Where sprinklers are required: occupancies of excessive hazard	**N/A**		
E1D14	Portable fire extinguishers			✓
E1D15	Fire control centres	**N/A**		
E1D16	Fire precautions during construction			✓
E1D17	Provisions for special hazards	**N/A**		
Part E2 - Smoke hazard management				
E2D3	General requirements	**N/A**		
E2D4	Fire-isolated exits	**N/A**		
E2D5 - E2D20	Smoke hazard management system			✓
E2D21	Provision for special hazards	**N/A**		
Part E3 - Lift installations				
E3D2	Lift installations			✓
E3D3	Stretcher facility in lifts	**N/A**		
E3D4	Warning against use of lifts in fire			✓
E3D5	Emergency lifts	**N/A**		
E3D6	Landings			✓
E3D7	Passenger lift types and their limitations			✓
E3D9	Fire service controls	**N/A**		
E3D10	Residential care buildings	**N/A**		
E3D11	Fire service recall control switch	**N/A**		
E3D12	Lift car fire service drive control switch	**N/A**		
Part E4 - Visibility in an emergency, exit signs and warning systems				
E4D4	Design and operation of emergency lighting			✓
E4D8	Design and operation of exit signs			✓
E4D9	Emergency warning and intercom systems	**N/A**		
Section F - Health and amenity				
Part F1 - Surface water management, rising damp and external waterproofing				
F1D3	Stormwater drainage			✓
F1D4	Exposed joints			✓
F1D5	External waterproofing membranes			✓
F1D6	Damp-proofing			✓
F1D7	Damp-proofing of floors on the ground			✓

	BCA CLAUSE	COMPLIES	DOES NOT COMPLY	CAPABLE OF COMPLIANCE
F1D8	Subfloor ventilation	**N/A**		
Part F2 - Wet areas and overflow protection				
F2D2	Wet area construction			✓
F2D3	Rooms containing urinals	**N/A**		
F2D4	Floor wastes			✓
Part F3 - Roof and wall cladding				
F3D2	Roof coverings			✓
F3D3	Sarking			✓
F3D4	Glazed assemblies			✓
F3D5	Wall cladding			✓
Part F4 - Sanitary and other facilities				
F4D2	Facilities in residential buildings			✓
F4D4	Facilities in Class 3 to 9 buildings			✓
F4D8	Construction of sanitary compartments			✓
F4D11	Waste management	**N/A**		
Part F5 - Room heights				
F5D2	Height of rooms and other spaces			✓
Part F6 - Light and ventilation				
F6D2	Provision of natural light			✓
F6D3	Methods and extent of natural light	Note		
F6D4	Natural light borrowed from adjoining room	Note		
F6D5	Artificial lighting			✓
F6D6	Ventilation of rooms			✓
F6D7	Natural ventilation	Note		
F6D8	Ventilation borrowed from adjoining room	Note		
F6D9	Restriction on location of sanitary compartments			✓
F6D10	Airlocks			✓
F6D11	Carparks			✓
F6D12	Kitchen local exhaust ventilation	**N/A**		
Part F7 - Sound transmission and insulation				
F7D3	Determination of airborne sound insulation ratings			✓
F7D4	Determination of impact sound insulation ratings			✓
F7D5	Sound insulation rating of floors			✓
F7D6	Sound insulation rating of walls			✓
F7D7	Sound insulation rating of internal services			✓
F7D8	Sound insulation rating of internal pumps			✓
Part F8 - Condensation management				
F8D3	External wall construction			✓
F8D4	Exhaust systems			✓

	BCA CLAUSE	COMPLIES	DOES NOT COMPLY	CAPABLE OF COMPLIANCE
F8D5	Ventilation of roof spaces			✓
Section G - Ancillary provision				
Part G1 - Minor structures and components				
G1D2	Swimming pools			✓
G1D3	Refrigerated chambers, strong-rooms and vaults	**N/A**		
G1D4	Outdoor play spaces	**N/A**		
Part G2 - Boilers, pressure vessels, heating appliances, fireplaces, chimneys and flues				
G2D2 – G2D4	Boilers, pressure vessels, heating appliances, fireplaces, chimneys and flues	**N/A**		
Part G3 - Atrium construction				
G3D2 – G3D8	Atrium construction	**N/A**		
Part G4 - Construction in alpine areas				
G4D3 – G4D8	Construction in alpine areas	**N/A**		
Part G5 - Construction in bushfire prone areas				
NSW G5D3 – G5D4	Construction in bushfire prone areas	**N/A**		
Part G6 - Occupiable outdoor areas				
G6D2 – G6D10	Occupiable outdoor areas	**N/A**		

4.0 BCA DETAILED ASSESSMENT

4.1 General

With reference to the 'BCA Assessment Summary' contained within **Section 3** of this report, the following detailed analysis and commentary is provided. This commentary is formulated to enable the design documentation to be further progressed, for the purpose of evidencing the attainment of compliance with the relevant provisions of the BCA

4.2 Section B – Structure

Part B1 - Structural provisions

Note	Structural works shall comply with this section. Compliance with Section B of the BCA shall be addressed by the project's Structural Engineer as part of the structural design documentation.
B1D2	**Resistance to actions (prev. B1.1)** The resistance of a building or structure shall be greater than the most critical action effect resulting from different combinations of actions – (a) The most critical action is determined in accordance with AS/NZS 1170.0-2002 and B1D3; and (b) The resistance of a building or structure is determined in accordance with B1D4.
B1D3	**Determination of individual actions (prev. B1.2)** The magnitude of individual actions must be determined in accordance with the actions contained within this clause, including – (a) Permanent actions; (b) Imposed actions; (c) Wind / snow / earthquake actions; (d) Considerations to the nature of the – (i) Action; (ii) Building or structure; and (iii) Importance level; and (e) Any additional addition actions that may be applicable.
B1D4	**Determination of structural resistance of materials and forms of construction (prev. B1.4)**

B1D4 *Cont'd*

The structural resistance of materials and forms of construction must be determined in accordance with this clause (as appropriate), a summary is as follows –

(a) Masonry: AS 3700:2018.

(b) Concrete:

(i) Concrete construction: AS 3600:2018.
(ii) Autoclaved aerated concrete: AS 5146.1:2015 & AS 5146.3:2018.
(iii) Post-installed and cast-in fastenings: AS 5216:2021.

(c) Steel construction:

(i) Steel structures: AS 4100:2020.
(ii) Cold-formed steel structures: AS/NZS 4600:2018.
(iii) Composite steel and concrete: AS/NZS 2327-2017.

(d) Aluminium construction: AS/NZS 1664.1:1997 or AS/NZS 1664.2:1997.

(e) Timber construction:

(i) Design of timber structures: AS 1720.1.
(ii) Timber structures: AS 1684.2:2021, AS 1684.3:2021 or AS 1684.4:2010.
(iii) Nailplated timber roof trusses: AS 1720.5:2015.

(f) Piling: AS 2159:2009.

(g) Glazed assemblies:

(i) External: AS 2047:2014.
(ii) Internal: AS 1288:2021.

(h) Termite Risk Management: AS 3660.1:2014.

(i) Roof construction (except in cyclonic areas):

(i) Terracotta, fibre-cement and timber slates and shingles: AS 4597:1999.
(ii) Roof tiling: AS 2050:2018.
(iii) Cellulose cement corrugated sheets: AS/NZS 2908.1:2000.
(iv) Metal roofing: AS 1562.1:2018.

B1D6

Construction of buildings in flood hazard areas (prev. B1.6)

A building in a flood hazard area must comply with the ABCB Standard for Construction of Building in Flood Hazard areas. Consent Authority (Council) or Principal Certifying Authority (Certifier) can advise whether the building is situated in a flood hazard area.

4.3 Section C – Fire Resistance & Stability

Part C2 – Fire Resistance and Stability

C2D2

Type of Construction Required & Spec. 5 Fire-resisting construction (prev. C1.1 & Spec. C1.1)

General Requirements

The building is to be erected in Type A fire resisting construction in accordance with **Spec. 5** of the BCA. Refer to **Appendix A2** for the relevant fire resisting requirements.

Generally, Class 2 residential requires an FRL of 90 minutes, Class 6 retail 180 minutes and Class 7a basement carpark 120 minutes (concessions are available to the carpark but not assessed as sprinkler system is unknown at this stage). Ground floor in its entirety is classified as Class 6 and requires 180 minutes.

At CC stage a fire engineered Performance Solution may be feasible to rationalise 120-minute FRLs in lieu of 180-minutes for the Ground Floor.

General Concessions

A floor need not comply with an FRL if—

(a) it is laid directly on the ground; or
(b) it is within a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building; or
(c) it is an open-access floor (for the accommodation of electrical and electronic services and the like) above a floor with the required FRL.

A roof need not comply with Table S5C11 if its covering is non-combustible and the building is of Class 2.

S5C9 *Carparks in Class 2 and 3 building* concession is not applicable as the building is mixed use.

C2D9

Lightweight Construction (prev. C1.8)

Any lightweight construction to internal walls required to achieve an FRL or protection to steel columns required achieve an FRL are required to be tested for resistance in accordance with this clause.

Lightweight construction used as a fire-resisting covering of a steel column or the like, and where the covering is not in continuous contact with the column must have the voids filled to a height of not less than 1.2m above the floor and where the column is liable to be damaged must be protected by steel or other suitable material.

C2D10 **Non-combustible Elements (prev. C1.9)**

The following building elements and their components must be non-combustible.

(a) External walls, including all components incorporated in them including the façade covering, framing and insulation;

(b) The flooring and floor framing of lift pits;

(c) Internal loadbearing elements;

(d) Non-loadbearing internal walls where they are required to be fire-resisting.

A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in a building required to be of Type A construction.

C2D11 **Fire Hazard Properties (prev. C1.10)**

This clause outlines the minimum fire hazard properties of materials inside the subject development which is susceptible to the effects of flame or heat. All linings, materials or assemblies used for flooring, floor coving, wall and ceiling lining are required to comply with Specification 7.

C2D14 **Ancillary Elements (prev. C1.14)**

An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the elements permitted under this clause.

C2D15 **Fixing of Bonded Laminated Cladding Panels**

Externally located bonded laminated cladding panels must have all layers of cladding mechanically supported or restrained to the supporting frame. An externally located bonded laminated cladding panel need not comply with the above if the material is laminated glass system, layered plasterboard product, perforated gypsum lath with a normal paper finish, fibrous-plaster sheet or fibre-reinforced cement sheeting.

Part C3 - Compartmentation and separation

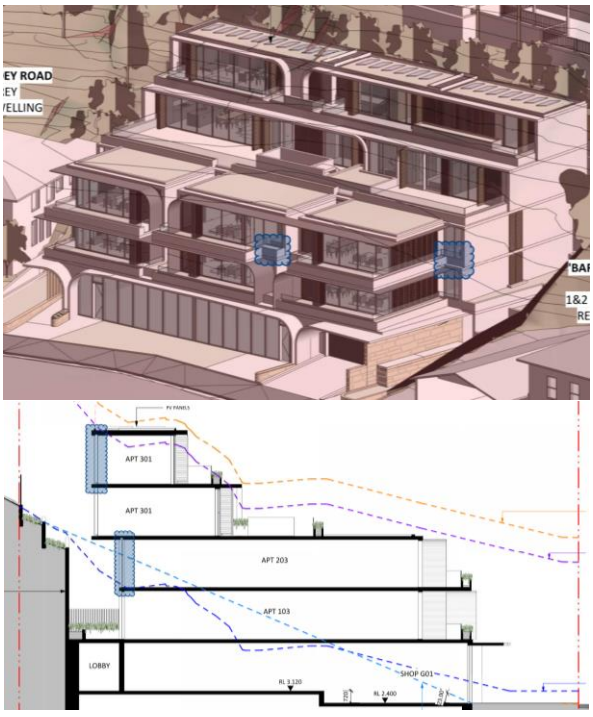
C3D3 **General Floor Area & Volume Limitations (prev. C2.2)**

The maximum floor area and volume limitations of a fire compartment as nominated in the deemed to satisfy provisions are as follows:

Type A – The floor area and volume limitations are –

(a) Class 5, 9b or 9c: 8,000m^2 and 48,000m^3

(b) Class 6, 7, 8 or 9a: 5,000m^2 and 30,000m^3

C3D3 Cont'd	Note – The BCA does not require Class 2 and 3 parts of the building to be considered. The basement carpark levels are not required to be considered if a sprinklered
C3D7	**Vertical Separation of Openings in External Walls (prev. C2.6)** **Note –** The building is required and assumed to be sprinklered throughout, this clause is only applicable if the system is FPAA101D or FPAA101H Below outlines the requirements of the BCA, as relevant to this clause / requirement. Spandrels – The provision of spandrels within the external walls not less than 900mm in height and extend not less than 600mm above the finished floor level. The spandrels are required to non-combustible and have an FRL being not less than 60/60/60; or Horizontal Projections – The provision of horizontal aprons/projections that project outwards from the external face of the wall not less than 1100mm and extends along the wall not less than 450mm beyond the openings concerned. The horizontal projections are required to be non-combustible and have an FRL being not less than 60/60/60). Balconies may act as horizontal projections provided the FRL is achieved. The figure below indicates openings where protection is not provided.  **Figure C3D7 (a) & C3D7 (b)**

C3D9 **Separation of Classifications on in the Same Storey (C2.8)**

Ground floor in its entirety is classified as Class 6, Lobby serves both the residential units and retail tenancies, hence classified as Class 6 as the more stringent classification applies. Refer to C2D2.

