CREDWELL

Project	28 Lockwood Avenue, Belrose
Report	BCA Assessment Report (BCA 2022)
Reference	C21844-BCA 2022-r1.2
Date	6/03/2024
Client	Autobiography Pty Ltd
Email	Ziad Ali ziad@autobiography.net.au

Contents

1. Document Control

Reference/Revision	Date	BCA Assessment Report	
C21844-BCA 2022-r1.2	6/03/2024	Prepared by	Meolah Chen Building Surveyor 
		Reviewed by	Adam Southwell Building Surveyor – Unrestricted BDC3305 

2. Introduction

2.1 Objectives

The purpose of this report is to provide an assessment against Volume One of the Building Code of Australia 2022 (BCA) addressing all relevant Deemed-to-Satisfy clauses therein.

The report will identify where the subject building achieves compliance and non-compliance with the BCA, and provide instances where a Performance Solutions may be available. Any recommended Performance Solutions are required to be prepared under separate cover.

Part 3 'Assessment Summary' of this report outlines the identified compliance matters that require further information or consideration and/or assessment as a Performance Solution (to be prepared separately).

It is presumed the assumptions, content, and limitations of this report are reviewed, noted, and understood by the reader. Credwell Consulting are to be contacted to clarify any queries or assumptions made in relation to the contents of this report and further, Credwell Consulting take no responsibility for misinterpretation of any of the content herein.

2.2 Limitations

This report does not include, nor imply, any audit, assessment, or upgrading of:

1. The structural adequacy or design of the building;
2. The capacity or design of any electrical, fire, hydraulic or mechanical services;
3. The inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and
4. The Disability (Access to Premises – Building) Standards 2010 and the Disability Discrimination Act 1992 (Cth)

This report does not include, nor imply, any assessment of, or compliance with:

1. The National Construction Code – Plumbing Code of Australian Volume 3;
2. The Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to), Note: The provision of disabled access to the subject development has been assessed against the Deemed-to-Satisfy provisions of Part D4 and Clauses E3D7-E3D8, F4D5-F4D7 & F4D12 of BCA 2022 only;
3. Any Development Consent conditions;
4. The Liquor Act 2007;
5. The Work Health and Safety Act 2011;
6. The Swimming Pools Act 1992; and
7. Requirements of Authorities including, but not limited to, Fire and Rescue NSW, WorkCover, RMS, Council, Telecommunications Supply Authority, Electricity Supply Authority, Water Supply Authority, Gas Supply Authority and the like.
8. Requirements of BCA Section J.

Interpretations

A number of matters within the BCA are known to be interpretive. Where these matters are encountered, interpretations have been used that are consistent with Credwell Consulting's understanding of standard industry practice.

Dimensions and Tolerances

In some instances, the BCA specifies minimum dimensions for construction. The assessment of plans and specifications includes a review of such minimum dimensions that are relevant to the project, but Credwell Consulting does not guarantee that all relevant minimum dimensions have been assessed where they are not clearly and explicitly denoted/marked on the architectural drawings.

The relevant designer(s) and builder(s) should confirm that all minimum dimensions are achievable on site prior to works and consideration/attention should be given to construction tolerances impacted by wall set outs, applied finishes, and skirtings to corridors and bathrooms. For example, tiling bed thickness on walls and floors can adversely impact critical minimum dimensions relating to access for people with disabilities, stair and corridor widths, and balustrade heights.

2.3 Reviewed documentation

This report is based on documentation referenced in Annexure A.

3. Proposed Development

3.1 Building location

The building, the subject of this report, is located at 28 Lockwood Avenue, Belrose and is legally identified as Lot 1 DP 1199795. It is positioned on the northern side of the intersection of Lockwood Avenue and Glen Street, with Glenrose Place adjacent to the site on the east. There is considerable slope on the site from Lockwood Avenue, falling to the north towards Glenrose Place.

Neighbouring the location, the Glenrose Village Shopping Centre is situated on the north side, while the Caltex Service Station is positioned along the eastern boundary. To the south, across Blackbutt Road in a diagonal direction, lies the Glen Street Cultural Hub and Energize Health. Moreover, the vicinity is characterized by low-rise residential and commercial buildings.

Figure 1 | Satellite Image of the Site | source: Six Maps

3.2 Proposal

The proposed development consists of the demolition of the existing structure and the construction of a new shop top housing development incorporating basement carpark (Class 7a), retail premises (Class 6) and residential occupancy (Class 2).

Figure 2 & 3 | Image of the proposed development | source: Urbana Corp

3.3 Building description

For the purposes of the BCA, the building is described as follows:

Building Classification	Class 2 - Residential Class 6 - Retail Class 7a – Carpark	Levels Contained	Six (6)
Rise in Storeys	Four (4)	Effective Building Height (m)	9.7 m (RL 161.90 – RL 152.20)
Type of Construction	Type A	Climate Zone	5 Northern Beaches Council

3.4 Classification

Location	Class	Use	Floor Area (Approx)
Basement 04	**Total**		4 395 m^2
	Class 7a	Carpark – incl manager room	4 395 m^2
Basement 03	**Total**		4 395 m^2
	Class 7a	Carpark	4 395 m^2
Basement 02	**Total**		3 313 m^2
	Class 6	Retail	2 478m^2
	Class 7b	Retail Loading Dock and Bin Rooms	735 m^2
	Class 2	Residential Lobbies	100 m^2
Lower Ground Floor	**Total**		3 582 m^2
	Class 6	Retail	858 m^2
	Class 2	Residential	2724 m^2
Ground Floor	**Total**		3 323 m^2
	Class 6	Retail	688 m^2
	Class 2	Residential	2635m^2
Level 1	**Total**		3 220 m^2
	Class 2	Residential	3 220 m^2

Note:

- In accordance with Clause A6G1 [2019:A6.0], Exemption 1 of the BCA, for the purposes of determining a building classification, where a part of a building has been designed, constructed or adapted for a different purpose and is less than 10% of the floor area of the storey it is situated on, the classification of the other part of the storey may apply to the whole storey.
- Storage areas (class 7b) includes general storage areas, cleaners' rooms, garbage rooms and retail loading dock areas.
- Occupant numbers have been calculated in accordance with Clause D2D18 [2019:D1.13] of the BCA.
- The floor areas identified within the table are in accordance with the BCA definition which may vary from the GFA as determined in accordance with NSW planning legislation.

3.5 Fire Compartmentation

The following fire compartments have been assumed:

1. Basement (Basement 04 and 03)
2. Loading dock and bin rooms (Basement 02)
3. Retails areas (Basement 02, Lower Ground and Ground – Lockwood Avenue side)
4. Residential areas

3.6 Required Exits

The following have been considered as the exits from the building:

1. Four exits from basement – discharging at B02 (towards courtyard area and Glenrose Place)
2. Four exits from residential – discharging at B02 (towards courtyard area and Glenrose Place)
3. B02 doorways for retail, lobbies, loading dock and Bin rooms:
    a. Towards courtyard area, or
    b. Towards Glenrose Place
4. Ground Floor Doorways for retail and residential bin holding room towards Lockwood Avenue.

4. Assessment Summary

4.1 Assessment

The reviewed documentation referenced in Annexure A of this report has been assessed against the Deemed-to-Satisfy (DtS) provisions of the BCA. This assessment has identified the following areas where compliance with the BCA will require further consideration.

