MINERVA

17 May 2023

Attention: Andreas Brohl

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Project:	469-483 Balmain Road, Lilyfield
Document Reference:	22228-DA-001
Revision	D

Development Application | Fire Engineering Letter of Support

469-483 Balmain Road, Lilyfield

Dear Andreas,

The purpose of this letter is to accompany the DA submission for the proposed mix-used development located at 469-483 Balmain Road, Lilyfield NSW 2040. This is for the purposes of demonstrating that although there are some non-compliances with the prescriptive requirements of the Building Code of Australia (BCA), we have assessed the preliminary design and are comfortable that these can be addressed through fire engineering analysis.

The proposed mix-used development will consist of the following with a shared podium on ground floor:

- Retention of two character buildings located along Balmain Road to be used as multi-functional retail and storage tenancies,
- New multi-functional light industrial tenancies with an atrium incorporated,
- Shared podium between Building A and B,
- Residential units up to 6 storeys with two storeys of basement,

A general overview of the existing character and proposed development can be found in Figure 1 to Figure 9.

Figure 1: Existing arrangement

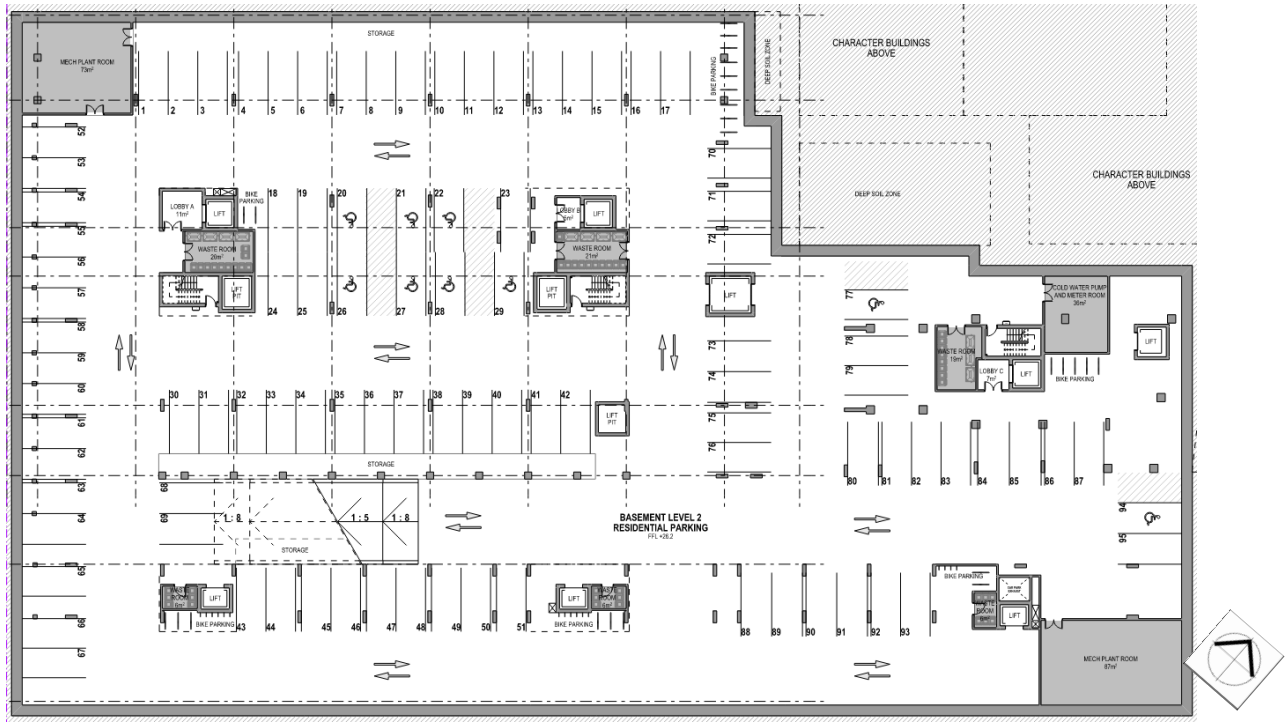

Figure 2: Proposed development (Basement 2)