C3D10 **Separation of Classifications on Different Storeys (C2.9)**

The floor between the adjoining parts must have an FRL of not less than that prescribed in Specification 5 for the classification of the lower storey. Refer to C2D2.

C3D11 **Separation of Lift Shafts (prev. C2.10)**

In a building required to be of Type A construction, any lift connecting more than 2 storeys, or more than 3 storeys if the building is sprinklered, (other than lifts which are wholly within an atrium) must be separated from the remainder of the building by enclosure in a shaft the walls have the relevant FRL prescribed by Specification 5.

The passenger lift must be separated from the remainder of the building with walls having the following FRLs:

(a) Basement carparks an FRL of 120/120/120;

(b) Residential levels achieve an FRL of 90/90/90

C3D13 **Separation of Equipment (prev. C2.12)**

Any of the following equipment located in the building must be separated from the remainder of the building:

(a) lift motors and lift control panels; or

(b) emergency generators used to sustain emergency equipment operating in the emergency mode; or

(c) central smoke control plant; or

(d) boilers; or

(e) a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more.

Equipment need not be separated in if the equipment comprises:

(a) smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification 21; or

(b) a lift installation without a machine-room; or

C3D13 *Cont'd*

(c) equipment otherwise adequately separated from the remainder of the building.

Equipment otherwise adequately separated from the remainder of the building. Separation must be by construction having an FRL as required by Specification 5, but not less than FRL 120/120/120 with openings protected by self-closing fire doors having an FRL of not less than –/120/30.

C3D14

Electricity Supply Systems (prev. C2.13)

If the main switchboard sustains emergency equipment operating in emergency mode, then the switchboard shall be separated with construction achieving an FRL of 120/120/120 or /120/120 (if non-loadbearing) and any access doorway shall be protected with a self-closing fire door having an FRL of -/120/30.

The emergency switchgear shall be separated from the non-emergency switchgear via a metal partition to minimise the spread of a fault from the non-emergency switchgear. For the purposes of the above, emergency equipment includes fire hydrant booster pumps.

Part C4 - Protection of openings

C4D3

Protection of openings in external walls (prev. C3.2)

The building is setback is more than 3 m from allotment boundaries, hence openings do not require protection.

C4D11

Openings in Fire-Isolated Lift Shafts (prev. C3.10)

Lift landing doors are required to be fire doors with an FRL of -/60/- that comply with AS 1735.11-1986 and be set to remain closed except when discharging or receiving, passengers, goods or vehicles.

C4D12

Bounding construction: Class 2 and 3 buildings and Class 4 parts (prev. C3.11)

A doorway in a Class 2 building must be protected if it provides access from a sole-occupancy unit to—

(a) a public corridor, public lobby, or the like; or

(b) a room not within a sole-occupancy unit; or

(c) the landing of an internal non fire-isolated stairway that serves as a required exit; or

(d) another sole-occupancy unit.

A doorway in a Class 2 building must be protected if it provides access from a room not within a sole-occupancy unit to—

(a) a public corridor, public lobby, or the like; or

C4D12 *Cont'd*

(b) the landing of an internal non fire-isolated stairway that serves as a required exit.

On Level 3 and Level 4 the lift doors would need to achieve a rating of -/60/30. Lift doors are unlikely to achieve the 30-minute insulation rating hence at CC stage a fire engineered Performance Solution will be required to justify nil insulation rating.

C4D13 **Openings in Floors and Ceilings for Services (prev. C3.12)**

Where a service passes through a floor required to achieve an FRL, that service is required to be protected by either a shaft which has been construction in accordance with BCA Spec 5 (listed above) or in accordance with C3.15 (see below).

C4D14 **Openings in Shafts (prev. C3.13)**

Any opening in a wall providing access to a ventilating, pipe, garbage, or other service shaft must be protected by one of the following methods:

(a) A self-closing --/60/30 fire door or hopper; or

(b) An access panel having an FRL of not less than --/60/30; or

(c) If the shaft is a garbage shaft the door or hopper is to be of non-combustible construction.

C4D15 **Openings for Services Installations (prev. C3.15)**

Any opening(s) for service(s) such as electrical, mechanical, plumbing, etc) that penetrate a building element which is required to be of fire- resisting construction is required to be protected (i.e. fire seal).

C4D16 **Construction Joints (prev. C3.16)**

This clause sets out to limit the spread of fire between elements which are required to achieve an FRL. Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 4072.1 and AS 1530.4 to achieve the required FRL or that differs from a prototype in accordance with Section 4 of AS 4072.1 and achieves the required FRL.

C4D17 **Columns Protected with Lightweight Construction to Achieve an FRL (prev. C3.17)**

This clause prohibits columns with lightweight fire protection from lowering the fire-resistance levels (FRLs) of other building elements. A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire.

4.4 Section D - Access and egress

Part D2 - Provisions for escape

D2D3 **Number of exits required (prev. D1.2)**

Without passing through another sole-occupancy unit every occupant of a storey must have access to an exit or at least 2 exits if required.

(a) At least two (2) exits must be provided from basement level

(b) At least one (1) exit must be provided from each storey

A compliant number of exits has been provided from each storey of the building.

D2D4 **When fire-isolated stairways and ramps are required (prev. D1.3)**

FS1 and FS2 connecting two (2) storeys are not required to be fire-isolated and hence assessed as non-fire-isolated stairs.

FS3 (Stair 2) and FS4 (Stair 3) connecting three (3) storeys are not required to be fire-isolated and hence assessed as non-fire-isolated stairs.

D2D5 **Exit travel distances (prev. D1.4)**

Class 2

Travel distance must not be more than-

(a) 6 m (12 m depending on the sprinkler system) from the entrance doorway of any SOU to an exit or from a point from which travel in different directions to two (2) exits is available due to the building being sprinkler protected; or

(b) 20 m to any point on the floor of a room which is not in a sole-occupancy unit to an exit or from a point at which travel in different directions to two (2) exits.

Class 6

(a) 20 m from any point on the floor to a point of choice to at least two (2) exits;

(b) 40 m from any point on the floor to an exit, if more than one (1) exit is available; and

D2D5	(c) 30 m to a single exit.
Cont'd	<u>Class 7a</u> (a) 20 m from any point on the floor to an exit or a point of choice to at least two (2) exits; and (b) 40 m from any point on the floor to an exit, if more than one (1) exit is available. Does not comply, extended travel of distances on Ground Floor, refer to D2D14 as the extended travel distance relates to the discharge point of stairways. Please see **Appendix 4** of this report showing travel distance markup.
D2D6	**Distance between alternative exits (prev. D1.5)** Exits shall be located to not be more than 60 m apart more than and not closer than 9m Distance between alternative exits have been assessed as being no further than the DtS provisions of the BCA.
D2D7	**Height of exits, paths of travel to exits and doorways (prev. D1.6)** In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm.
D2D8	**Width of exits and paths of travel to exits (prev. D1.6)** The unobstructed width of each required exit or path of travel to an exit, must be not less than 1 m.
D2D9	**Width of doorways in exits or paths of travel to exits (prev. D1.6)** The unobstructed width of each exit provided to comply with D2D8, minus 250 mm. In any other case except where it opens to a sanitary compartment or bathroom, the doorway must not be less than 750 mm wide.
D2D10	**Exit width not to diminish in direction of travel (prev. D1.6)** The unobstructed width of a required exit must not diminish in the direction of travel to a road or open space.
D2D11	**Determination and measurement of exits and paths of travel to exits (prev. D1.6)** The required width of a stairway or ramp in a required exit or path of travel to an exit must –

D2D11 *Cont'd*	(a) Be measured clear of all obstructions such as handrails, projecting parts of barriers and the like; and. (b) Extend without interruption, except for ceiling cornices, to a height not less than 2 m vertically above a line along the nosings of the treads or the floor surface of the ramp or landing; and (c) To determine the aggregate unobstructed width, the number of persons accommodated must be calculated according to D2D18.
D2D14	**Travel via non-fire-isolated stairs.** <u>Class 2</u> The distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or ramp must not exceed 60m. Required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than – (a) 15 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or (b) 30 m from one of two (2) such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions. FS3 (Stair 2) and FS4 (Stair 3) discharges to single a non-fire-isolated corridor that is 35 m away from open space, hence does not comply with the requirements of this clause. At CC stage a fire engineered Performance Solution can be pursued to justify the extended travel distance of these stairways. <u>Cass 6 & 7a</u> The distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or ramp must not exceed 80 m. Required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than – (a) 20 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or (b) 40 m from one of two (2) such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.

D2D15 **Discharge from exits (prev. D1.10)**

An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it e.g. discharge points.

If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than -

(a) 1 m or minimum width of the required exit; or

(b) If an exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be by a ramp or other incline having a gradient not steeper than 1:8 at any part (not steeper than 1:14 if required to be accessible) or a stairway.

D2D22 **Access to lift pits (prev. D1.17)**

Access to the lift pit must be through the lowest landing doors, where the pit depth is not more than 3m.

Where the lift pit is more than 3m, access must be provided through an access doorway complying with the requirements of this clause.

Part D4 - Construction of exits

D3D3 **Non-fire-isolated stairways and ramps (prev. D2.3)**

A stairway or ramp (including any landings) must be constructed -

(a) reinforced or prestressed concrete; or

(b) steel in no part less than 6 mm thick; or

(c) timber that—

(i) has a finished thickness of not less than 44 mm; and
(ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and
(iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.

D3D8 **Installations in exits and paths of travel (prev. D2.7)**

Gas or other fuel services shall not be installed within the required exits.

Any services or equipment (being electrical meters, distribution boards or the like) installed within the hallway are required to be enclosed by non-combustible construction or a fire-protective covering (i.e. 1 layer of 13mm fire-protective grade plasterboard) with doorway(s) or opening(s) suitably sealed against smoke spreading from the enclosure.

D3D14 **Goings and risers (prev. D2.13)**

A stairway must have -

(a) The going and risers of a stair must be constant throughout each flight except that between adjacent risers or going, not greater than 5mm and not more than 10mm throughout the flight; and

(b) No openings greater than 125mm; and

(c) In a required stair, no winders in lieu of a landing; and

(d) The stair treads are required to have a surface or nosing strip achieving a slip-resistance classification of P3 or R10 in dry or P4 or R11 in wet tested in accordance with AS4586-2013; and

(e) Treads of solid construction (not mesh or other perforated material) if the stairway is more than 10 m high or connects more than 3 storeys; and

(f) The going, riser and steepness dimension of the stairways are required to be designed within the following range -

RISER (R)		GOING (G)		SLOPE RELATIONSHIP (2R+G)	
Max	**Min**	**Max**	**Min**	**Max**	**Min**
190	115	355	250	700	550

D3D15 **Landings (prev. D2.14)**

Stair landings are required to be a minimum of 750mm long with a gradient not steeper than 1:50 and have a slip-resistance surface or strip.

The surface or strip is required to achieve a slip-resistance classification of P3 or R10 in dry or P4 or R11 in wet tested in accordance with AS4586-2013

D3D16 **Thresholds (prev. D2.15)**

The threshold of a doorway is not permitted to incorporate a step or ramp at any point closer to the doorway than the width of the door leaf.

That is unless the doorway opens to a road or open space and:

(a) In a building required to be accessible, is provided with a threshold or step ramp in accordance with AS1428.1-2009; or

(b) In all other cases, the door sill is not more than 190mm above the finished surface of the ground.