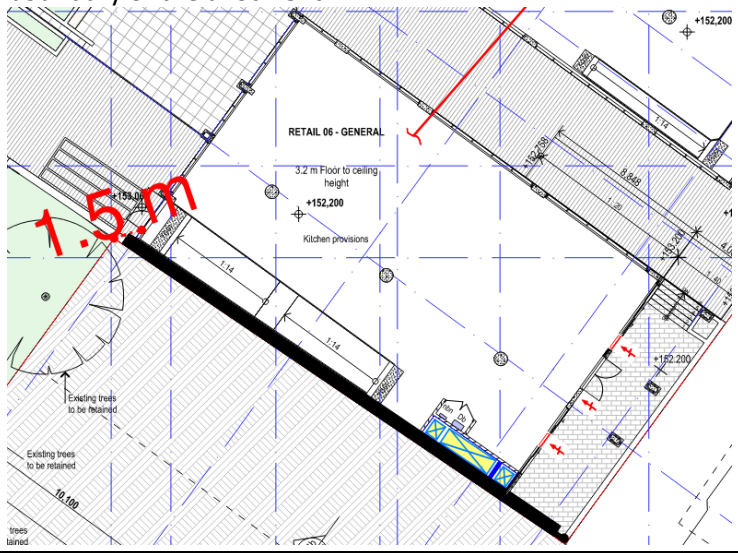
Annexure B of this report provides a detailed assessment of the proposal against each of the relevant DtS provisions of the BCA.

4.2 Possible Performance Solutions (Fire Safety)

The following items relate to areas where a Performance Solution may be available to justify a deviation from the DtS requirements of the BCA. This report does not form a Performance Solution.

Where a Fire Engineered Performance Solution is proposed, the solution is to be prepared by a *Certifier – Fire Safety (C10)* in consultation with all stakeholders.

Referral to Fire Rescue NSW under Clause 21 of the Environmental planning and Assessment (Development Certification and Fire Safety) Regulation 2021 is required where the Fire Engineering Report contains any performance solution to address Performance Requirement C1P2 *(CP2)* (for class 2, 3 or 9), C1P9 *(CP9)*, E1P3 *(EP1.3)*, E1P4 *(EP1.4)*, E1P6 *(EP1.6)*, E2P2 *(EP2.2)* or E3P2 *(EP3.2)*. This process is to be coordinated by the certifier as part of the Construction Certificate assessment process.

Item	DtS Provision		Possible Performance Solution
	Clause	[2019]	
1.	C4D3 & C4D5	C3.2 & C3.4	**Protection of openings in external walls** <u>B02 Retail 06</u> Openings within 3 m of the boundary not protected in accordance with C4D5. The retail tenancy at the easter side of Glenrose place has a doorway within approximately 1.5 m of the side/rear boundary of the allotment. 

2.	D2D5	D1.4	**Exit travel distances** Extended travel distances in the Class 2 areas, retail areas (including bin room) and loading dock. <u>Basement 02</u> • Retail 03 – 36.33 m in lieu of 30 m • Retail Bin Room – 32.25m in lieu of 30 m • Loading Doc – 36.11 m in lieu of 30 m • Retail 08 – 30.38 m in lieu of 30 m <u>Lower Ground</u> • Unit LG.16 – 18.24 m in lieu of 12 m • Unit LG.17 – 18.67 m in lieu of 12 m <u>Ground</u> • G.05 – 15.85 m in lieu of 12 m • G.13 – 17.50 m in lieu of 12 m • G.14 – 18.36 m in lieu of 12 m <u>Level 1</u> • Unit 1.09 – 15.60 m in lieu of 12 m
3.	D2D12	D1.7	Discharge of Fire-Isolated Stairways/Exits not to the requirements of D2D12.
4.	G6D4	G6.4	Extended travel distances in the communal open space <u>Level 1</u> • Communal Space (open to sky) – 33.54 m in lieu of 20 m
5.	F3P1	FP1.4	Weatherproofing of external walls – F3P1

4.3 Design amendments required

The following items have been identified as departures from the BCA deemed-to-satisfy provisions, and Credwell recommend these items to be resolved with minor design amendments prior to the application for construction certificate:

Item	DtS Provision	Amendments required	Assessment
1.	-	-	-

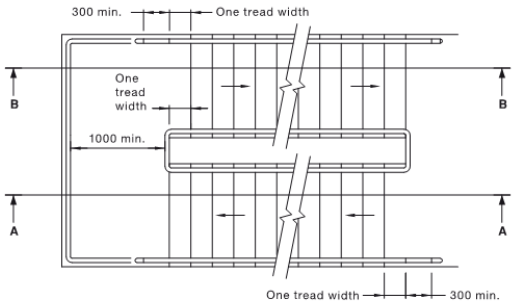
4.4 Further information required

For the purposes of this report, general arrangement floor plans, elevations and sections have been reviewed to determine whether the building is capable of complying with the BCA.

Construction Documentation is to be provided and reviewed by Credwell prior to the issuance of the BCA Report for the purposes of the Construction Certificate application. A detailed list of information required for review will be provided by Credwell upon engagement for the Construction Certificate stage assessment.

4.5 Access within the Building – Clause D3.3

Ensure that the fire-isolated stairways have the stair set backs at the bottom of a stair flight as per Figure 26 of AS1428.1-2009 to ensure that the handrails maintain a consistent height.



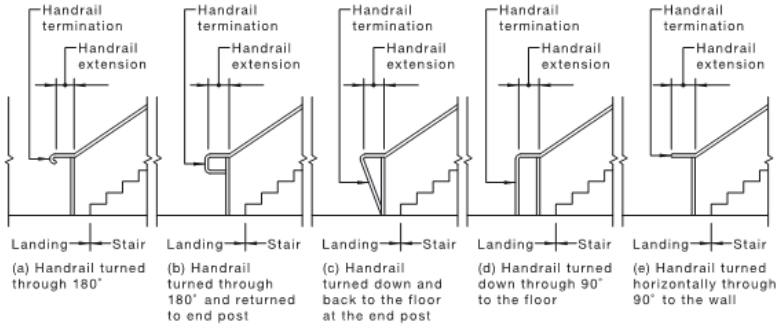
(a) Plan

DIMENSIONS IN MILLIMETRES

FIGURE 28 (in part) HANDRAILS TO STAIRS WITH INTERMEDIATE LANDINGS

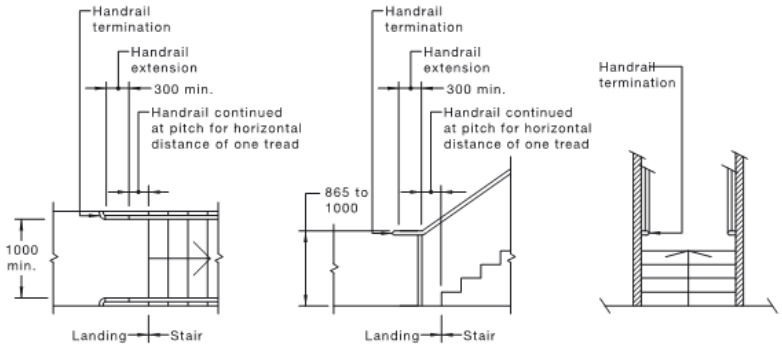
The bottom of the fire-isolated stairways are to be provided with handrail extensions representing one treads length on the angle, plus 300mm horizontally plus a turn down. The one treads length is required to extend straight out from the stairs in line with the direction of the stairs. Please show the handrail extensions.