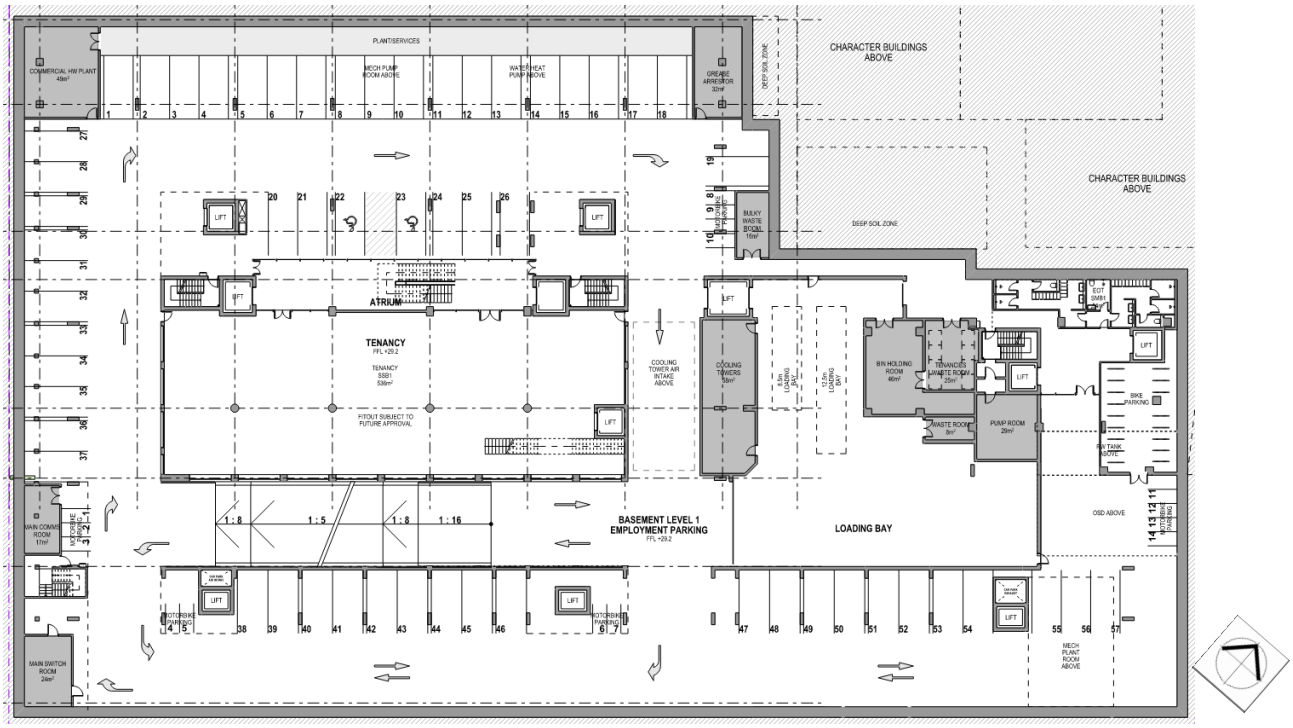

Figure 3: Proposed development (Basement 1)