D3D17 **Barriers to prevent falls (prev. D2.16)**

A continuous barrier must be provided along the side of the following if the trafficable surface is 1 m or more above the surface beneath –

(a) a roof to which general access is provided; and

(b) a stairway or ramp; and

(c) a floor, corridor, hallway, balcony, deck, verandah, mezzanine, access bridge or the like; and.

(d) any delineated path of access to a building.

D3D18 **Height of barriers (prev. D2.16)**

The height of a barrier should comply with the following –

(a) For stairways or ramps with a gradient of 1:20 or steeper, the barrier must be at least 865 mm in height.

(b) For landings to a stair or ramp where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length, the barrier must be at least 865 mm in height.

(c) For all other locations, the barrier must be at least 1 m in height.

D3D19 **Openings in barriers (prev. D2.16)**

Openings in barriers must -

(a) Not allow a 125 mm sphere to pass through; or

(b) In fire-isolated stairways or ramps, must not allow a 300 mm sphere to pass through, or, if rails are used –

(i) A 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and

(ii) The opening between rails must not be more than 460 mm.

D3D19 *Cont'd*

(c) If fixed to the vertical face forming an edge of a landing, balcony, deck, stairway or the like, the opening formed between the barrier and the face must not exceed 40 mm. The opening is measured horizontally from the edge of the trafficable surface to the nearest internal face of the barrier.

D3D20

Barrier climbability (prev. D2.16)

A required barrier located on a floor more than 4 m above the surface beneath, must not incorporate horizontal or near horizontal elements that could facilitate climbing between 150 mm and 760 mm above the floor.

D3D22

Handrails (prev. D2.17)

Handrails are required to all ramps or flights (2 risers or more) at a height not less than 865mm. The handrail must be continuous between stair flights and have no obstruction on or above them that will tend to break a handhold.

In a required exit serving an accessible area, it must be designed to clause 12 of AS14283.1.

Handrails within a SOU in Class 2 or 3 building, a handrail is to be provided to at least one side of the flight at a height of not less than 865mm. It must have no obstructions that will break a handhold, except for newel posts or the like.

D3D23

Fixed platforms, walkways, stairways and ladders (prev. D2.18)

A fixed platform, walkway, stairway, ladder and any going and riser, landing, handrail or barrier attached thereto may comply with AS 1657 in lieu of D3D14, D3D15, D3D17, D3D18, D3D19, D3D20, D3D21 and D3D22 if it only serves –

(a) machinery rooms, boiler houses, lift-machine rooms, plant-rooms, and the like; or

(b) non-habitable rooms, such as attics, storerooms and the like that are not used on a frequent or daily basis in the internal parts of a sole-occupancy unit in a Class 2 building or Class 4 part of a building.

D3D24 **Doorways and doors (prev. D2.19)**

A doorway serving as a required exit or forming part of a required exit must not be fitted with –

(a) a revolving door; and

(b) a roller shutter or tilt-up door unless—

(i) it serves a Class 6, 7 or 8 building or part with a floor area not more than 200 m^2; and
(ii) the doorway is the only required exit from the building or part; and
(iii) it is held in the open position while the building or part is lawfully occupied; and

(c) a sliding door unless it leads directly to road or open space and the door can be manually opened by a force of not more than 110N; and

(d) a power operated door It must be opened manually under a force of not more than 110N and if it leads directly to road or open space, must open automatically on power failure, or activation of a fire or smoke alarm.

D3D25 **Swinging doors (prev. D2.20)**

A swinging door in a required exit or forming part of a required exit must not encroach more than 500 mm on the required width of a required stairway, ramp or passageway if it is likely to impede the path of travel of the people already using the exit. Furthermore, such a swinging door must swing in the direction of egress, unless it serves a sanitary compartment, airlock or is the only required exit serving a building part with floor area not more than 200m^2 and is fitting with hold open device.

Exit / entry door in Shop G01, Shop G0,is proposed to swing inwards. If design amendments are not feasible, at CC stage a fire engineered performance solution can be pursued to justify these doors to swing against the direction of egress.

D3D26 **Operation of latch (prev. D2.21)**

Any door in a required exit, forming part of a required exit or in the path of travel to a required exit are required to be readily operable without a key from the side that faces a person seeking egress-

(a) By a single hand pushing or downward action on a single device located between 900mm and 1100mm from the floor-

(i) Be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and
(ii) Have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm nor more than 45mm.

(b) A single hand pushing action on a single device which is located between 900mm and 1.2m above the floor. Where the latch operation device is not located on the door, the power operated manual controls must be at least

D3D26 *Cont'd*

25mm wide, proud of the surrounding surface and located 500mm from an internal corner and between 1-2m of the doorway.

(c) Is fitted with a fail-safe device which automatically unlocks the door upon activation of any smoke or any other detector deemed suitable in accordance with AS1670.1-2018.

D3D28

Signs on doors (prev. D2.23)

Signs required of fire doors must be in capital letters not less than 20 mm high in a colour contrasting with the background and state:

(a) for an automatic door held open by an automatic hold-open device:
"FIRE SAFETY DOOR—DO NOT OBSTRUCT"; or

(b) for a self-closing door—
"FIRE SAFETY DOOR

DO NOT OBSTRUCT

DO NOT KEEP OPEN"; or

(c) for a door discharging from a fire-isolated exit:
"FIRE SAFETY DOOR—DO NOT OBSTRUCT"

D3D29

Protection of openable windows (prev. D2.24)

Window openings to bedrooms require protection, if the floor below the window is 2m above the surface beneath.

Protection need not be provided where the lowest level of the window is 1.7m or more above the finished floor level. Protection can be in the form of the following -

(a) The openable portion of the window must be protected with a device to restrict the window opening or a screen with secure fittings; and

(b) The device or screen must not permit a sphere greater than 125mm is permitted to pass through; and

(c) Resist the outward horizontal action of 250N against the window or screen; and

(d) Have a child resistant release mechanism if the screen is able to be removed, unlocked or over ridden; and

(e) Where the floor below the window is 4m or more above the floor, a barrier with a height of not less than 865mm above the floor is required in addition, to window protection as per (iv). The barrier must not have any horizontal or near horizontal elements between 150mm and 760mm must not facilitate climbing and have no gaps greater than 125mm.

4.5 Section E - Services and equipment

Part E1 - Fire fighting equipment

E1D2 **Fire Hydrants (prev. E1.3)**

A fire hydrant system complying with AS2419.1-2021 is required to serve the building, including -

(a) If internal hydrants are provided, all points on a floor are required to be within 40 m of an internal hydrant;

(b) If external hydrants are provided, all points on a floor are required to be within 70 m of an external hydrant;

(c) Where a sprinkler system is installed throughout the building in accordance with AS2118.1, AS2118.4, AS2118.6, FPAA101H or FPAA101D, the protection requirements to fire brigade booster assemblies and external hydrants do not apply;

(d) If the fire brigade booster assembly is within, or affixed to, the external wall of the building, the booster shall be within 20 m of the principal pedestrian entrance and be identified by a visual alarm device;

(e) if the fire brigade booster assembly is remote from the building it is required to be-

(i) adjacent to the site boundary and the principal vehicle access for the fire brigade pumping appliance to the building or site;
(ii) or within 20 m of the façade of the building containing the principal pedestrian entrance and within 20 m of the main pedestrian entrance

E1D3 **Hose Reels (prev. E1.4)**

A hose reel system complying with AS2441-2005 is required to serve the building, a fire hose reel system must be provided in accordance with the following –

(a) Hose reels are required to be located within 4m of an exit, except that a fire hose reel need not be located adjacent to every exit, provided system coverage can be achieved; and

(b) All points on a floor are required to be in reach of a 4m hose stream at the end of a 36m hose length laid on the floor;

(c) Additional hose reels can be installed along the path of travel where additional coverage is required.

NOTE - Hose reel coverage is not required in the Class 2 parts of the building.

E1D6 – E1D9	**Where sprinklers are required** The building is Class 2 and has a RIS of four (4), the entire building including basement carpark and retail part is required to be sprinkler protected. As design progresses to CC, it is recommended to analyse and compare different types of sprinkler system as the type of sprinkler system will govern DtS requirements and concessions as well as offer potential benefits should any fire engineered Performance Solution be pursued.
E1D14	**Portable fire extinguishers (prev. E1.6 and Table E1.6)** Portable fire extinguishers must be provided, selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.

Part E2 - Smoke hazard management

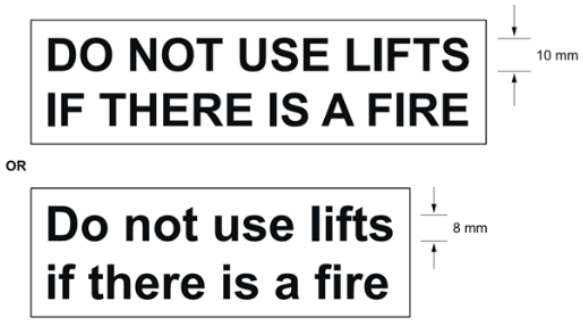
E2D8 & E2D9	**General requirements (prev. Table E2.2a)** The residential portions of the building including common areas must be provided with an automatic smoke detection and alarm system complying with Specification 20.
E2D12	**Class 7a buildings (prev. Table E2.2a)** The carpark portion of the building must be provided with a mechanical ventilation system in accordance with AS 1668.2, must comply with clause 5.5 of AS 1668.1.

Part E3 - Lift installations

E3D2	**Lift Installations (prev. E3.1)** An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification 24.
E3D3	**Stretcher facility in lifts (Prev. E3.2)** A stretcher facility is required to be provided to Lift 1, on the basis the passenger lift serves storeys above an effective height of 12 m. A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600 mm wide x 2000 mm long x 1400 mm high above the floor level.

E3D4 **Warning against the use of lifts in fire (prev. E3.3)**

A warning sign must be displayed where it can be readily seen near every call button for a passenger lift and comply with the details and dimensions of Figure E3D4 of the BCA.



E3D6 **Landings (prev. E3.5)**

Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Parts D2, D3 and D4.

Part E4 - Visibility in an emergency, exit signs and warning systems

E4D2 **Emergency lighting requirements (prev. E4.2)**

Emergency lighting complying with AS2293.1-2018 is required to be installed throughout every fire-isolated stairway, fire-isolated passageway, fire-isolated ramp, common areas, every passageway.

The design is to be certified by the dry fire designer at the construction certificate phase of the development.

E4D4 **Design and operation of emergency lighting (prev. E4.4)**

Every required emergency lighting system must comply with AS/NZS 2293.1-2018.

The design is to be certified by the dry fire designer at the construction certificate phase of the development.

E4D5 **Exit signs (prev. E4.5)**

An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each—

(a) door providing direct egress from a storey to—

(i) an enclosed stairway, passageway or ramp serving as a required exit;
(ii) an external stairway, passageway or ramp serving as a required exit;
(iii) an external access balcony leading to a required exit; and

(b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and

E4D5 *Cont'd*

(c) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4D2.

E4D6

Direction signs (prev. E4.6)

If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.

E4D8

Design and operation of exit signs (prev. E4.8)

Every required exit sign must—

(a) comply with—

(i) AS/NZS 2293.1; or
(ii) for a photoluminescent exit sign, Specification 25; and

(b) clearly visible at all times when the building is occupied by any person having the right of legal entry to the building.

4.6 Section F - Health and amenity

Part F1 – F3 - Surface water management, waterproofing, and weatherproofing

Part F1-F3

Surface water management waterproofing and weatherproofing

All drainage, waterproofing and weatherproofing is to be constructed to comply with part F1-F3 of the BCA. All drainage, waterproofing and weatherproofing is to be constructed to comply with part F1-F3 of the BCA.

Part F4 - Sanitary and other facilities

F4D2

Facilities in residential buildings (prev. F2.1)

Within each SOU, provide—

(a) a kitchen sink and facilities for the preparation and cooking of food; and

(b) a bath or shower; and

(c) a closet pan; and

(d) a washbasin.

For laundry facilities, provide either—

(a) in each SOU—

(i) clothes washing facilities, comprising at least one washtub and a space for a washing machine; and

F4D2 *Cont'd*

(ii) clothes drying facilities comprising clothes line or a hoist with not less than 7.5 m of line, or space for one heat operated drying cabinet or appliance in the same room as the clothes washing facilities; or

(b) separated shared laundry for each 4 SOUs, comprising of—

(i) clothes washing facilities, comprising at least one washtub and a space for a washing machine; and
(ii) clothes drying facilities comprising clothes line or a hoist with not less than 7.5 m of line per SOU, or space for one heat operated drying cabinet or appliance.