AS 1428.1—2009 50



Side elevations

FIGURE 26(C) STAIR HANDRAILS—HANDRAIL TERMINATIONS



DIMENSIONS IN MILLIMETRES

FIGURE 26(D) DETAIL FOR HANDRAILS TERMINATED BY TURNING HORIZONTALLY THROUGH 90° TO THE WALL

4.6 Weatherproofing- Part F3

Performance Requirements Section – F3P1 [2019: FP1.4] Weatherproofing states that a roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause:

- unhealthy or dangerous conditions, or loss of amenity for occupants; and
- undue dampness or deterioration of building elements

Verification Methods for Performance based solutions are set out at F3V1. DtS provisions for F3P1 is outlined at F3D1 as “Where a Deemed-to-Satisfy Solution is proposed, Performance Requirement F3P1 is satisfied by complying with F3D2 to F3D5.” The assessment contained within this report does not include an assessment against Performance Provision F3P1.

5. Statement of Compliance

The architectural design documentation prepared for submission for the Development Application (as referred to in Annexure A of this report) have been assessed against the relevant provisions of the BCA. This assessment was limited to an assessment of the BCA in order to identify any items that may necessitate a modified development consent or additional key items that must be included in the design. It is considered that the documentation complies or is capable of complying with the BCA as outlined in Section 6 subject to resolution of items identified in Section 4.2 of this Report.

As identified in the Clause by Clause assessment, sufficient construction documentation is required in order to undertake a full assessment prior to the application for Construction Certificate.

6. Clause by Clause Assessment

An assessment of the proposal has been undertaken against each clause of the BCA and the following abbreviations have been used.

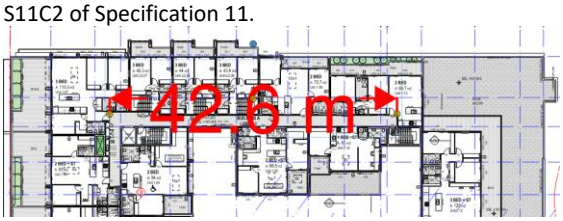
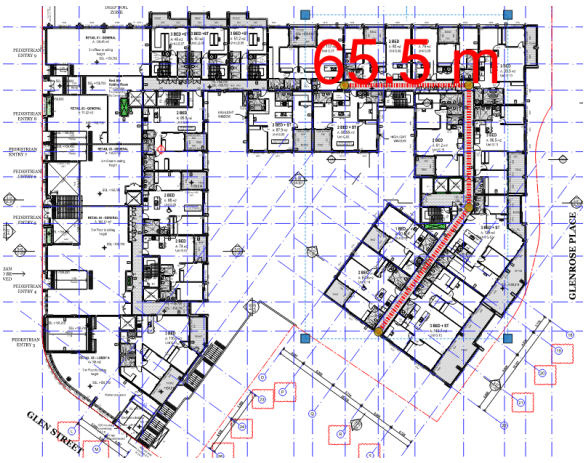
PS	A Performance Solution is proposed to achieve compliance with this Clause.
CRA	"Compliance Readily Achievable" – it is considered that whilst there is insufficient information currently provided to determine strict compliance with the DtS provisions of the BCA the proposed design is capable of comply subject to noting the requirements of the Clause. Additional information or documentation is necessary to confirm compliance. This may be in the form of additional drawing, a specification or design certification. See Appendix D for a proposed specification
Complies	The proposal shows compliance with the Deemed-to-Satisfy Clause.
DNC	The design does not comply with the Deemed-to-Satisfy Clause and design amendments are required
FI	Further information is required for assessment of the proposal relative to the DtS Clause
N/A	The DtS Clause is not applicable at this stage to this design.
Noted	The DtS Clause provides information not requiring specific assessment of the proposed design.
To be assessed at CC stage	An assessment against this provision is not included in a DA stage report due to the level of documentation provided. Pending further engagement, this will be assessed upon receipt of Construction Documentation.

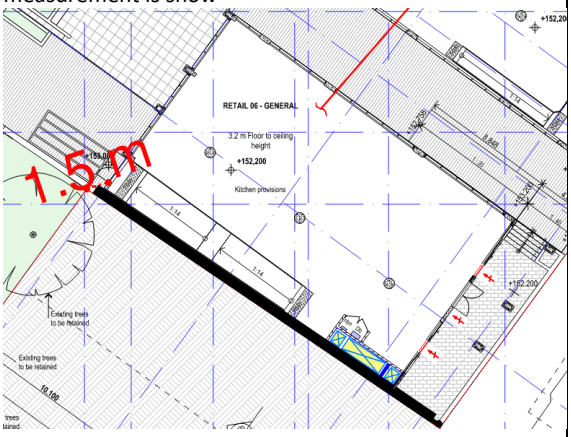
SECTION B - STRUCTURE				
Clause	**[2019]**	**Description**	**Comments**	**Assessment**
Part B1 – Structural Provisions				
An assessment against Section B has not been undertaken as part of this report and a suitably qualified Structural Engineer is to be engaged to confirm compliance with this part (where applicable).				

SECTION C – FIRE RESISTANCE				
Clause	**[2019]**	**Description**	**Comments**	**Assessment**
Part C1 – Fire resistance				
This part details the objectives, functional statements, performance requirements and verification methods relevant to this Section.				
Part C2 – Fire resistance and stability				
C2D1	C1.0	DtS Provisions	Information only.	Noted
C2D2	C1.1	Type of construction required	The building is to be of Type A Construction.	Noted
C2D3	C1.2	Calculation of rise in storeys	The rise in storey of the building is 4. The rise in storey is the sum of storeys at any part of the external wall of the building and any storey within the roof space.	Noted
C2D4	C1.3	Buildings of multiple classifications	The building has multiple classifications and is Type A based on the Type of Construction required for the top storey.	Noted
C2D5	C1.4	Mixed types of construction	Not mixed type of construction. The building will be a single Type of construction – Type A	N/A
C2D6	C1.5	Two storey Class 2, 3 and 9c buildings	This clause does not apply to this building as it is not two storeys.	N/A
C2D7	C1.6	Class 4 parts of buildings	The building does not contain a class 4 part and therefore this clause does not apply.	N/A
C2D8	C1.7	Open spectator stands and indoor sports stadiums	The building does not contain an open spectator stands or indoor sports stadiums and therefore this clause does not apply.	N/A
C2D9	C1.8	Lightweight construction	Lightweight construction must comply with Specification 6.	CRA
C2D10	C1.9	Non-combustible building elements	Elements of a Building of Type A Construction are required to be non-combustible as listed within this Clause. This Clause also provides a list of materials permitted to be used wherever non-combustible materials are required. It is noted that a number of building elements are required to be of non-combustible construction, including the external walls. It should be noted that where a building element is required to be non-combustible all materials forming that element are to be non-combustible. It should be noted that if a permanent polymer/PVC formwork for walls, such as Dincel, Rediwall, etc, is used where the BCA requires such an element to be non-combustible this material will need to be the subject of a Performance Solution at the Construction Certificate Stage of the development. Details of materials, finishes, linings and wall types are to be provided to enable assessment, including AS 1530 test reports for each product must be provided as part of the CC stage.	FI