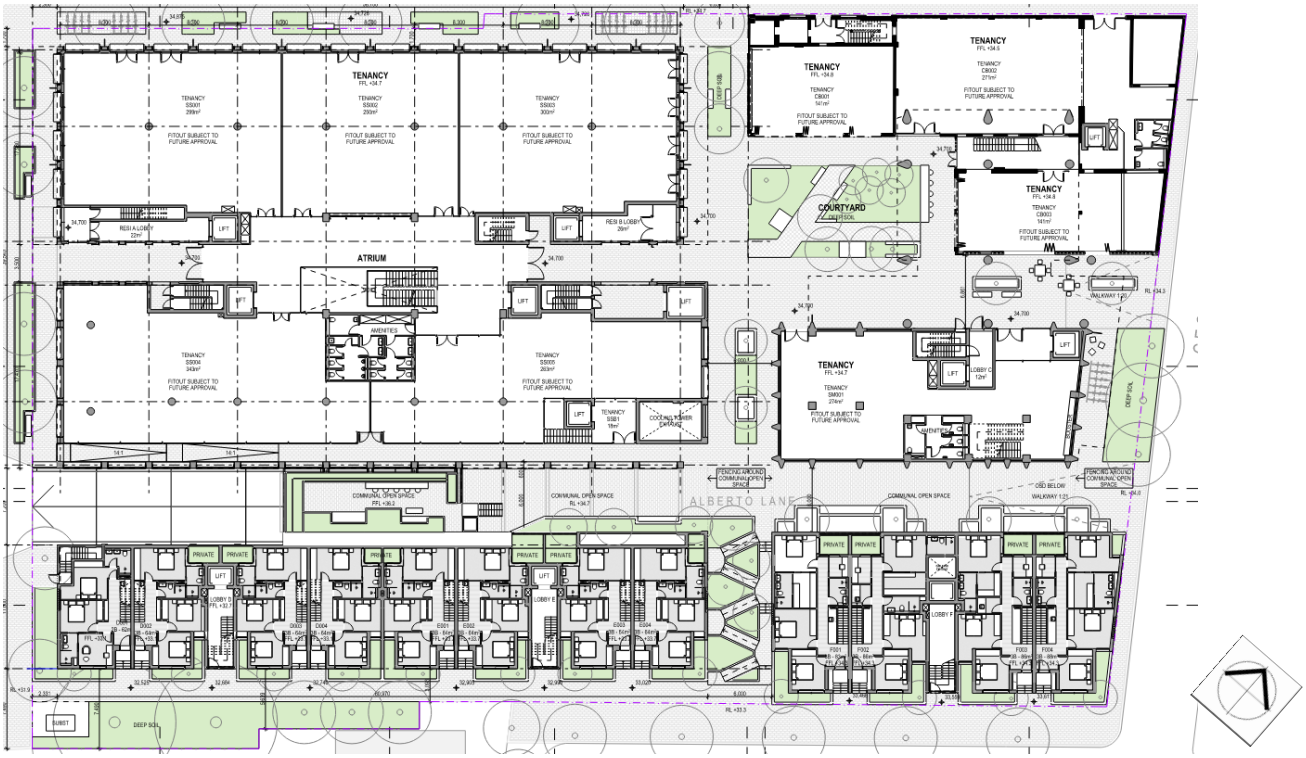

Figure 4: Proposed development (Ground floor)