Note - a kitchen sink or washbasin must not be counted as a laundry washtub.

F4D3

Facilities in Class 3 -9 buildings (prev. F2.1)

Adequate facilities have been provided to the retail tenancies on the basis that only facilities for staff are required, it is assumed the two tenancies combined will have less than 10 staff. Facilities are not required for customers in a non-food retail tenancy if the occupancy does not exceed 600.

F4D8

Construction of sanitary compartments (prev. F2.5)

The door to a full enclosed sanitary compartment is required to:

(a) Open outwards;

(b) Slide; or

(c) Be readily removable from the outside of the sanitary compartment (i.e. lift-off hinges).

Unless there is a clear space of at least 1.2m between the closest pan within the sanitary compartment and the hinge side edge of the doorway.

Part F5 - Room heights

F5D2

Height of rooms and other spaces

Class 2:

(a) for a kitchen, laundry, or the like — 2.1m; and

(b) for a corridor, passageway or the like — 2.1m; and

(c) for a habitable room excluding a kitchen — 2.4m; and

(d) in a habitable room, or space within a habitable room, with a sloping ceiling or projections below the ceiling line—

(i) in an attic — a height of not less than 2.2 m for not less than two-thirds of the floor area of the room or space; and
(ii) in other rooms — a height of not less than 2.4 m for not less than two-thirds of the floor area of the room or space; and

F5D2 *Cont'd*

(e) in a non-habitable room, or space within a non-habitable room, with a sloping ceiling or projections below the ceiling line — a height of not less than 2.1 m for not less than two-thirds of the floor area of the room or space.

Class 6 & 7a:

(a) All areas — 2.4m, unless specified below

(b) Corridor, passageway, or the like — 2.1 m

(c) Bathroom, shower room, sanitary compartment, pantry, store room, garage, car parking area, or the like — 2.1 m; and

(d) Commercial kitchen — 2.4 m; and

(e) Above a stairway, ramp, landing or the like — 2 m

Part F6 - Light and ventilation

F6D2

Provision of natural light (Prev. F4.1)

Natural light must be provided in a Class 2 building to all habitable rooms.

F6D3

Methods and extent of natural light (prev. F4.2)

Natural light must be provided by—

(a) windows that—

(i) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the floor area of the room; and
(ii) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or

(b) roof lights, that—

(i) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the floor area of the room; and
(ii) are open to the sky; or

(c) a proportional combination of windows and roof lights

F6D4 **Natural light borrowed from adjoining room (prev. F4.3)**

Natural lighting to a room may come through one or more glazed panels or openings from an adjoining room if—

(a) the glazed panels or openings have an aggregate light transmitting area of not less than 10% of the floor area of the room to which it provides light; and

(b) the adjoining room has—

(i) windows, excluding roof lights, that—
- have an aggregate light transmitting area of not less than 10% of the combined floor areas of both rooms; and
- are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or

(ii) roof lights, that—
- have an aggregate light transmitting area of not less than 3% of the combined floor areas of both rooms; and
- are open to the sky; or

(iii) a proportional combination of windows and roof lights required by (i) and (ii).

F6D5 **Artificial lighting (prev. F4.4)**

Artificial lighting must be provided—

(a) in required stairways, passageways, and ramps; and

(b) if natural light of a standard equivalent to that required by F6D3 is not available, and the periods of occupation or use of the room or space will create undue hazard to occupants seeking egress in an emergency

The artificial lighting system must comply with AS/NZS 1680.0.

F6D6 **Ventilation of rooms (prev. F4.5)**

Natural or mechanical ventilation is required to be provided any habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose. If mechanical ventilation is proposed, Mechanical Engineer / Contractor to ensure the system is in accordance AS 1668.2-2012.

F6D11 **Carparks (prev. F4.11)**

Every storey of a carpark, except an open-deck carpark, must have—

(a) a system of mechanical ventilation complying with AS 1668.2; or

(b) a system of natural ventilation complying with Section 4 of AS 1668.4.

Part F7 - Sound transmission and insulation

F7D5 **Sound insulation rating of floors (prev. F5.5)**

A floor must have an $R_w + C_{tr}$ (airborne) not less than 50 and an $L_{n,w}$ (impact) not more than 62 if it separates—

(a) SOUs; or

(b) a SOU from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification.

F7D6 **Sound insulation rating of walls (prev. F5.6)**

A wall must -

(a) have an $R_w + C_{tr}$ (airborne) not less than 50, if it separates sole-occupancy units; and

(b) have an R_w (airborne) not less than 50, if it separates a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and

(c) comply with F7D4(2) if it separates—

(i) a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or
(ii) a sole-occupancy unit from a plant room or lift shaft.

(a) Door assembly must have an R_w not less than 30, if the door is in a wall that separates a SOU from a stairway, public corridor, public lobby or the like must

(b) Where a wall required to have sound insulation has a floor above, the wall must continue to—

(i) the underside of the floor above; or
(ii) a ceiling that provides the sound insulation required for the wall.

F7D7 **Sound insulation rating of internal services (prev. F5.6)**

If a duct or soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one (1) SOU, the duct or pipe must be separated from the rooms of any SOU by construction with an $R_w + C_{tr}$ (airborne) not less than:

(a) 40 if the adjacent room is a habitable room (other than a kitchen); or

(b) 25 if the adjacent room is a kitchen or non-habitable room.

The above is also applicable to any stormwater pipe that passes through a SOU.

F7D8 **Sound insulation rating of internal services (prev. F5.7)**

A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.

Part F6 Condensation Management

F8D3 **External wall construction (prev. F6.2)**

(a) Where a pliable building membrane is installed in an external wall, it must—

(i) comply with AS 4200.1; and
(ii) be installed in accordance with AS 4200.2; and
(iii) be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building.

(b) Where a pliable building membrane, sarking-type material or insulation layer is installed on the exterior side of the primary insulation layer of an external wall it must have a vapour permeance of not less than—

(i) in climate zones 4 and 5, 0.143 µg/N.s; and
(ii) in climate zones 6, 7 and 8, 1.14 µg/N.s.

(c) Except for single skin masonry and single skin concrete, where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity.

F8D4 **Exhaust systems (prev. F6.3)**

(a) An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of—

(i) 25 L/s for a bathroom or sanitary compartment; and
(ii) 40 L/s for a kitchen or laundry.

(b) Exhaust from a kitchen, kitchen range hood, bathroom, sanitary compartment or laundry must discharge directly or via a shaft or duct to outdoor air.

F8D4 *Cont'd*

(c) Where space for a clothes drying appliance is provided in accordance with F4D2(1)(b), space must also be provided for ducting from the clothes drying appliance to outdoor air.

(d) does not apply if a condensing-type clothes drying appliance is installed.

(e) An exhaust system that is not run continuously and is serving a bathroom or sanitary compartment that is not ventilated in accordance with F6D7 must—

(i) be interlocked with the room's light switch; and
(ii) include a run-on timer so that the exhaust system continues to operate for 10 minutes after the light switch is turned off.

(f) Except for rooms that are ventilated in accordance with F6D7, a room with space for ducting a clothes drying appliance to outdoor air in accordance with (c) must be provided with make-up air in accordance with AS 1668.2.

4.7 Section G - Ancillary provisions

Part G1 - Minor structures and components

G1D3

Swimming Pools

A swimming pool with a depth of water more than 300 mm, must have suitable barriers to restrict access by young children to the immediate pool surrounds in accordance with AS 1926.1 and AS 1926.2.

A water recirculation system in a swimming pool with a depth of water more than 300 mm must comply with AS 1926.3.

NSW G1D5

Provision for cleaning windows

The windows located three (3) or more storeys above the street level shall be able to be cleaned from wholly within the building or by a method complying with Work Health and Safety Act 2011 and Regulations made under the Act.

5.0 CONCLUSION

Our strategy for ensuring compliance will be refined and documented during the design process in conjunction with the continual development of the architectural documentation, as required.

Based upon our assessment to date we are of the opinion that the subject development is capable of achieving compliance with the performance provisions of the BCA. Compliance would be achieved via a mixture of adopting a performance based approach as well as complying with the relevant deemed-to-satisfy requirements as outlined within the BCA, compliance via the performance based approach could occur without significant changes to the proposed design.

The Performance Solutions for the building will be developed as part of the ongoing design and consultation with the design team.

Report By

David Yan
Building Regulations Consultant
For Design Confidence (Sydney) Pty Ltd

Verified By

Lindsay Beard
Principal | Building Regulations
For Design Confidence (Sydney) Pty Ltd

APPENDIX 1 – DOCUMENTATION PROVIDED FOR ASSESSMENT

This BCA assessment was based upon the architectural documentation prepared by Koichi Takada Architects namely—

DRAWING NUMBER	REV	TITLE	DATE
A0010	C	CONTEXT PLAN	24.08.2023
A0011	C	SITE ANAYLSIS PLAN	24.08.2023
A0012	C	SITE PLAN	24.08.2023
A0013	C	DEMOLITION PLAN	24.08.2023
A0099	C	BASEMENT 1 - FLOOR PLAN	24.08.2023
A0100	C	GROUND FLOOR - FLOOR PLAN	24.08.2023
A0101	C	LEVEL 01 - FLOOR PLAN	24.08.2023
A0102	C	LEVEL 02 - FLOOR PLAN	24.08.2023
A0103	C	LEVEL 03 - FLOOR PLAN	24.08.2023
A0104	C	LEVEL 04 - FLOOR PLAN	24.08.2023
A0105	C	ROOF PLAN - FLOOR PLAN	24.08.2023
A0200	C	WEST ELEVATION (BARRENJOEY RD)	24.08.2023
A0201	C	NORTH ELEVATION (SIDE)	24.08.2023
A0202	C	EAST ELEVATION (REAR)	24.08.2023
A0203	C	SOUTH ELEVATION (SIDE)	24.08.2023
A0300	C	SECTION 01	24.08.2023
A0301	C	SECTION 02	24.08.2023
A0302	C	SECTION 03	24.08.2023
A0304	C	SECTION 04	24.08.2023

APPENDIX 2 – ABBREVIATIONS & DEFINITIONS

The following acronyms and abbreviations are used throughout the report.

ACRONYM / ABBREVATION	DEFINITION
AS	Australian Standard
CHF	Critical Heat Flux
BCA	Building Code of Australia 2022
DTS	Deemed to Satisfy
FRL	Fire-resistance level
FH	Fire hydrant
FHR	Fire hose reel
NCC	National Construction Code
PFE	Portable fire extinguisher
PBDB	Performance Based Design Brief
RC	Reinforced concrete
SOU	Sole occupancy unit
SPEC.	Specification
U-Value	Thermal transmittance

DEFINITIONS

The following definitions are provided for words used throughout the report.

Accessible

Accessible means having features to enable use by people with a disability.

Combustible

A material — means combustible as determined by AS 1530.1; and construction or part of a building — means constructed wholly or in part of combustible materials.

Deemed-to-Satisfy Provisions

Provisions which are deemed to satisfy the Performance Requirements.

Deemed-to-Satisfy Solution

A method of satisfying the Deemed-to-Satisfy Provisions.

Effective height

Effective height means the vertical distance between the floor of the lowest storey included in a determination of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units).

Exit

Exit means –

Any, or any combination of the following if they provide egress to a road or open space—

(a) An internal or external stairway.

(b) A ramp.

(c) A fire-isolated passageway.

(d) A doorway opening to a road or open space.

(e) A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Fire compartment

Fire compartment means –

(a) the total space of a building; or

(b) when referred to in—

(i) the Performance Requirements — any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or

(ii) the Deemed-to-Satisfy Provisions — any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of construction and where all openings in the separating construction are protected in accordance with the Deemed-to Satisfy Provisions of the relevant Part.

Fire-resistance level (FRL)

Fire-resistance level (FRL) means the grading periods in minutes determined in accordance with Specification A2.3, for the following criteria—

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

— expressed in that order.

Note: A dash means that there is no requirement for that criterion. For example, 90/–/– means there is no requirement for an FRL for integrity and insulation, and –/–/– means there is no requirement for an FRL.