Clause	[2019]	Description	Comments	Assessment
C2D11	C1.10	Fire hazard properties	Fire hazard properties of all materials to comply with this Clause and Specification 7. Details of proposed floor, wall and ceiling linings, air-handling ductwork, sarking and insulation type materials, including AS 1530.3 test reports are to be provided at CC stage to enable a full assessment.	FI
C2D12	C1.11	Performance of external walls in fire	1-2 storey buildings with external walls constructed with tilt-up panels or the like must comply with specification 8. This clause does not apply as it only applies to two-storey buildings	N/A
C2D13	C1.13	Fire-protected timber: Concession	Fire-protected timber may be used wherever an element is required to be non-combustible if in accordance with this provision. This clause does not apply as no fire-protected timber is proposed	N/A
C2D14	C1.14	Ancillary elements	Ancillary elements other than those listed in this Clause are not to be fixed, installed or attached to internal parts or external face of an external wall that is required to be non-combustible. Details of materials are to be provided to enable assessment, including AS 1530 test reports for each product must be provided as part of the CC stage.	FI
C2D15	New	Fixing of bonded laminated cladding panels	The plans do not indicate any laminated cladding installed on the building.	N/A
Part C3 – Compartmentation and separation				
C3D1	C2.0	DtS Provisions	Information only.	Noted
C3D2	C2.1	Application of Part	C3D3, C3D4, C3D5 do not apply to a carpark provided with an AS 2118 sprinkler system complying with Specification 17, an open deck carpark, or an open spectator stand.	Noted
C3D3	C2.2	General floor area and volume limitations	The proposal is within the area and volume limitations of this clause: ▪ Class 2 – N/A: The Class 2 portions of the building are not subject to floor area and volume limitations of C3D3 as Table S5C11a of Specification 5 and Clause C4D12 of the BCA regulates the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 classifications. ▪ Class 6 < 5,000 m^2, 30,000 m^3 ▪ Class 7a – The carpark is required to be protected by a sprinkler system complying with Spec 17. ▪ Class 7b – 730m^2 < 5,000 m^2, 30,000 m^3	Noted
C3D4	C2.3	Large isolated building	The building does not exceed the area and volume limitations of clause C3D3 and therefore this clause does not apply.	N/A
C3D5	C2.4	Requirements for open spaces and vehicular access	The building does not exceed the area and volume limitations of clause C3D3 and therefore this clause does not apply.	N/A
C3D6	C2.5	Class 9 buildings	The building does not contain a class 9 part and therefore this clause does not apply.	N/A
C3D7	C2.6	Vertical separation of openings in external walls	The building is proposed to be provided with an AS 2118.6 sprinkler system and therefore does not require spandrels or horizontal construction in accordance with this provision.	CRA
C3D8	C2.7	Separation by fire walls	Where fire walls are utilised, they must extend to the underside of the floor above or to the roof covering.	CRA

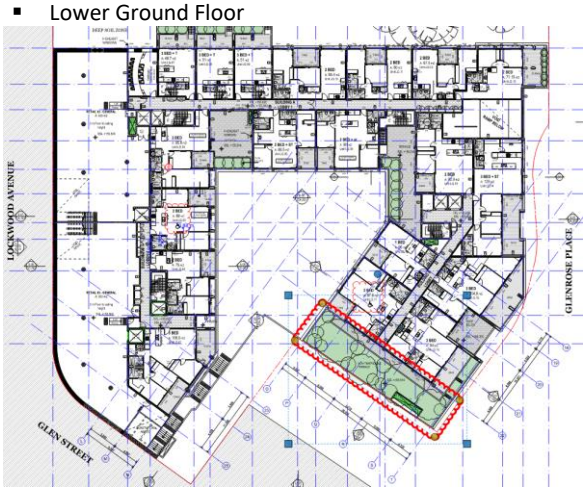
Clause	[2019]	Description	Comments	Assessment
C3D9	C2.8	Separation of classifications in the same storey	Each storey must be constructed to achieve the FRLs applicable to a higher class, or the different classifications must be separated from one another by fire walls. Where separation is required, FRL plans are to be provided as part of the Construction Documentation to confirm compliance with this provision. The entire B02 must be constructed to achieve the FRLs applicable to a Class 7b for the bin rooms and loading dock or the different classifications must be separated from one another by firewalls. Alternatively a Fire Engineer Performance Solution may be prepared to justify the reduction of the FRL's for the bin rooms and/or retail areas. The entire Lower Ground and Ground Floor must be constructed to achieve the FRLs applicable to a Class 6, or the different classifications must be separated from one another by firewalls. Alternatively a Fire Engineer Performance Solution may be prepared to justify the reduction of the FRL's for the bin rooms and/or retail areas. FRL plans are to be provided at the CC stage.	FI
C3D10	C2.9	Separation of classifications in different storeys	Each storey must be separated from the storey below by construction having the FRL applicable to a floor for the classification in the lower storey. This requires: ▪ the floor between the retail and residential parts to achieve a FRL of 180/180/180 above the commercial/retail tenancy; ▪ The floor between B02 and the residential parts on the lower ground to achieve a Fire Resistance Level (FRL) of 240/240/240 above the loading dock and bin areas. Where separation is required, FRL plans are to be provided as part of the Construction Documentation to confirm compliance with this provision. Alternatively, any reduced FRL is required to be addressed via Fire Engineer Performance Solution. FRL plans are to be provided at the CC stage.	FI
C3D11	C2.10	Separation of lift shafts	Any lift that connects more than three storeys must be enclosed within a shaft that has the FRLs outlined in Specification 5 with reference to the classification in which it is located. Openings for lift landing doors and services must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C4. FRL plans are to be provided as part of the Construction Documentation to confirm compliance with this provision.	FI
C3D12	C2.11	Stairways and lifts in one shaft	The fire-isolated stairway and the lift are in separate shafts.	CRA
C3D13	C2.12	Separation of equipment	Equipment including lift motor rooms, emergency generators sustaining emergency equipment operating in emergency mode, central smoke control plan, boilers or battery areas with a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours are to be fire separated from the remainder of the building in accordance with this Clause.	FI

Clause	[2019]	Description	Comments	Assessment
			Where separation is required, FRL plans are to be provided as part of the Construction Documentation to confirm compliance with this provision.	
C3D14	C2.13	Electricity supply system	If the main switch room sustains emergency equipment operating in emergency mode, the room is to be separated from the remainder of the building with construction having a FRL of not less than 120/120/120. Where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment, must be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of a fault from the non-emergency equipment switchgear. Where separation is required, FRL plans are to be provided as part of the Construction Documentation to confirm compliance with this provision.	FI
C3D15	C2.14	Public corridors in a Class 2 and 3 buildings	Where Class 2 parts of the building incorporate any public corridors that have a length of more than 40 m, they must be divided into intervals of less than 40 m with smoke-proof walls complying with Clause S11C2 of Specification 11. Building A Lobby 1 (lower ground floor) has a corridor that measures 53.83 m. The doors separating the corridor must meet Clause S11C2 of Specification 11.  Building A Lobby 1 (Level 01) has a corridor that measures 42.6 m. The doors separating the corridor must meet Clause S11C2 of Specification 11.  Building B Lobby (ground floor) has a corridor that measures 65.5 m. The doors separating the corridor must meet Clause S11C2 of Specification 11. 	CRA