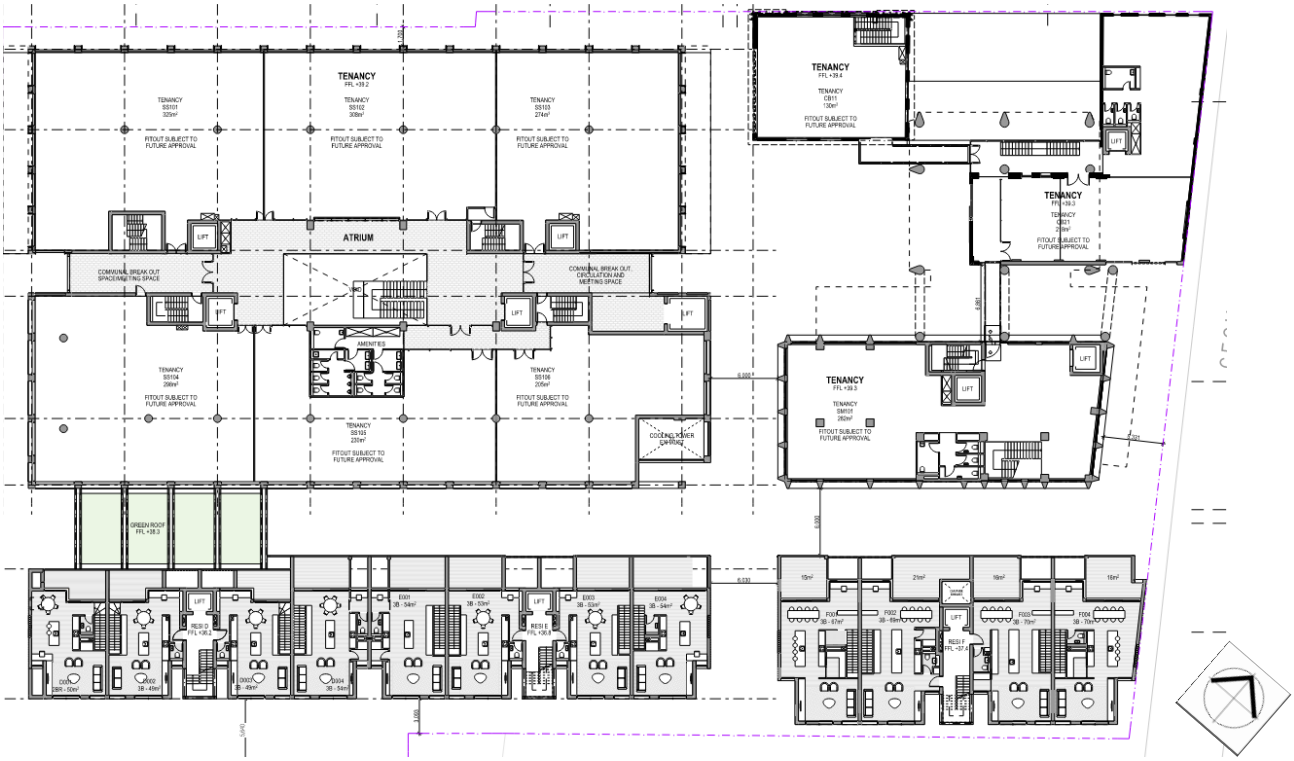

Figure 5: Proposed development (Level 1)

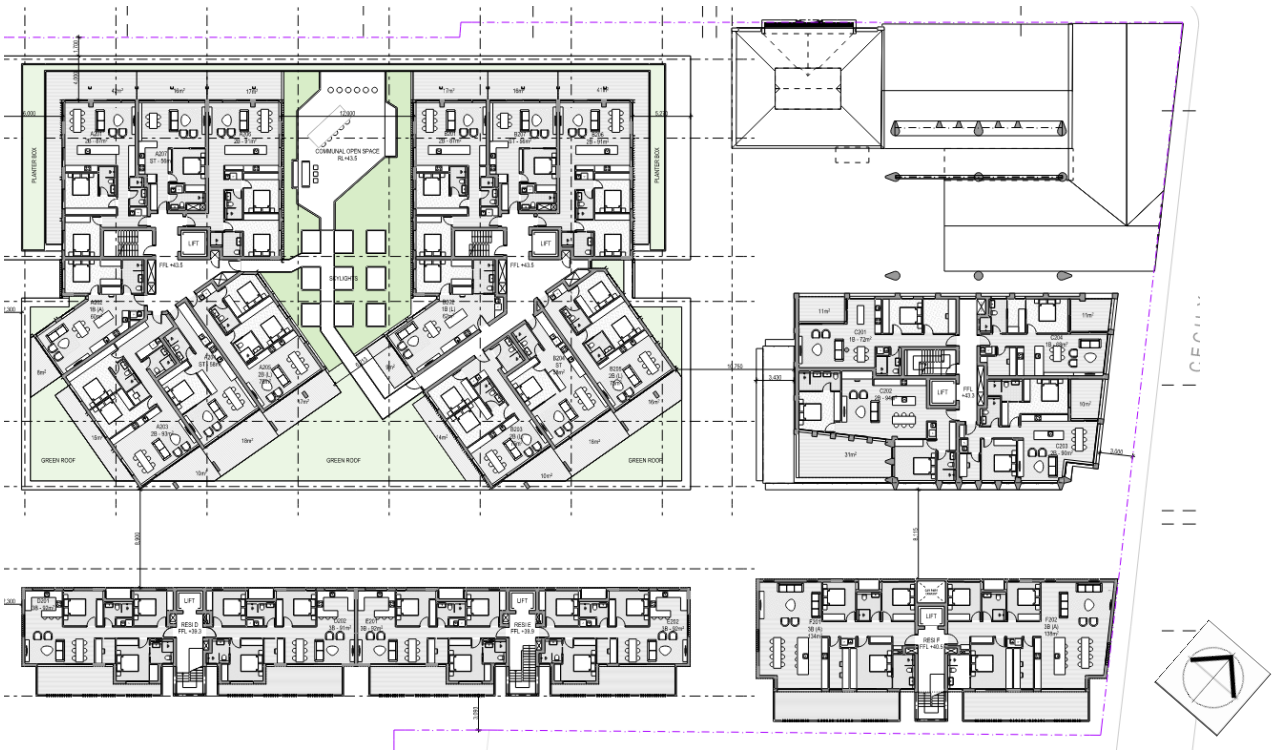

Figure 6: Proposed development (Level 2)

Figure 7: Proposed development (Level 3)