Fire-source feature

(a) the far boundary of a road, river, lake or the like adjoining the allotment; or

(b) a side or rear boundary of the allotment; or

(c) an external wall of another building on the allotment which is not a Class 10 building

Fire wall

Fire wall means a wall with an appropriate resistance to the spread of fire that divides a storey or building into fire compartments.

Loadbearing

Intended to resist vertical forces additional to those due to its own weight.

Non-combustible

Non-combustible means—

(a) applied to a material — not deemed combustible as determined by AS 1530.1:1994 — Combustibility Tests for Materials; and

(b) applied to construction or part of a building — constructed wholly of materials that are not deemed combustible

Occupiable outdoor area

Occupiable outdoor area means a space on a roof, balcony or similar part of a building–

(a) that is open to the sky; and

(b) to which access is provided, other than access only for maintenance; and

(c) that is not open space or directly connected with open space.

Open space

Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

Performance Requirement

Performance Requirement means a requirement which states the level of performance which a Performance Solution or Deemed-to-Satisfy Solution must meet.

Performance Solution

Performance Solution means a method of complying with the Performance Requirements other than by a Deemed-to-Satisfy Solution.

Sole-occupancy unit

Sole-occupancy unit means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes—

(a) a dwelling; or

(b) a room or suite of rooms in a Class 3 building which includes sleeping facilities: or

(c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or

(d) a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

APPENDIX 3 – FRLS

Table A1 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

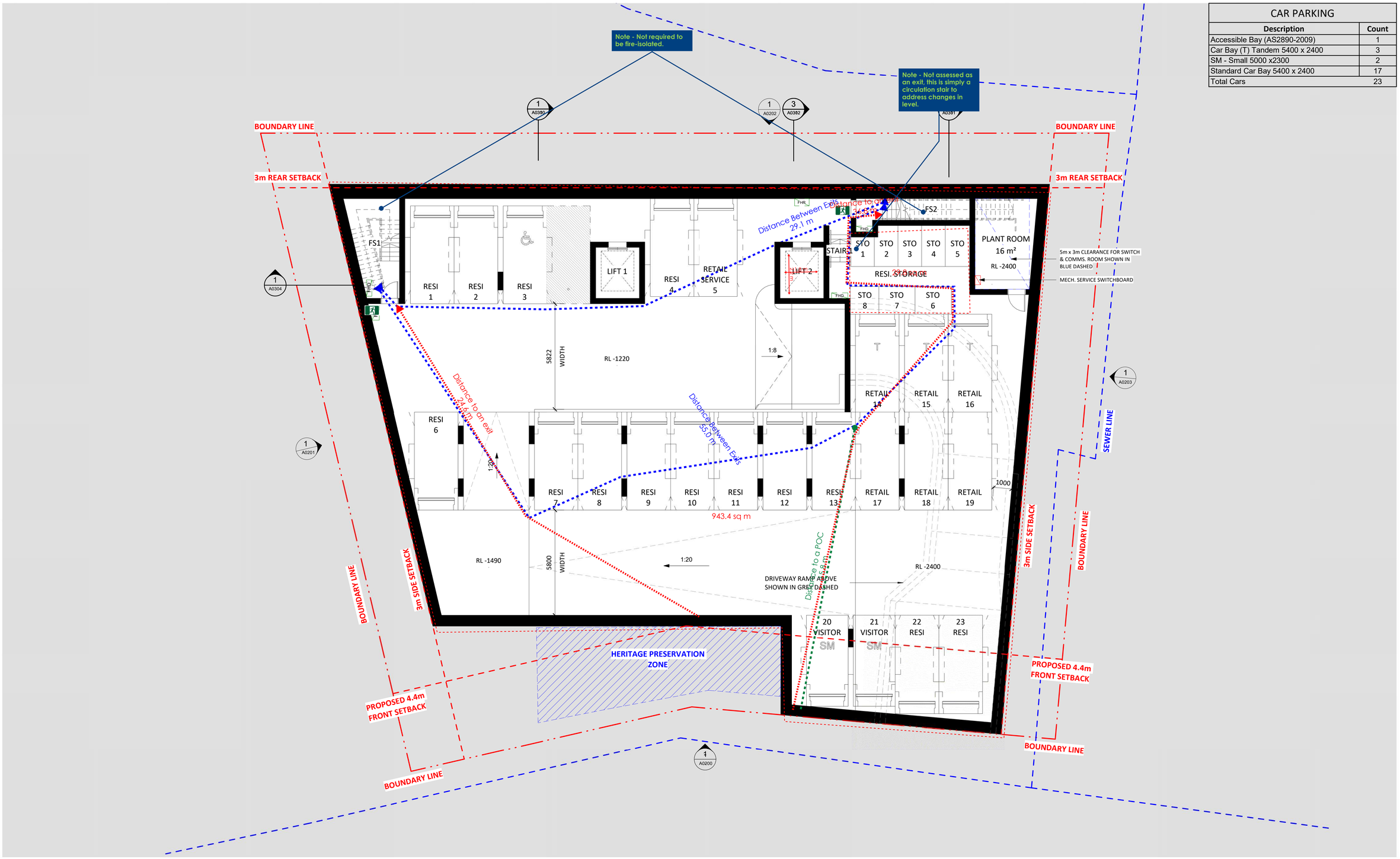
Building element	Class of building — FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120	240/240/180
3 m or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90	240/180/ 90
For non-*loadbearing* parts—				
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180	–/240/240
1.5 to less than 3 m	–/ 60/ 60	–/ 90/ 90	–/180/120	–/240/180
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
Loadbearing	90/–/–	120/–/–	180/–/–	240/–/–
Non-loadbearing	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
Fire-resisting lift and stair *shafts*—				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Non-*loadbearing*	–/ 90/ 90	–/120/120	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	90/ 90/ 90	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—				
Loadbearing	90/ 90/ 90	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion—				
Loadbearing	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
Non-*loadbearing*	–/ 90/ 90	–/ 90/ 90	–/120/120	–/120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES				
and COLUMNS—	90/–/–	120/–/–	180/–/–	240/–/–
FLOORS	90/ 90/ 90	120/120/120	180/180/180	240/240/240
ROOFS	90/ 60/ 30	120/ 60/ 30	180/ 60/ 30	240/ 90/ 60

Table A1.1 REQUIREMENTS FOR CARPARKS

Building element				FRL (not less than) Structural adequacy/Integrity/Insulation ESA/M (not greater than)
Wall				
(a)	*external wall*			
	(i)	less than 3 m from a *fire-source feature* to which it is exposed:		
			Loadbearing	60/60/60
			Non-*loadbearing*	–/60/60
	(ii)	3 m or more from a *fire-source feature* to which it is exposed		–/–/–
(b)	*internal wall*			
	(i)	*loadbearing*, other than one supporting only the roof (not used for carparking)		60/–/–
	(ii)	supporting only the roof (not used for carparking)		–/–/–
	(iii)	non-*loadbearing*		–/–/–
(c)	*fire wall*			
	(i)	from the direction used as a *carpark*		60/60/60
	(ii)	from the direction not used as a *carpark*		as *required* by Table A1
Column				
(a)	supporting only the roof (not used for carparking) and 3 m or more from a *fire-source feature* to which it is exposed			–/–/–
(b)	steel column, other than one covered by (a) and one that does not support a part of a building that is not used as a *carpark*			60/–/– or 26 m^2/tonne
(c)	any other column not covered by (a) or (b)			60/–/–
Beam				
(a)	steel floor beam in continuous contact with a concrete floor slab			60/–/– or 30 m^2/tonne
(b)	any other beam			60/–/–
Fire-resisting lift and stair shaft (within the *carpark* only)				60/60/60
Floor slab and vehicle ramp				60/60/60
Roof (not used for carparking)				–/–/–
Notes:		1.	ESA/M means the ratio of exposed surface area to mass per unit length.	
		2.	Refer to Spec. 17 for special requirements for a sprinkler system in a *carpark* complying with Table 3.9 and located within a multi-classified building.	

APPENDIX 4 – DRAWING MARK-UPS

CAR PARKING	
Description	**Count**
Accessible Bay (AS2890-2009)	1
Car Bay (T) Tandem 5400 x 2400	3
SM - Small 5000 x2300	2
Standard Car Bay 5400 x 2400	17
Total Cars	23



NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

OTHERS

CLIENT
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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

DWG TITLE
BASEMENT 1 - FLOOR PLAN

STATUS
DEVELOPMENT APPLICATION

DWG NO.
A0099

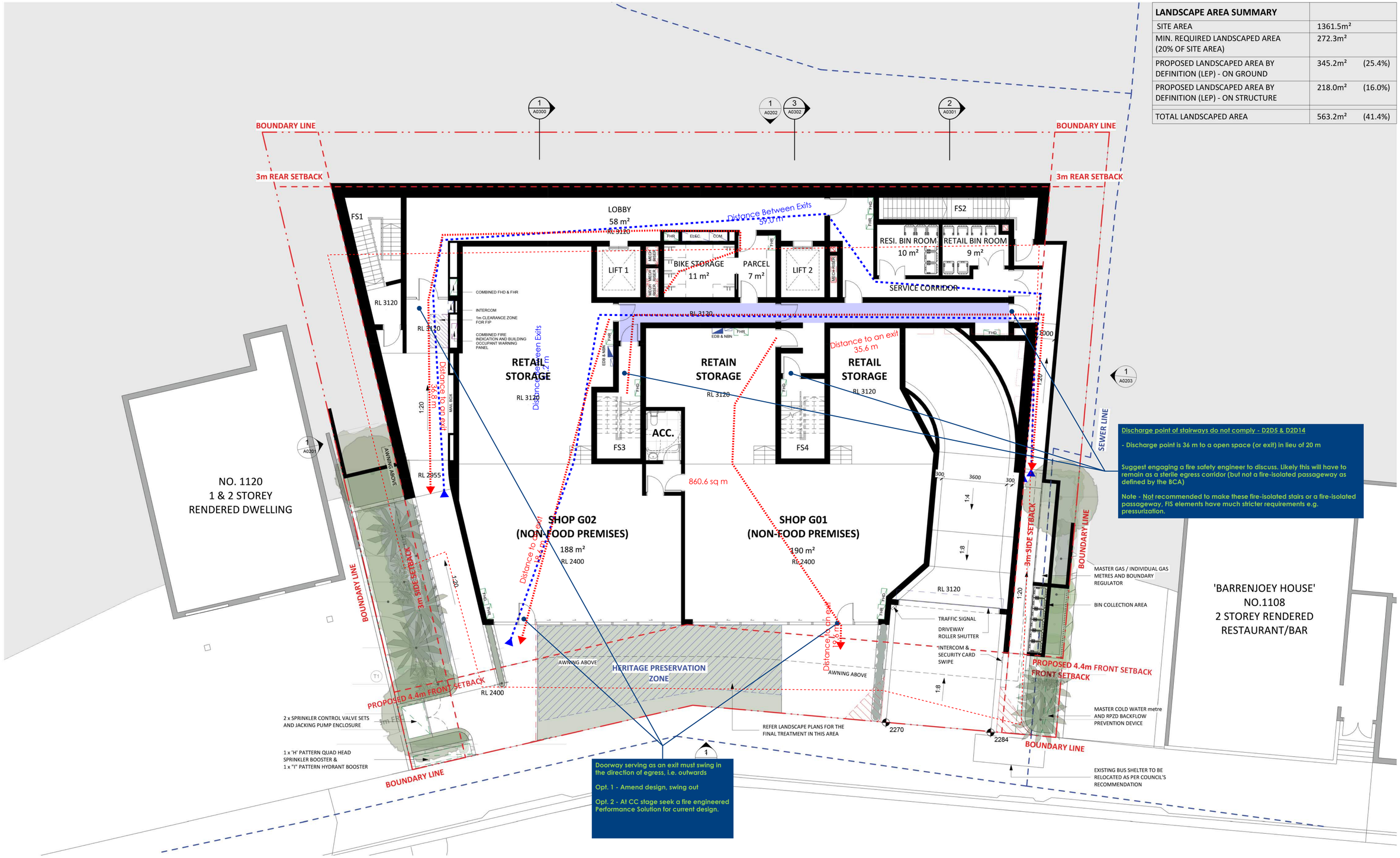
REVISION
C

0 5 m

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

LANDSCAPE AREA SUMMARY		
SITE AREA	1361.5m²	
MIN. REQUIRED LANDSCAPED AREA (20% OF SITE AREA)	272.3m²	
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON GROUND	345.2m²	(25.4%)
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON STRUCTURE	218.0m²	(16.0%)
TOTAL LANDSCAPED AREA	563.2m²	(41.4%)