Clause	[2019]	Description	Comments	Assessment
Part C4 – Protection of openings				
C4D1	C3.0	DtS Provisions	Information only.	Noted
C4D2	C3.1	Application of Part	Information only.	Noted
C4D3	C3.2	Protection of openings in external walls	Openings within external walls that are required to have an FRL and are within the limitations of this provision must be protected in accordance with C4D5. Currently, the following openings in external walls of the building considered to be exposed to a fire source feature: ▪ **B02 Retail 06** – the retail tenancy at the easter side of Glenrose place has a doorway within approximately 1.5 m of the side/rear boundary of the allotment. This measurement is show  **Solution:** ▪ The doorway is to be relocated so it is at least 3m away from the boundary; or ▪ The doorway is to be protected in accordance with C4D5, and if wall-wetting sprinklers are used, they must be located externally; or ▪ a Fire Engineering Performance Solution is required.	PS
C4D4	C3.3	Separation of external walls and associated openings in different fire compartments	Where external walls of different fire compartments are at an angle of 180° or less, separation must be provided to limit fire spread between fire compartments through the external walls and openings within them. The external walls must have an FRL not less than 60/60/60, and any openings protected in accordance with clause C4D5.	CRA
C4D5	C3.4	Acceptable methods of protection	Where protection is required, doorways, windows and other openings must be protected as follows: (a) Doorways— (i) internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or (ii) –/60/30 fire doors that are self-closing or automatic closing. (b) Windows— (i) internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (ii) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or (iii) –/60/– automatic closing fire shutters.	CRA

Clause	[2019]	Description	Comments	Assessment
			(c) Other openings— (i) excluding voids — internal or external wall-wetting sprinklers, as appropriate; or (ii) construction having an FRL not less than –/60/–. Fire doors, fire windows and fire shutters must comply with Specification 12. Alternatively, a Performance Solution can be prepared by a fire engineer for an alternative scope to rectify.	
C4D6	C3.5	Doorways in fire walls	If fire walls are utilised, any doorways through them must be protected in accordance with the requirements of this Clause.	CRA
C4D7	C3.6	Sliding fire doors	If sliding fire doors are utilized, they are required to comply with this Clause. This clause does not apply as no sliding fire doors are proposed.	N/A
C4D8	C3.7	Protection of doorways in horizontal exits	A doorway that is part of a horizontal exit must be protected by a single fire door that has an FRL of not less than that required by Specification 5 for the fire wall except that the door must have an insulation level of at least 30; or Each door required by must be self-closing, or automatic-closing to the requirements of this clause.	CRA
C4D9	C3.8	Openings in fire-isolated exits	The doorways to fire-isolated exits are to be self-closing -/60/30 fire door sets.	CRA
C4D10	C3.9	Service penetrations in fire-isolated exits	Fire-isolated exits may not be penetrated by any service other than electrical wiring for lighting and intercom systems, water supply for fire services and other fire related services.	CRA
C4D11	C3.10	Openings in fire-isolated lift shafts	Lift doors are to achieve an FRL of not less than -/60/- and be in accordance with this Clause. Lift indicator panes are also to comply with this Clause.	CRA
C4D12	C3.11	Bounding construction: Class 2 and 3 buildings and Class 4 parts	The doorways to the units, and rooms off the public corridors, are to be self-closing -/60/30 fire door sets.	CRA
C4D12	C3.12	Openings in floors and ceilings for services	All service shafts are to have FRLs as set by Tables S5C11a – S5C11g of Specification 5	CRA
C4D14	C3.13	Openings in shafts	Access openings in fire rated service shafts are to be through an access panel, or self-closing fire door, having an FRL of not less than -/60/30.	CRA
C4D15	C3.15	Openings for service installations	Service penetrations through fire rated building elements are to be sealed in accordance with a tested system and manufacturer specifications in accordance with this Clause and Specification 13.	CRA
C4D16	C3.16	Construction joints	Construction joints in fire rated building elements are to be appropriately treated to maintain the integrity and insulation of the element in which they are located.	CRA
C4D17	C3.17	Columns protected with lightweight construction to achieve an FRL	Any columns protected with lightweight fire rated materials to achieve a required FRL are to comply with this Clause.	CRA

Clause	[2019]	Description	Comments	Assessment
Specification 5 – Fire-resisting construction [2019: Spec C1.1]				
S5C1	1	Scope	This Specification contains the requirements for fire resisting construction of building elements.	Noted
	2	General Requirements	-	-
S5C2	2.1	Exposure to FSF	Fire-source feature means— (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. The building is exposed to FSF to the east from neighbouring properties (east boundary) – service station and western boundary.	Noted
S5C3	2.2	Fire protection for support of another part	Where a part of a building required to have a FRL depends on direct vertical or lateral support from another part to maintain its FRL. That supporting part must have a FRL not less than that required by other provisions as set out in this Clause. A detailed assessment of FRL has not been made as part of this assessment.	CRA
S5C4	2.3	Lintels	A lintel must have the FRL required for the part of the building in which it is situated unless it does not contribute to the support of a fire door, fire window or fire shutter and it otherwise complies with this Clause.	CRA
S5C5	2.4	Method of attachment reduce the fire-resistance of building element	The fire-resistance of a building element is not to be impacted by the method of attaching or installing a finish, lining, ancillary element or a service installation in accordance with this Clause.	CRA
S5C6	2.5	General concessions	A non-combustible structure on the roof, such as ventilation motors, need not comply with Specification 5.	CRA
S5C7	2.6	Mezzanine floors: Concession	The building does not contain a mezzanine and therefore this clause does not apply.	N/A
S5C8	2.7	Enclosure of Shafts	Shafts required to have an FRL must be enclosed at the top and bottom by construction having an FRL not less than that required for the walls of a non-loadbearing shaft in the same building, except that these provisions need not apply to— (a) the top of a shaft extending beyond the roof covering, other than one enclosing a fire-isolated stairway or ramp; or (b) the bottom of a shaft if it is non-combustible and laid directly on the ground.	CRA
S5C9	2.8	Carparks in Class 2 and 3 buildings	The development does not meet the requirements for this concession and therefore it does not apply.	N/A
S5C10	2.9	Residential aged care building: Concession	The building does not contain a residential aged care building and therefore this clause does not apply.	N/A
	3	Type A Construction		

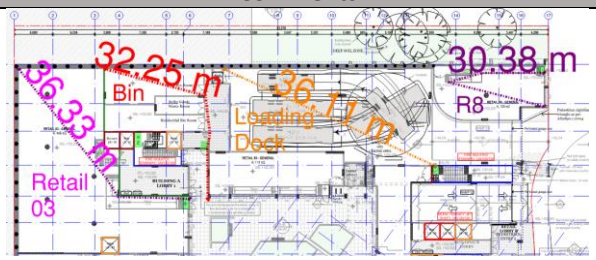
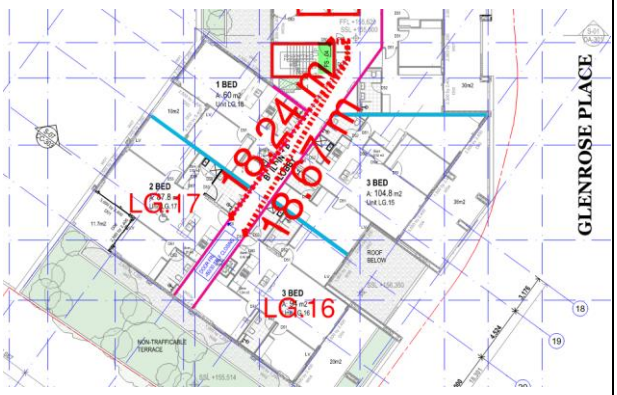
Clause	[2019]	Description	Comments	Assessment
S5C11	3.1	Fire-resistance of building elements	The building elements are to have FRLs as determined by this Clause. See Annexure C of the Report.	CRA
S5C12	3.2	Concessions for floors	A floor need not have an FRL in accordance with the concessions given in this clause.	CRA
S5C13	3.3	Floor loading of Class 5 and 9b buildings: Concession	If a floor of a Class 5 or 9b building is designed for a live load not exceeding 3kPa then reductions in FRLs are available. This clause does not apply as this building does not have any class 5 and 9b parts.	N/A
S5C14	3.4	Roof superimposed on concrete slab: Concession	A roof superimposed on a concrete slab need not have an FRL if it complies with this Clause.	CRA
S5C15	3.5	Roof: Concession	A roof need not have an FRL if its covering is non-combustible, and the building meets the requirements of this Clause. **Gardens** All gardens and other vegetation that form part of the roof, such as the vegetation on the communal open space, are combustible and therefore do not meet the requirements of this concession. Therefore, this concession does not apply. These gardens are shown in the figures below: ▪ Level 1  ▪ Lower Ground Floor  	N/A