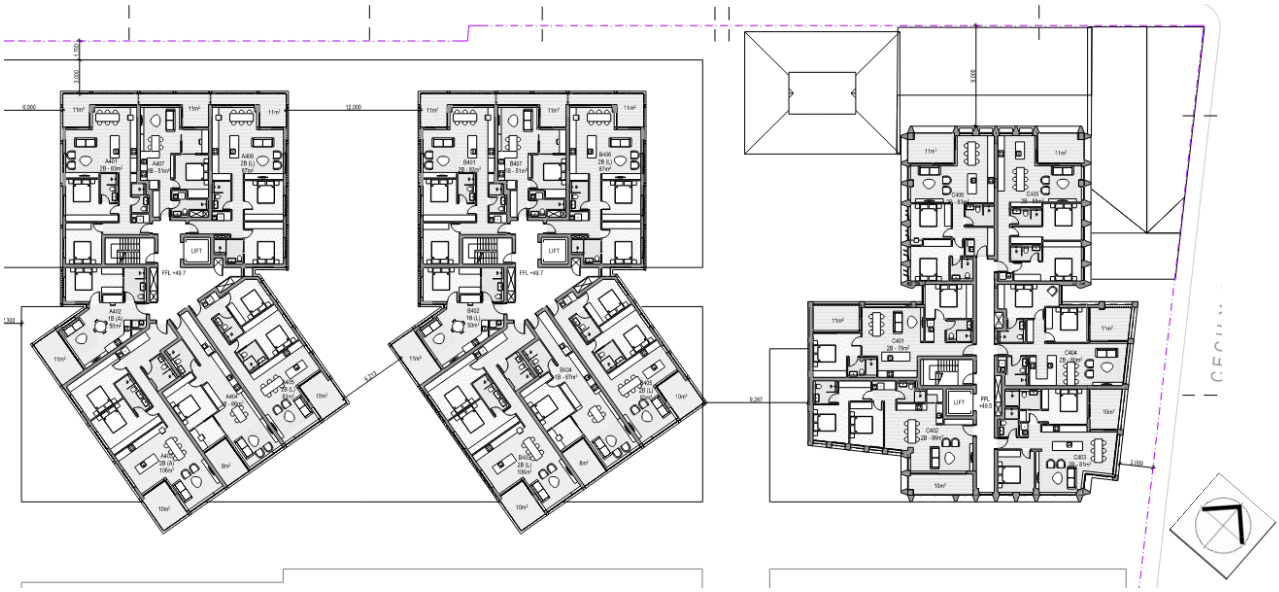

Figure 8: Proposed development (Level 4)

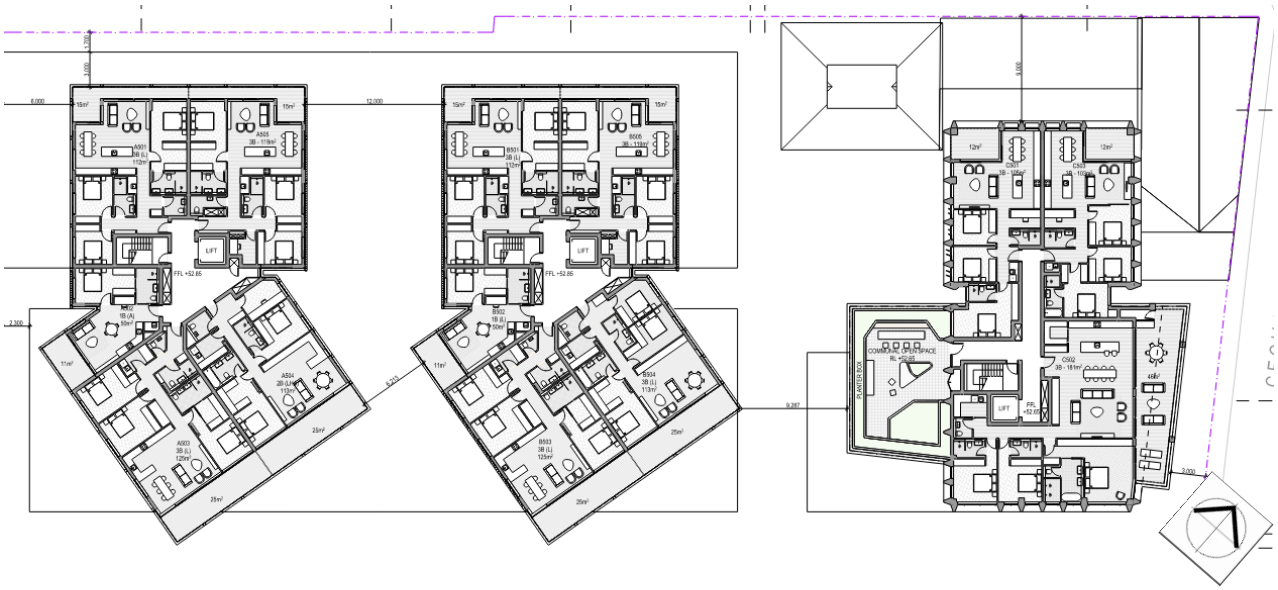

Figure 9: Proposed development (Level 5)