NO	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND: REVISION, ON HOLD

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OTHERS

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LEVEL 1, 600 DARLING STREET
ROZELLE NSW 2039

ARCHITECT
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61 MARLBOROUGH ST
SURRY HILLS, NSW 2010
T 02 9698 8510
ABN 63 131 365 896
NOMINATED ARCHITECT:
KOICHI TAKADA
NSW ARCHITECTS 6901
VIC ARCHITECTS 16179
QLD ARCHITECTS 5590
KOICHITAKADA.COM
Koichi Takada Architects

QA STAMP

PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

DWG TITLE
GROUND FLOOR - FLOOR PLAN

DWG NO. A0100

REVISION C

SCALE 1:100@A1, 1:200@A3

DATE 24.08.23

LANDSCAPE AREA SUMMARY		
SITE AREA	1361.5m²	
MIN. REQUIRED LANDSCAPED AREA (20% OF SITE AREA)	272.3m²	
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON GROUND	345.2m²	(25.4%)
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON STRUCTURE	218.0m²	(16.0%)
TOTAL LANDSCAPED AREA	563.2m²	(41.4%)

NOTE
SILVER LEVEL HOUSING COMPLYING UNIT TO HAVE STEP FREE ENTRY THRESHOLD TO COMPLY WITH LIVABLE HOUSING GUIDELINE (SILVER LEVEL)

NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

OTHERS:

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ROZELLE NSW 2039

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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

DWG TITLE
LEVEL 01 - FLOOR PLAN

STATUS
DEVELOPMENT APPLICATION

DWG NO.
A0101

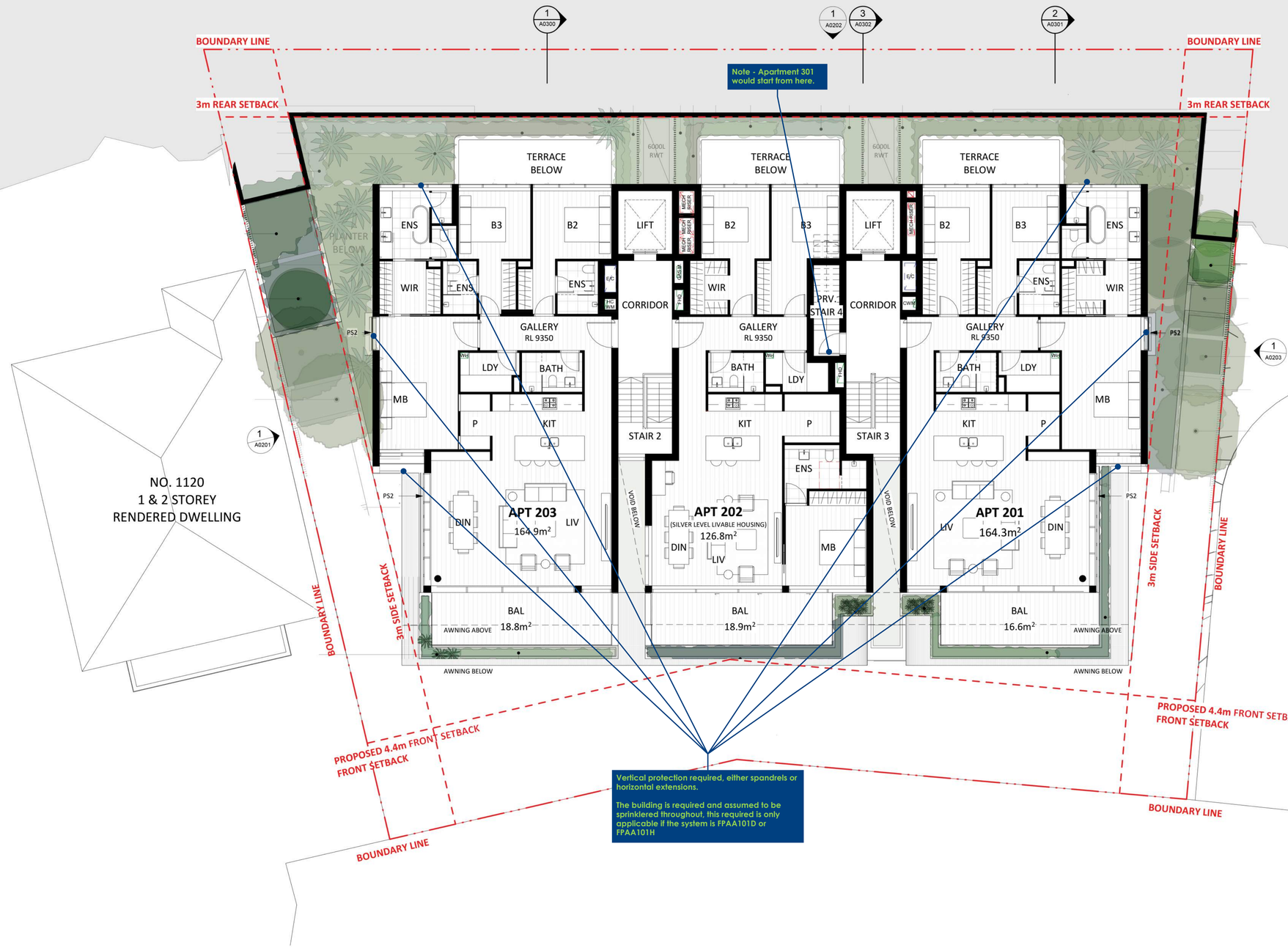
REVISION
C

0 5 m

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

LANDSCAPE AREA SUMMARY		
SITE AREA	1361.5m²	
MIN. REQUIRED LANDSCAPED AREA (20% OF SITE AREA)	272.3m²	
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON GROUND	345.2m²	(25.4%)
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON STRUCTURE	218.0m²	(16.0%)
TOTAL LANDSCAPED AREA	563.2m²	(41.4%)



NOTE
SILVER LEVEL HOUSING COMPLYING UNIT TO HAVE STEP FREE ENTRY THRESHOLD TO COMPLY WITH LIVABLE HOUSING GUIDELINE (SILVER LEVEL)

NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

OTHERS:

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LEVEL 1, 600 DARLING STREET
ROZELLE NSW 2039

ARCHITECT
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61 MARLBOROUGH ST
SURRY HILLS, NSW 2010
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ABN 63 131 365 896
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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

DWG TITLE
LEVEL 02 - FLOOR PLAN

STATUS
DEVELOPMENT APPLICATION

DWG NO.
A0102

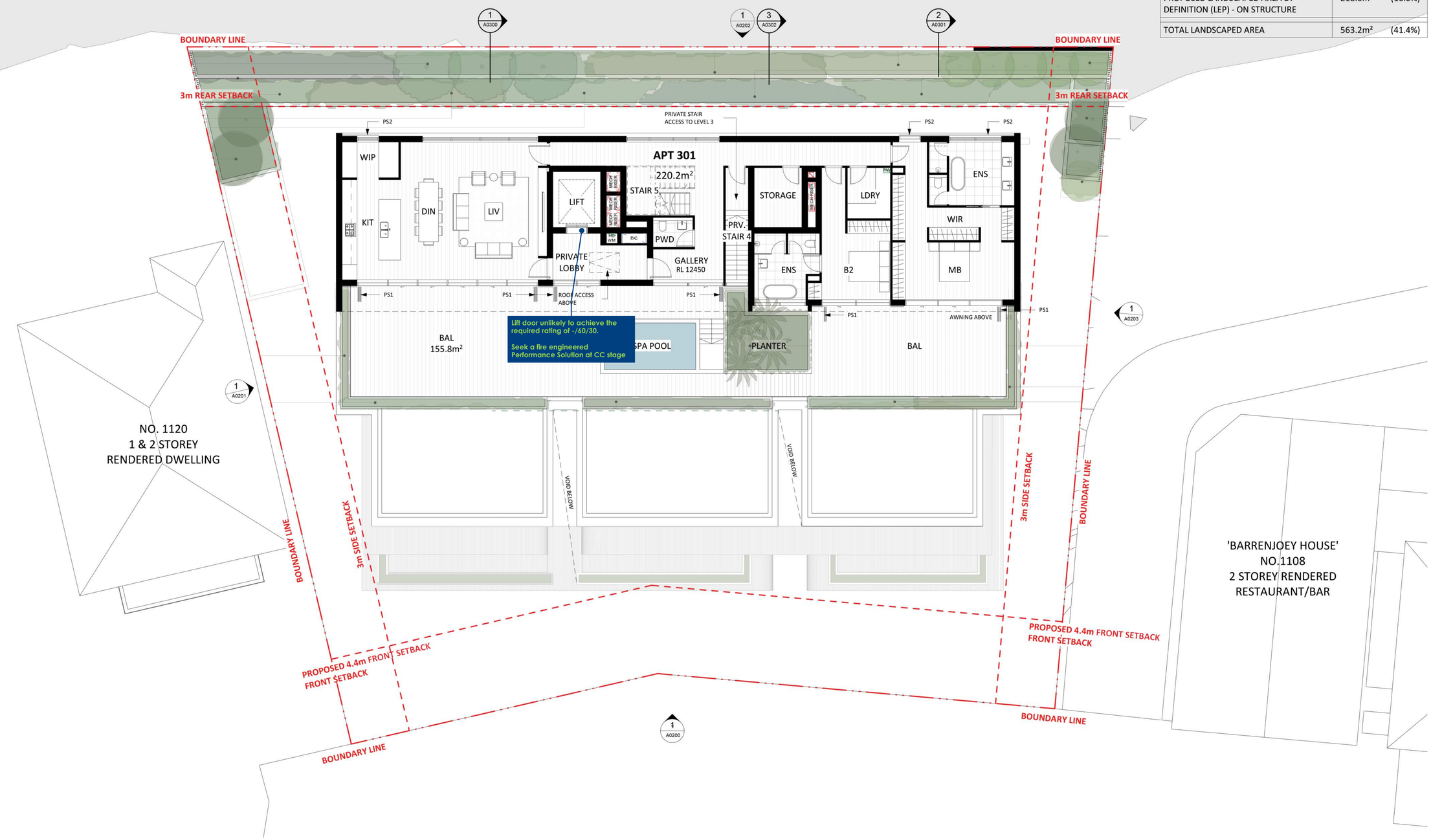
REVISION
C

0 5 m

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

LANDSCAPE AREA SUMMARY		
SITE AREA	1361.5m²	
MIN. REQUIRED LANDSCAPED AREA (20% OF SITE AREA)	272.3m²	
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON GROUND	345.2m²	(25.4%)
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON STRUCTURE	218.0m²	(16.0%)
TOTAL LANDSCAPED AREA	563.2m²	(41.4%)



NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

OTHERS:

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PALMDEV PTY LTD
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ROZELLE NSW 2039

ARCHITECT
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ABN 63 131 365 896
NOMINATED ARCHITECT:
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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