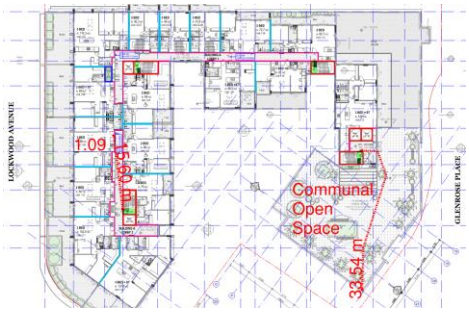
Clause	[2019]	Description	Comments	Assessment
S5C16	3.6	Roof lights	Where a roof is required to achieve an FRL or have a non-combustible covering, roof lights must meet the requirements of this provision. The roof light must not be within 3m of another part of the building that projects beyond the roof unless that part of the building has the FRL required of a firewall, or within 3 m of any other roof light or the like in an adjoining SOU if the walls bounding the unit are required to have an FRL.	CRA
S5C17	3.7	Internal columns and walls: Concession	A building with an effective height not more than 25m with a non-combustible roof covering is permitted to have reduced FRLs for internal columns and walls within the storey immediately below the roof in accordance with this clause. The internal columns (except those referred to in clause S5C11 (1)(d)) and walls (except fire walls and shaft walls) within the storey immediately below the roof are granted a concession by this clause to have an FRL of no less than 60/60/60	CRA
S5C18	3.8	Open spectator stands and indoor sports stadiums: Concession	This clause does not apply to the development as it does not incorporate an open spectator stand or indoor sports stadium.	N/A
S5C19	3.9	Carparks	Where the carpark is provided with an AS 2118 sprinkler system and is fire separated from the remainder of the building, this clause allows the reduction of the FRL for carparks that have a maximum ancillary of no greater than 10% of the floor area in accordance with this clause.	Noted
S5C20	3.10	Class 2 and 3 buildings: Concession	The exemptions under this clause relate to low level residential buildings. This clause does not apply to the development as it contains more than 4 storeys.	N/A
Specification 6 – Structural tests for lightweight construction [2019: Spec C1.8]				
S6C1	1	Scope	This Specification describes test methods to be applied to, and criteria to be satisfied by, a wall system of light weight construction.	Noted
S6C2	2	Application	Information only.	Noted
S6C3 – S6C6	3.1 – 3.4	Tests	Tests to walls and lift shafts to comply with this Clause.	CRA
S6C7– S6C9	4.1 – 4.3	Test Specimens	Testing to comply with this Clause.	CRA
S6C10	5	Test methods	Tests to be carried out in accordance with this Clause.	CRA
S6C11	6	Criteria for compliance	The wall system or the specimen of it must comply with this Clause.	CRA
Specification 7 – Fire hazard properties [2019: Spec C1.10]				
S7C1	1	Scope	This Specification sets out requirements in relation to the fire hazard properties of linings, materials and assemblies in buildings.	Noted
S7C2	2	Application	Linings, materials and assemblies must comply with the appropriate provisions described in Table 1 of this Clause.	Noted
S7C3	3	Floor linings and floor coverings	Fire hazard properties of the floor linings and floor coverings are to comply with this Clause.	CRA
S7C4	4	Wall and ceiling linings	Fire hazard properties of the wall and ceiling linings are to comply with this Clause.	CRA
S7C5	5	Air-handling ductwork	Fire hazard properties of the air-handling ductwork are to comply with this Clause.	CRA

Clause	[2019]	Description	Comments	Assessment
S7C6	6	Lift cars	Fire hazard properties of the lift cars are to comply with this Clause.	CRA
S7C7	7	Other materials	Fire hazard properties of other materials not covered in Clauses 3, 4, 5 or 6 above are to comply with this Clause.	CRA
Specification 8 – Performance of external walls in fire [2019: Spec C1.11]				
S8C1	1	Scope	This Specification contains measure to minimise, in the event of fire, the likelihood of external walls covered by Clause 2 collapsing outwards as complete panels and the likelihood of panels separating from supporting members.	Noted
S8C2	2	Application	Information only.	Noted
S8C3	3	General requirements for external wall panels	This clause does not apply as it only applies to two-storey buildings	NA
S8C4	4	Additional requirements for vertically spanning external wall panels adjacent to columns	This clause does not apply as it only applies to two-storey buildings	NA
Specification 9 – Cavity barriers for fire-protected timber [2019: Spec C1.13]				Noted
S9C1	1	Scope	Cavity barriers for fire-protective timber are not proposed for this building.	N/A
S9C2	2	Requirements	Cavity barriers for fire-protective timber are not proposed for this building.	N/A
Specification 10 – Fire-protected timber [2019: Spec C1.13a]				
S10C1	1	Scope	Fire protected timber is not proposed for this building.	N/A
S10C2	2.1	General requirements	Fire protected timber is not proposed for this building.	N/A
S10C3	2.2	Massive timber	Fire protected timber is not proposed for this building.	N/A
	3	Determination of time the timber interface temperature exceeds 300°C for timber at least 75 mm thick	Fire protected timber is not proposed for this building.	N/A
S10C4	3.1	Form of test	Fire protected timber is not proposed for this building.	N/A
S10C5	3.2	Smaller specimen permitted	Fire protected timber is not proposed for this building.	N/A
S10C6	3.3	Acceptance criteria	Fire protected timber is not proposed for this building.	N/A
Specification 11 – Smoke-proof walls in health-care and residential care buildings [2019: Spec C2.5]				
S11C1	1	Scope	This Specification sets out requirements for the construction of smoke-proof walls in Class 9a health-care buildings and Class 9c buildings.	Noted
S11C2	2	Class 9a health-care buildings	Smoke-proof walls required by C2.5 in Class 9a health-care buildings must comply with the following: (a) Be non-combustible and extend to the underside of— (i) the floor above; or (ii) a non-combustible roof covering; or (iii) a ceiling having a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes. (b) Not incorporate any glazed areas unless the glass is safety glass as defined in AS 1288. (c) Only have doorways which are fitted with smoke doors complying with Specification C3.4.	CRA