Our design review has been based on the following documents:

- Building Code Capability Statement by Code Consultancy Group dated 11 May 2023 (BCAS 2210-01)
- Architectural DA drawings by Chrofi dated 28 April 2023.

The fire safety design will generally satisfy the Performance Requirements of the Building Code of Australia by complying with the Deemed-to-Satisfy Provisions. There are some aspects of the design that will require the use of Performance-Based fire engineering to achieve compliance with the relevant Performance Requirements of the BCA. Code Consultancy Group have identified some non-compliance against the BCA in their BCA Report which are listed in Appendix A. We have also identified a list of non-compliances based on drawings used as part of Code Consultancy Groups BCA markup which is incorporated in Appendix A. Subject to approval from the Principal Certifying Authority and relevant stakeholders, the proposed Performance Solutions outlined in

Appendix A will be demonstrated as meeting the Performance Requirements of the BCA during later phases of the design process.

This document is for the purposes of supporting the proposed design for DA. It shall not be used for Construction Documentation and compliance with the Performance Requirements of the BCA will need to be verified through a formal fire engineering assessment by a *Certifier – Fire Safety* during later stages of the design process.

Should you have any queries, please do not hesitate to contact the undersigned.

Yours sincerely,

Author

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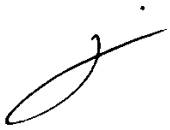

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Appendix A – Indicative Performance Solutions

The following table lists the indicative Performance Solutions which will likely need to be supported through fire engineering analysis during later stages of the project. These have been based on the Building Code Capability Statement by Code Consultancy Group dated 11 May 2023, and those we have identified during our further review of the design.

Table 1: Indicative Performance Solutions

Ref.	DtS Requirement	Description
A.	C2D2 – Type of construction required C3D9 – Separation of classifications in the same storey C3D10 – Separation of classifications in the different storeys C4D6 – Doorways in fire walls Specification 5– Fire-resisting construction	The mixed-use tenancies (Class 6/7b) on Basement 1 and Ground floor are to have construction achieving an FRL of 120 minutes in lieu of 240 minutes (subject to final calculations). These tenancies may also have glazed components which are not fire rated (subject to detailed review).
B.	C2D2 – Type of construction required C3D9 – Separation of classifications in the same storey C3D10 – Separation of classifications in the different storeys Specification 5– Fire-resisting construction	Due to the buildings character the following building elements are proposed to be retained: - Non-fire rated timber floors serving Creative Tenancies CB11 and CB21 located above the CB001, CB002 and CB003 tenancies which are required to achieve an FRL of 180/180/180, - Existing loadbearing walls which is not possible to verify to comply with S5C11a for Class 5 and 6 parts which are required to achieve an FRL of -/-/120 and 180/120/90 respectively, - Existing loadbearing external columns which is not possible to verify to comply with S5C11 in Class 6 and 6 parts which are required to achieve an FRL of 120/60/30 and 180/120/90 respectively.
C.	C2D2 – Type of construction required C3D10 – Separation of classifications in the different storeys Specification 5– Fire-resisting construction	The slab thickness for the wet areas within the residential units are to be reduced down to 180 mm which achieves an FRL of 60/60/60 in lieu of 90/90/90.
D.	C2D2 – Type of construction required Specification 1– Fire-resistance of building elements Specification 5– Fire-resisting construction	The perimeter slab edge between storeys is not separated in accordance with a tested system to achieve the required FRL in accordance with Specification C1.1 (subject to detailed review). Internal SOU bounding walls and inside facing external wall coverings do not extend to the external wall without an external wall cavity.
E.	C2D2 – Type of construction required Specification 1– Fire-resistance of building elements Specification 5– Fire-resisting construction	The external loadbearing steel columns at the top storey is to be protected with a passive fire protection system complying with BCA Clause S1C2 of Specification 1, except the connection details to the non-fire rated roof structure.
F.	C2D2 – Type of construction required Specification 1– Fire-resistance of building elements Specification 5– Fire-resisting construction	Drainage pipes associated with the hydrant system are located within the fire-isolated stairways. These pipes do not supply water for fire services.
G.	C4D11(1)(a) – Openings in fire-isolated lift shafts	To permit the fire lift landing doors used throughout the development to comply with BS 476:22 (European fire test) in lieu of AS 1735.11:1986. Clause 2.2.1 of AS 1735.11:1986 specifies testing to be completed in accordance with AS 1530.4:2014.
H.	C2D14 – Ancillary elements	It has been identified that there will be a green wall as part of the development. These are typically combustible due to the interlocking plastic panels that form part of the structure of the green wall. There are also expected to be additional components