DWG TITLE
LEVEL 03 - FLOOR PLAN

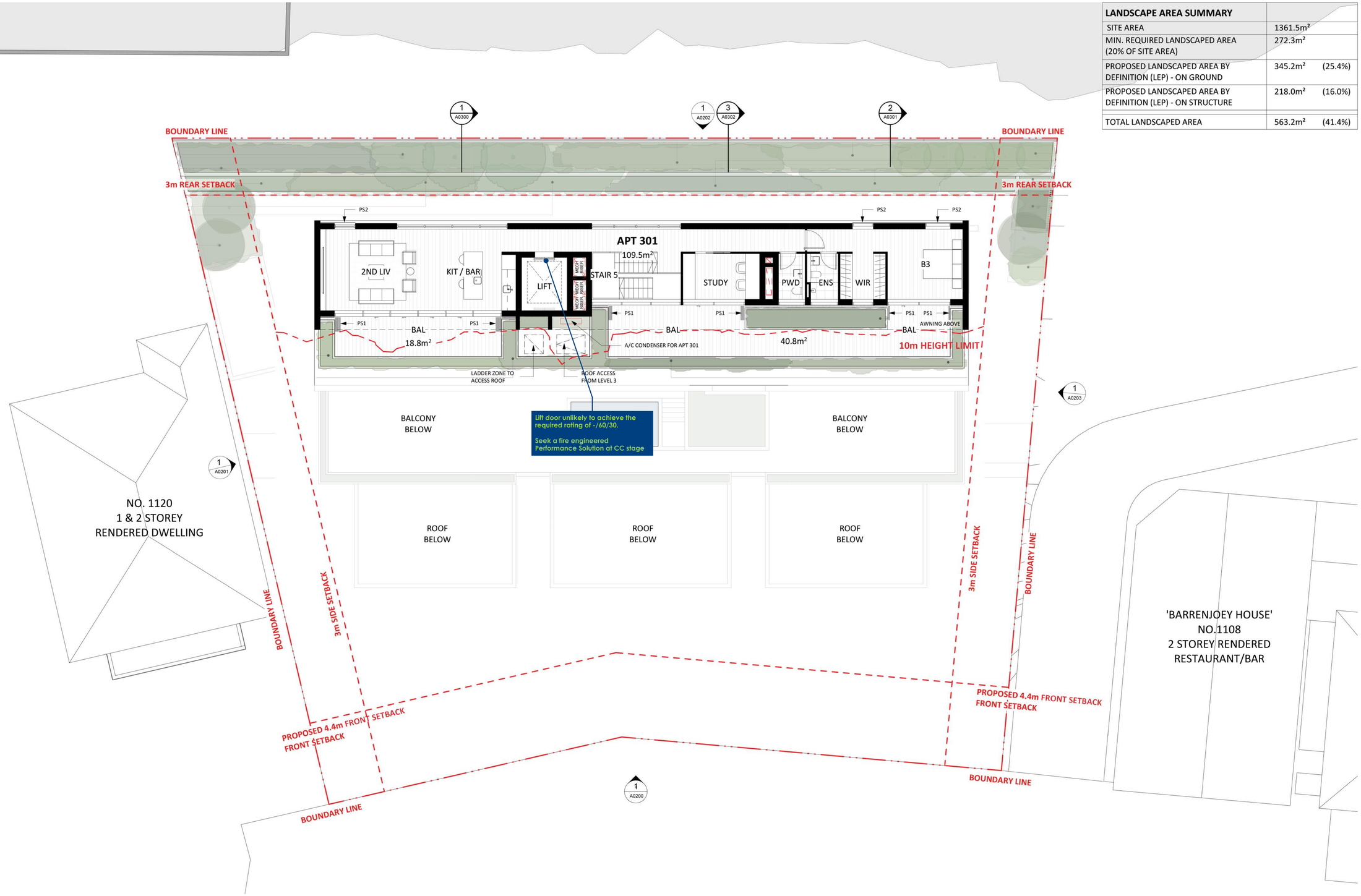
DWG NO.
A0103

REVISION
C

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

LANDSCAPE AREA SUMMARY		
SITE AREA	1361.5m²	
MIN. REQUIRED LANDSCAPED AREA (20% OF SITE AREA)	272.3m²	
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON GROUND	345.2m²	(25.4%)
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON STRUCTURE	218.0m²	(16.0%)
TOTAL LANDSCAPED AREA	563.2m²	(41.4%)



NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

OTHERS

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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

DWG TITLE
LEVEL 04 - FLOOR PLAN

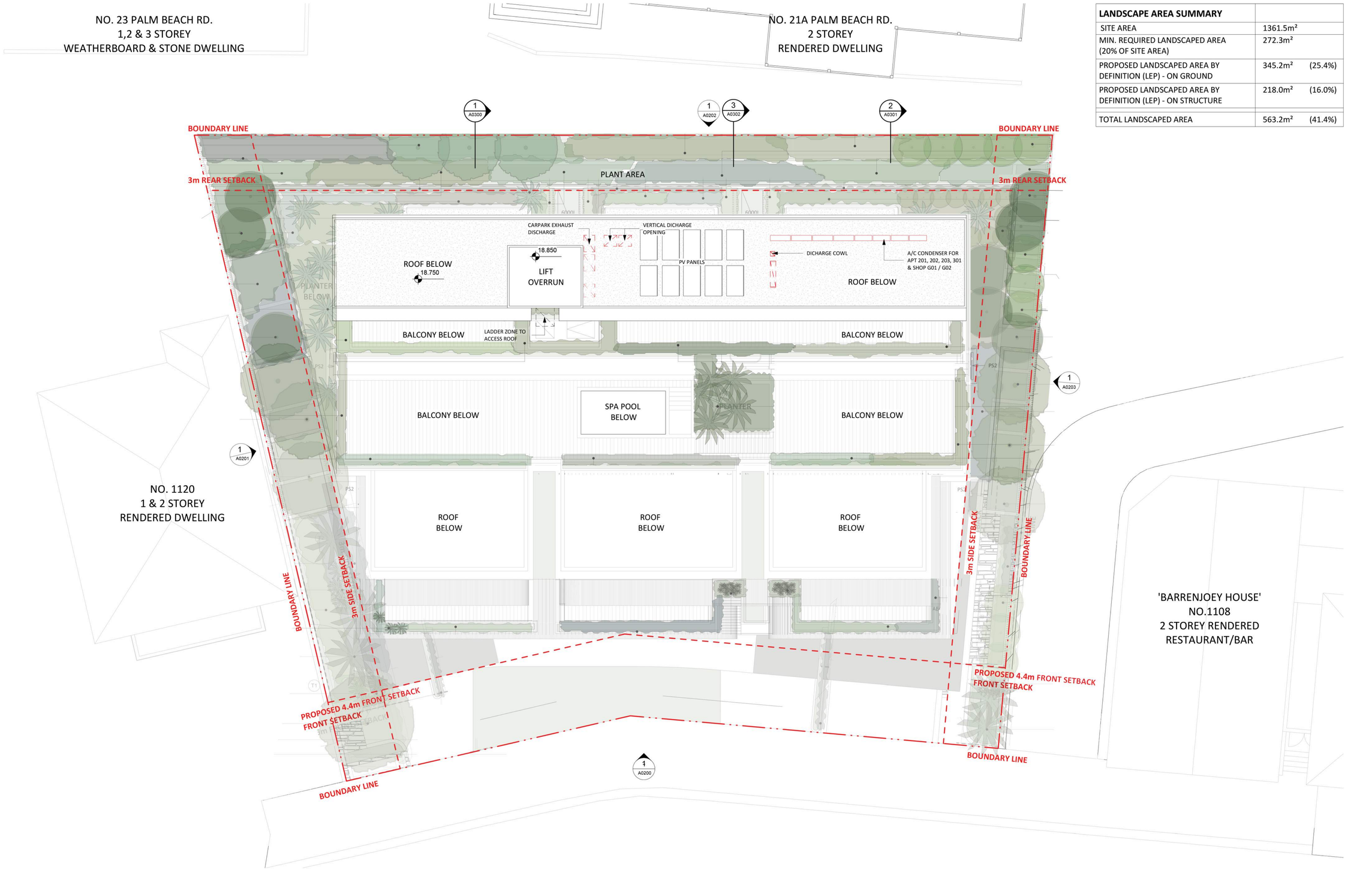
DWG NO.
A0104

REVISION
C

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

LANDSCAPE AREA SUMMARY		
SITE AREA	1361.5m²	
MIN. REQUIRED LANDSCAPED AREA (20% OF SITE AREA)	272.3m²	
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON GROUND	345.2m²	(25.4%)
PROPOSED LANDSCAPED AREA BY DEFINITION (LEP) - ON STRUCTURE	218.0m²	(16.0%)
TOTAL LANDSCAPED AREA	563.2m²	(41.4%)



NO	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

DWG TITLE
ROOF PLAN - FLOOR PLAN

DWG NO.
A0105

REVISION
C

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

LEGEND

AL 01	TIMBER LOOK ALUMINIUM BATTEN
AL 02	TIMBER LOOK ALUMINIUM SCREEN
AL 03	TIMBER LOOK ALUMINIUM FENCE
GL 01	GLAZING
GL 02	GLAZED BALUSTRADE
RE 01	ACRYLIC RENDER FINISH (LIGHT GREY)
SND 01	SANDSTONE CLADDING

NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

OTHERS

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ROZELLE NSW 2039

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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

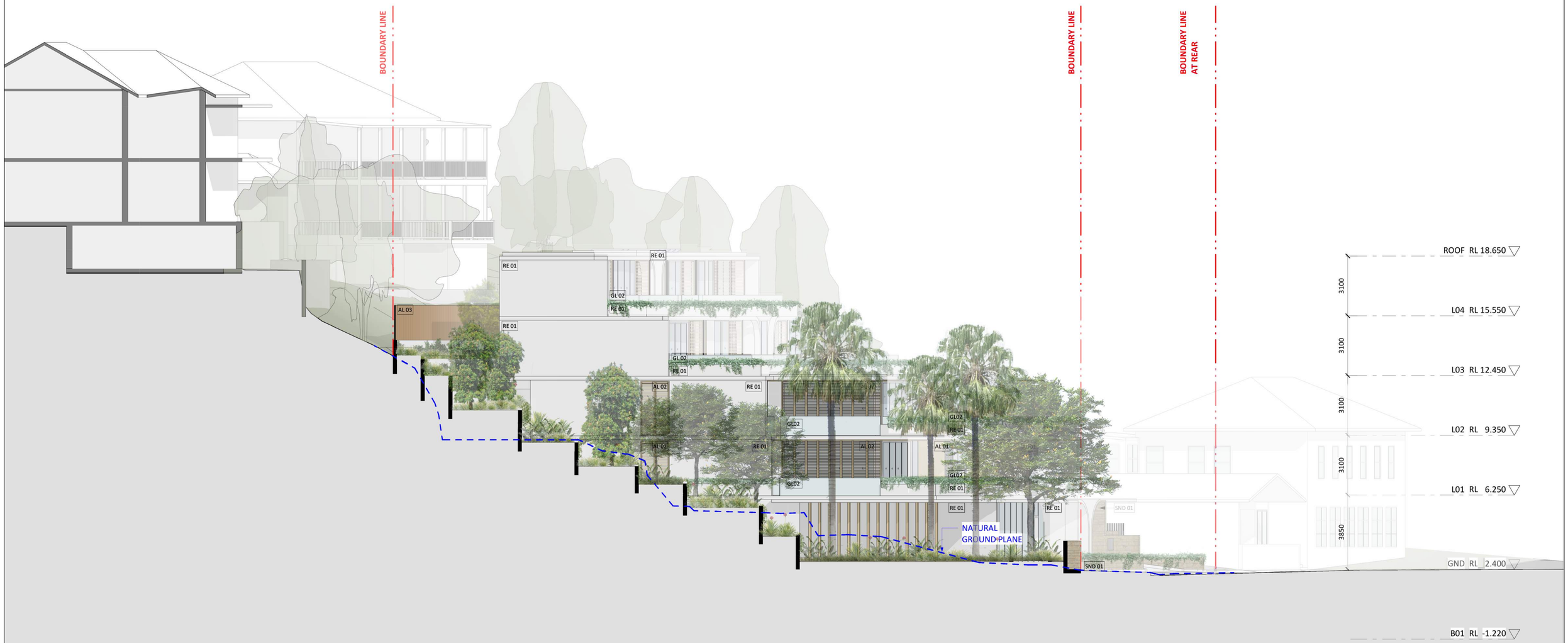
DWG TITLE
WEST ELEVATION (BARRENJOEY RD)

DWG NO.
A0200

REVISION
C

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23



LEGEND

AL 01	TIMBER LOOK ALUMINIUM BATTEN
AL 02	TIMBER LOOK ALUMINIUM SCREEN
AL 03	TIMBER LOOK ALUMINIUM FENCE
GL 01	GLAZING
GL 02	GLAZED BALUSTRADE
RE 01	ACRYLIC RENDER FINISH (LIGHT GREY)
SND 01	SANDSTONE CLADDING

NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND: REVISION, ON HOLD

OTHERS

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ROZELLE NSW 2039

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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

DWG TITLE
NORTH ELEVATION (SIDE)

STATUS
DEVELOPMENT APPLICATION

DWG NO.
A0201

REVISION
C

0 5 m

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

LEGEND

AL 01	TIMBER LOOK ALUMINIUM BATTEN
AL 02	TIMBER LOOK ALUMINIUM SCREEN
AL 03	TIMBER LOOK ALUMINIUM FENCE
GL 01	GLAZING
GL 02	GLAZED BALUSTRADE
RE 01	ACRYLIC RENDER FINISH (LIGHT GREY)
SND 01	SANDSTONE CLADDING

NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

OTHERS:

CLIENT:
PALMDEV PTY LTD

LEVEL 1, 600 DARLING STREET
ROZELLE NSW 2039

ARCHITECT
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SURRY HILLS, NSW 2010
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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

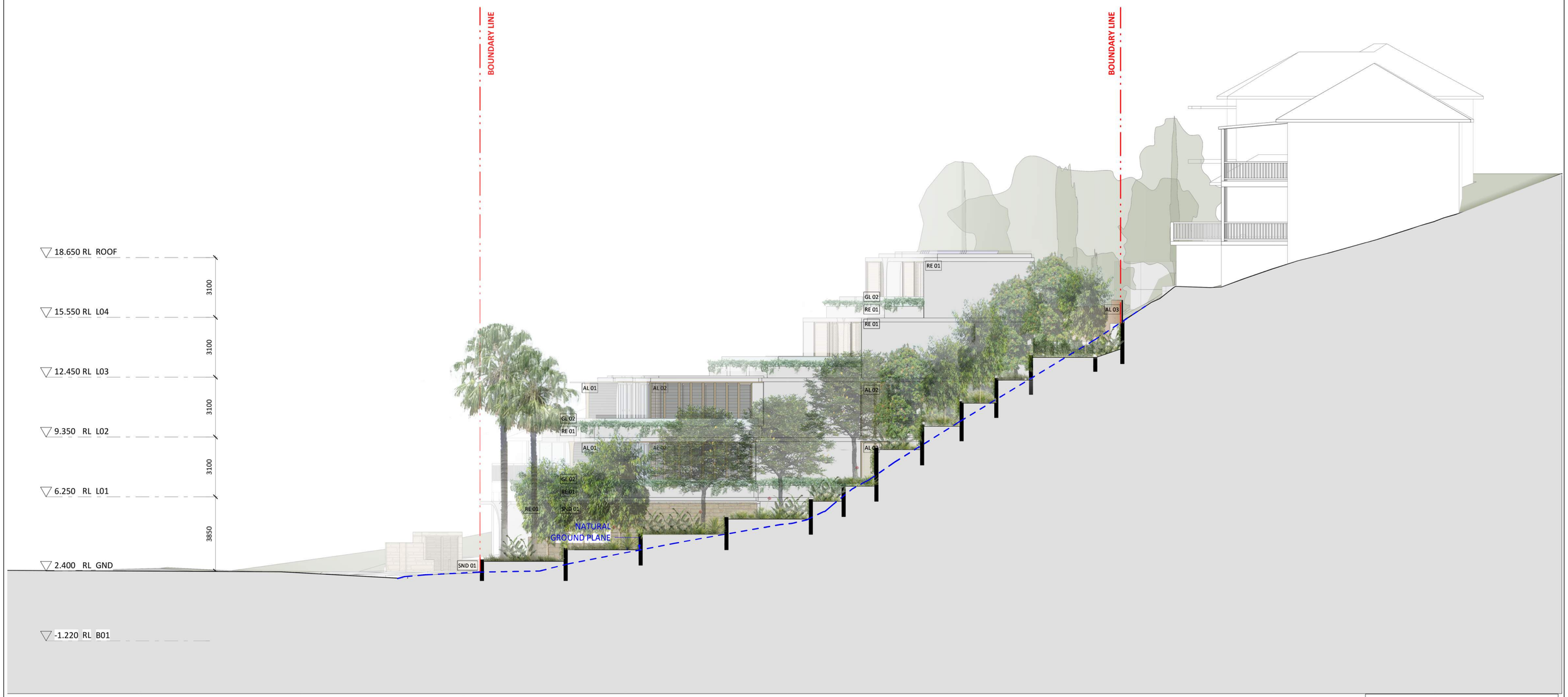
DWG TITLE
EAST ELEVATION (REAR)

DWG NO.
A0202

REVISION
C

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23



LEGEND

AL 01	TIMBER LOOK ALUMINIUM BATTEN
AL 02	TIMBER LOOK ALUMINIUM SCREEN
AL 03	TIMBER LOOK ALUMINIUM FENCE
GL 01	GLAZING
GL 02	GLAZED BALUSTRADE
RE 01	ACRYLIC RENDER FINISH (LIGHT GREY)
SND 01	SANDSTONE CLADDING

NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

OTHERS

CLIENT
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LEVEL 1, 600 DARLING STREET
ROZELLE NSW 2039

ARCHITECT
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61 MARLBOROUGH ST
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PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

DWG TITLE
SOUTH ELEVATION (SIDE)

DWG NO.
A0203

REVISION
C

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

21A PALM BEACH RD.

2 STOREY
RENDERED DWELLING

1112-1116 BARRENJOEY RD.

BOUNDARY LINE

BOUNDARY LINE

PV PANELS

APT 301

APT 301

APT 203

APT 103

LOBBY

SHOP G01

NATURAL SANDSTONE CUT WALL
SUBJECT TO CONDITION OF ROCK

RL 3.120

720

RL 2.400

23.00°

CAR PARK

CAR PARK

RL -1.220

10m HEIGHT PLANE

8.5m HEIGHT PLANE

NGL + FLOOD PLANE RL 3.12

SLOPE ANGLE WITHIN THE BUILDING LINE
SHOWN IN ORANGE LINE (23.00° = 42.45%)

BARRENJOEY RD.

ROOF RL 18.650

3100

L04 RL 15.550

3100

L03 RL 12.450

3100

L02 RL 9.350

3100

L01 RL 6.250

3850

GND RL 2.400

3620

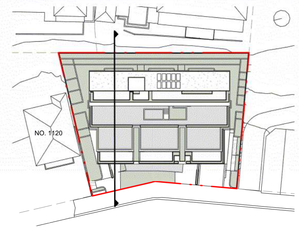
B01 RL -1.220

GROUND PLANE TYPES

10m HEIGHT PLANE

8.5m HEIGHT PLANE

NATURAL GROUND
+ FLOOD PLANE LINE (RL 3.12)



KEY PLAN

NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND

REVISION ON HOLD

OTHERS

CLIENT

PALMDEV PTY LTD

LEVEL 1, 600 DARLING STREET
ROZELLE NSW 2039

ARCHITECT

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WIP: 03/08/23

PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

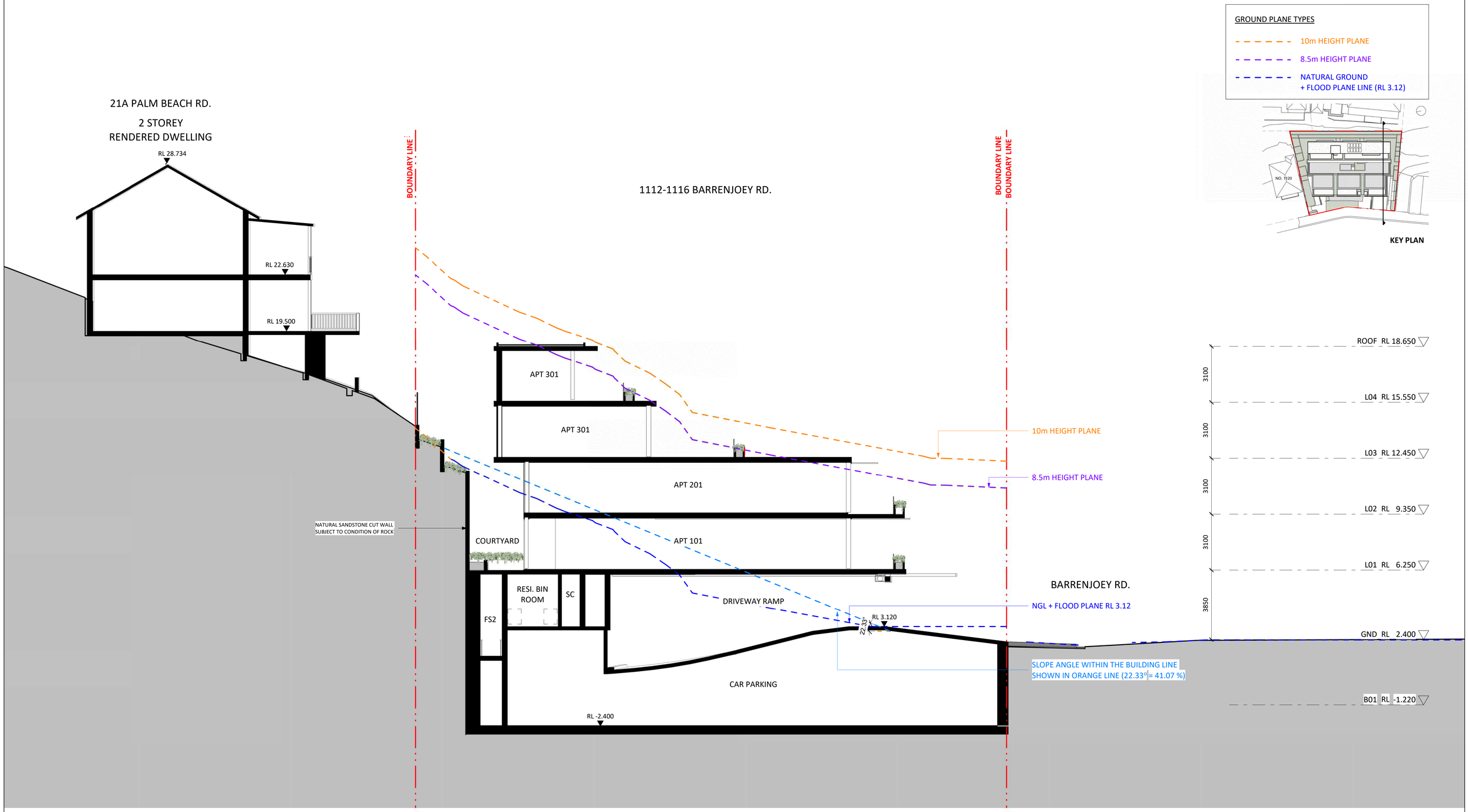
DWG TITLE
SECTION 01

DWG NO.
A0300

REVISION
C

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23



NO.	REVISION	BY	CHK	DATE
A	FOR DA SUBMISSION	DK	GW	16.12.21
B	FOR AMENDED DA SUBMISSION	DK	RPW	25.07.23
C	FOR AMENDED DA SUBMISSION	DK	SL	24.08.23

REVISION NOTES:

KEY PLAN

CLOUD LEGEND
REVISION
ON HOLD

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WIP: 03/08/23

PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

DWG TITLE
SECTION 02

DWG NO.
A0301

REVISION
C

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

21A PALM BEACH RD.

2 STOREY
RENDERED DWELLING

1112-1116 BARRENJOEY RD.

BOUNDARY LINE

BOUNDARY LINE

RL 28.734

RL 22.630

RL 19.500

RL 16.100

RL 14.300

PV PANELS

APT 301

APT 301

APT 301

LOBBY

APT 201

FS4

COURTYARD

LIFT

LOBBY

APT 101

FS4

LOBBY

FS4

SHOP G02

CAR PARKING

DRIVEWAY RAMP

CAR PARK

22.90°

SANDSTONE WALL SUBJECT TO CONDITION OF ROCK

10m HEIGHT PLANE

8.5m HEIGHT PLANE

NGL + FLOOD PLANE RL 3.12

SLOPE ANGLE WITHIN THE BUILDING LINE
SHOWN IN CYAN LINE (22.90° = 42.24%)

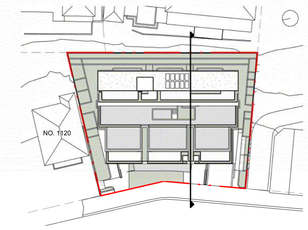
BARRENJOEY RD.

GROUND PLANE TYPES

10m HEIGHT PLANE

8.5m HEIGHT PLANE

NATURAL GROUND
+ FLOOD PLANE LINE (RL 3.12)



KEY PLAN

ROOF RL 18.650

3100

L04 RL 15.550

3100

L03 RL 12.450

3100

L02 RL 9.350

3100

L01 RL 6.250

3850

GND RL 2.400

3620

B01 RL -1.220

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WIP: 03/08/23

PROJECT
1112-1116 BARRENJOEY RD
1112 - 1116 BARRENJOEY ROAD, PALM BEACH

STATUS
DEVELOPMENT APPLICATION

0 5 m

DWG TITLE
SECTION 03

DWG NO.
A0302

REVISION
C

SCALE
1:100@A1, 1:200@A3

DATE
24.08.23

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