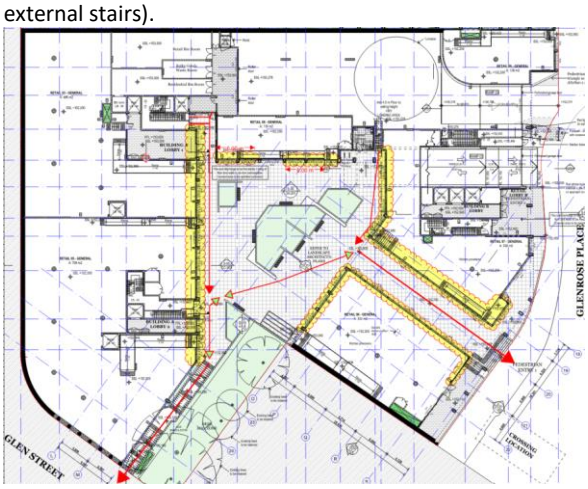
Clause	[2019]	Description	Comments	Assessment
			(d) Have all openings around penetrations and the junctions of the smoke-proof wall and the remainder of the building stopped with non-combustible material to prevent the free passage of smoke. (e) Incorporate smoke dampers where air-handling ducts penetrate the wall unless the duct forms part of a smoke hazard management system required to continue air movement through the duct during a fire.	
S11C3	3	Class 9c buildings	Does not apply to this development	NA
S11C4	4	Doorways in smoke-proof walls	Does not apply to this development	NA
Specification 12 – Fire doors, smoke doors, fire windows and shutters [2019: Spec C3.4]				
S12C1	1	Scope	This Specification sets out requirements for the construction of fire doors, smoke doors, fire windows and fire shutters.	Noted
S12C2	2	Fire doors	Fire doors are to comply with AS1905.1-2015 Amendment 1 and this Clause.	CRA
S12C3	3.1	Smoke doors	Smoke doors are to comply with this Clause.	CRA
S12C4	3.2	Construction DtS for smoke doors	Smoke doors are to comply with this Clause.	CRA
S12C5	4	Fire shutters	Fire shutters are to comply with this Clause and the manufacturer's specifications.	CRA
S12C6	5	Fire windows	Fire windows are to comply with this Clause and the manufacturer's specifications.	CRA
Specification 13 – Penetration of walls, floors and ceilings by services [2019: Spec C3.15]				
S13C1	1	Scope	This Specification prescribes material and methods of installation for services that penetrate walls, floors and ceilings required to have an FRL.	Noted
S13C2	2	Application	Information only.	Noted
S13C3	3	Metal pipe systems	Metal pipe system penetration must comply with this clause.	CRA
S13C4	4	Pipes penetrating sanitary compartments	Pipes penetrating sanitary compartments must comply with this	CRA
S13C5	5	Wires and cables	Wire and cable penetrations must comply with this clause.	CRA
S13C6	6	Electrical switches and outlets	Electrical switches and outlets must comply with this clause.	CRA
S13C7	7	Fire-stopping	Fire-stopping must comply with this clause.	CRA

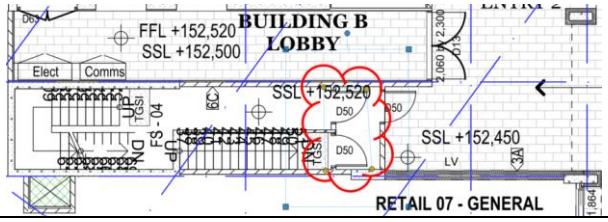
SECTION D – ACCESS AND EGRESS				
Clause	**[2019]**	**Description**	**Comments**	**Assessment**
Part D1 – Access and egress				
This part details the objectives, functional statements, performance requirements and verification methods relevant to this Section.				
Part D2 – Provision for escape				
D2D1	D1.0	DtS Provisions	Information only.	Noted
D2D2	D1.1	Application of Part	Information only.	Noted
D2D3	E1dD1.2	Number of exits required	The building must contain at least one (1) exit from each storey and the path of travel to an exit must not involve travel through another Sole-occupancy unit. The provision of exits throughout the building complies. There is at least one exit from each storey and two from the basement (rise greater than 1.5 m).	CRA
D2D4	D1.3	When fire-isolated stairways and ramps are required	All stairways in the Class 2 part, not within SOU, are required to be fire-isolated. All stairways in Class 7a part are required to be fire-isolated.	CRA
D2D5	D1.4	Exit travel distances	A summary of the maximum travel distances applicable to this building are (assuming a sprinkler system meeting the requirements of Specification 18): 1. Class 2 – SOU to exit (or point of choice) 12 m (as allowed under Specification 18) 2. Class 2 common areas – 20 m to an exit or point of choice. 3. Class 6 – 30 m to a single exit serving a storey at the level of access to a road or open space, or 4. Class 6 – 20 m to a single exit, or a point of choice where two exits are available, in which case the maximum distance to one of those exits must not exceed 40 m. 5. Class 7a – 20 m to a single exit or a point of choice where two exits are available, in which case the maximum distance to one of those exits must not exceed 40 m. **Basement 02** Basement 02 has travel distances that are greater than allowed by this clause. These travel distances are shown in the figure below and are: 1) **Retail 03** (shown in pink below) - Retail 03 has a travel distance of 36.33 m to a single exit at the level of access to a road or open space. This is greater than the 30 m maximum allowed. 2) **Retail Bin Room** (shown in red below) – the retail bin room has a travel distance of 32.25 m to a single exit at the level of access to a road or open space. This is greater than the 30 m maximum allowed. 3) **Loading Dock** (shown in orange below) – the loading dock has a travel distance of 36.11 m to a fire isolated stairway providing egress to a road or open space. This is greater than the 30 m maximum allowed. 4) **Retail 08** (shown in purple below) - Retail 08 has a travel distance of 30.38 m to a single exit at the level of access to a road or open space. This is greater than the 30 m maximum allowed.	**PS**

Clause	[2019]	Description	Comments	Assessment
			 **Lower Ground** 5) **Units LG.16 and LG.17** – These units have a travel distance from the SOU doorway to a single exit of 18.24 m and 18.67 respectively. This is greater than the 12 m maximum allowed.  **Ground Level** Ground level has multiple travel distances greater than allowed: 6) **Unit G.05** has a travel distance from the SOU doorway to a single exit of 15.85 m 7) **Unit G.13** has a travel distance from the SOU doorway to a single exit of 17.50 m 8) **Unit G.14** has a travel distance from the SOU doorway to a single exit of 18.36 m These travel distances are greater than the 12 m maximum allowed to an exit.  **Level 1** 9) **Unit 1.09** has a travel distance from the SOU doorway to a single exit of 15.60 m. This is greater than the 12 m maximum allowed.	

Clause	[2019]	Description	Comments	Assessment
			10) **Level 1 Communal Open Space** has a travel distance to a single exit of 33.54 m. This is greater than the 20 m maximum allowed. This is a departure of requirement under Clause G6D4.  **Solution** Amended plans may resolve some issues and a Fire Engineer may be able to justify the remaining extended travel distances in a Performance Solution.	
D2D6	D1.5	Distance between alternative exits	The distances between alternative exits are within the limitations of this clause. With a sprinkler system meeting the requirements of Specification E1.5a, the distance between alternative exits in the class 2 part is increased from 45 m to 60 m. The maximum distance between alternative exits in a class 6 or 7 is also 60 m.	CRA
D2D7	D1.6(a)	Height of exits, paths of travel to exits and doorways	The required exit or path of travel to an exit must be not less than 2m in height. The reduction in height to 1980mm is permitted at any doorway.	CRA
D2D8	D1.6(b), (c), (d) and (e)	Width of exits and paths of travel to exits	A minimum clear width of 1m is required (including all the stairs). The 1m is to be clear of all obstructions such as handrails, PFE, hydrants etc.	CRA
D2D9	D1.6(f)	Width of doorways in exits or paths of travel to exits	The minimum width of 750mm through a doorway is required unless otherwise specified in this clause. Given that the access requirements in D4 require a minimum 850mm clearance in accessible areas, we recommend providing clear width of 850mm throughout the retail parts and all the adaptable and silver standard liveable housing units.	CRA
D2D10	D1.6(g)	Exit width not to diminish in direction of travel	The unobstructed width of a required exit must not diminish in the direction of travel.	CRA
D2D11	D1.6(h) & (i)	Determination and measurement of exits and paths of travel to exits	The required stairway and/or ramp must have an unobstructed width (measured clear of handrails) of no less than 1,000mm. Please note a constructed width of approximately 1,100mm is required to install a compliant handrail to one (1) side of a stairway (as required for a fire-isolated stairway), and a constructed width of approximately 1,200mm is required to install compliant handrails to both sides of a stairway (as required for a non-fire-isolated stairway). Termination of handrails must be considered in the design (see part 3.5 of this report.) A compliant handrail must continue one tread beyond the bottom riser and then 300 mm horizontal. This requires a minimum space of 1000 + 250 + 300 = 1550 mm. Detailed sections of stairways and handrails are to be provided as part of the Construction Documentation to confirm compliance with this provision.	FI