		on the green wall structure (plastic pots, plants, etc) which are also combustible. This will be assessed as a Performance Solution (subject to detailed review).
I.	D2D5 – Exit travel distances D2D6) – Distance between alternative exits	There are extended travel distances in the following locations: <u>Basement 2</u> - Up to 50 m in lieu of 40 m to an exit - Up to 98 m in lieu of 60 m between alternative exits (note: A door providing egress via the mechanical plant room at the western corner will be required) <u>Basement 1:</u> - Up to 21 m in lieu of 20 m to a point of choice, - Up to 50 m in lieu of 40 m to an exit, - Up to 97 m in lieu of 60 m between alternative exits (note: doorways will be required through the commercial hot water plant room) <u>Level 1:</u> - Up to 30 m in lieu of 20 m to a point of choice, <u>Level 2:</u> - Up to 55 m in lieu of 45 m between alternative exits
J.	D2D12 – Travel via fire-isolated exits	The fire stairs serving discharging on Ground Floor have the following deviations from BCA Clause D2D12: - Discharges into a covered area that is open for less than 1/3 of its perimeter and requires travel up to 18 m to an open space, - Requires passing within 6 m of unprotected openings from the Resi A, B and C lobby before reaching an open space. Note: all openings are to be protected within the lobby/building entry parts up to where occupants are provided with a point of choice.
K.	D3D13 – Roof as open space	To permit service penetrations (rainwater, outlets, downpipes, etc) through the external slab of the podium level which are: - Open go the sky and therefore deemed as passing through a roof as open space, - Within 3 m of the path of travel to reach the roadway from the point of discharge from the fire stairs.
L.	D3D25– Swinging doors	The three tenancies facing Balmain Road will have exit doors which swing against the direction of egress.
M.	D3D26 – Operation of latch	The roller shutter door separating the Loading Bay at Basement 1 from the remainder of the carpark is located within a path of travel to an exit and is not fitted with a compliant operation latch.
N.	E1D4 – Sprinklers E1D5 – Where sprinklers are required: all classifications E1D6 – Where sprinklers are required: Class 2 and 3 buildings other than residential care buildings E1D11 – Where sprinklers are required: Class 9b buildings Specification 17 – Fire sprinkler systems	Omission of sprinklers from the Main Switch Board Room at Basement Level 1. The MSB is not deemed high-voltage and is therefore required to be sprinkler protected under DtS provisions.
O.	E2D3 – General requirements E2D4 – Fire-isolated exits E2D5 – Buildings more than 25 m in effective height: Class 2 and 3 buildings and Class 4 part of a building Specification 20 – Smoke detection and alarm systems	The design may incorporate multiple jet fans within the two basement carparking levels which are required to be assessed as a Performance Solution. Design arrangement of the jet fans will be subject to detailed review.

P.	G3.3 – Separation of atrium by bounding walls G3.4 – Construction of bounding walls G3.8 – Fire and smoke control systems Specification G3.8 – Fire and smoke control systems in buildings containing atriums	It is proposed to support the following atrium provisions: - Omission/rationalisation of fire rated walls bounding the atrium, - Rationalisation of the smoke exhaust system requirements provided for the atrium, - Rationalisation of sprinkler protection to the atrium floor and roof, - Rationalisation of the detection and alarm system to be in accordance with S20C5, - Omission of stair pressurisation to the fire isolated stairs on the basis that the atrium is within its own smoke compartment, and - Omission to standby power systems for areas outside of the atrium. Note: due to the interconnection of multiple levels via stairs/ramps and the atrium, Basement 2 and Level 1 are interconnected.