Clause	[2019]	Description	Comments	Assessment
D2D12	D1.7	Travel via fire-isolated exits	A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from— 1. a public corridor, public lobby or the like; or 2. a sole-occupancy unit occupying all of a storey; or 3. a sanitary compartment, airlock or the like. Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— 2. to a road or open space; or 3. to a point— (A) in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/ 3 of its perimeter; and (B) from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or 4. into a covered area that— (A) adjoins a road or open space; and (B) is open for at least 1/3 of its perimeter; and (C) (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and (D) (D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m. **Discharging internally** There are multiple fire-isolated exits that do not provide egress directly to open space or alternative covered areas as allowed by this clause. These fire-isolated exits are 1. the southwest residential fire-isolated stairway, 2. the southwest basement fire-isolated stairway, 3. the central north residential fire-isolated stairway, 4. the central north basement fire-isolated stairway, 5. the southeast residential fire-isolated stairway, 6. the southeast basement fire-isolated stairway, These fire-isolated exits are shown below:  Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— i. an FRL of not less than 60/60/60; and ii. any openings protected internally in accordance with C4D5,	PS

Clause	[2019]	Description	Comments	Assessment
			for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. **Windows and walls adjacent to the path of travel from fire-isolated exits** The windows highlighted in red will need to be internally protected in accordance with C4D5 to comply with this clause. The same is true for windows not more than 3 m above the path of travel. Any walls, within 6 m of these paths, for a height of at least 3 m, must have a minimum FRL of 60/60/60 (attention should be paid to the eastern external stairs).  **Solution** This design will need to be reviewed and updated to comply, or a Fire Engineer may be able to justify the non-compliances in a Performance Solution.	
D2D13	D1.8	External stairways or ramps in lieu of fire-isolated exits	This clause does not apply as there are no external stairways in lieu of fire-isolated stairways in the development.	N/A
D2D14	D1.9	Travel by non-fire-isolated stairways or ramps	In a class 6 or 7 building 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 non-fire-isolated ramp must not exceed 80 m. The two stairways provided to the lower ground floor retail tenancies are non-fire-isolated stairways.	CRA
D2D15	D1.10	Discharge from exits	The discharge from exits must comply with the requirements of this clause. This includes a suitable barrier to prevent vehicles from blocking the exit or access to it.	CRA
D2D16	D1.11	Horizontal exits	Horizontal exits are to comply with the requirements of this clause.	CRA
D2D17	D1.12	Non-required stairways, ramps or escalators	This clause does not apply as there are no escalator, moving walkway or non-required non fire-isolated stairway or pedestrian ramp.	N/A
D2D18	D1.13	Number of persons accommodated	Occupant calculations have been provided in part 2.4 of this report. Without further information the occupancies assume for this report are one occupant per 30 m^2 for the carparking, one occupant per 3 m^2 for the retail at level of direct entry from open air and one occupant per 5 m^2 for other retail.	Noted

Clause	[2019]	Description	Comments	Assessment
D2D19	D1.14	Measurement of distances	Information only.	Noted
D2D20	D1.15	Method of measurement	Information only.	Noted
D2D21	D1.16	Plant rooms, lift machine rooms, electricity network substations: Concession	Access for maintenance must be in accordance with this provision. This clause does not apply as no details of ladders have been provided to serve the areas listed in this clause	N/A
D2D22	D1.17	Access to lift pits	If the building incorporates a lift pit, access to it must comply with this clause. Where the pit depth is not more than 3 m, access to lift pits must be through the lowest landing doors.	CRA
D2D23	D1.18	Egress from primary schools	The building does not incorporate a Class 9b primary school and therefore this clause does not apply	N/A
Part D3 – Construction of Exits				
D3D1	D2.0	DtS Provisions	Information only.	Noted
D3D2	D2.1	Application of Part	Information only.	Noted
D3D3	D2.2	Fire-isolated stairways and ramps	The stairs within the fire-isolated stairs are to be non-combustible and not cause structural damage to the shaft if there is local failure.	CRA
D3D4	D2.3	Non-fire-isolated stairways and ramps	The construction of the non-fire-isolated exit stairways must be – (a) of non-combustible materials; and (b) so that if there is local failure it will not cause structural damage to, or impair the fire-resistance of, the shaft. or only of – (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.	CRA
D3D5	D2.4	Separation of rising and descending stair flights	The rising and descending stair flights must be separated with non-combustible and smoke-proof construction. **North central fire-isolated stairways** The construction that separates or is common to the rising and descending flights must be— 1. non-combustible; and 2. smoke proof in accordance with Clause S11C2 This applies to the rising and descending north central fire-isolated stairs that are shown below: 	CRA
D3D6	D2.5	Open access ramps and balconies	This clause does not apply as no open access ramps and balconies have been detailed for smoke hazard management.	N/A

Clause	[2019]	Description	Comments	Assessment
D3D7	D2.6	Smoke lobbies	The building is not required to be provided with a smoke lobby required by D2D12 and therefore this clause does not apply.	N/A
D3D8	D2.7	Installations in exits and paths of travel	Access to services must be in accordance with this provision. Services or equipment comprising - (i) electricity meters, distribution boards or ducts; or (ii) central telecommunications distribution boards or equipment; or (iii) electrical motors or other motors serving equipment in the building may be installed in any corridor, hallway, lobby or the like leading to a required exit if the services or equipment are enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure	CRA
D3D9	D2.8	Enclosure of space under stairs and ramps	The stairways are not shown to be enclosed for the use of a cupboard or similar enclosed space.	CRA
D3D10	D2.9	Width of required stairways and ramps	A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2 m.	Noted
D3D11	D2.10	Pedestrian ramps	(1) A fire-isolated ramp may be substituted for a fire-isolated stairway if the construction enclosing the ramp and the width and ceiling height comply with the requirements for a fire-isolated stairway. (2) A ramp serving as a required exit must— (a) where the ramp is also serving as an accessible ramp under Part D4, be in accordance with AS 1428.1; or (b) in any other case, have a gradient not steeper than 1:8. (3) The floor surface of a ramp must have a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586.	CRA
D3D12	D2.11	Fire-isolated passageways	The fire-isolated passageways must have the required FRL of the stairways that discharge into it.	CRA
D3D13	D2.12	Roof as open space	The minimum FRL of a roof used as open space is 120/120/120. This applies to all basement carparking roof that is used as a path of egress. The roof must not have any roof lights or other openings within 3 m of the path of travel of persons using the exit to reach a road or open space.	CRA
D3D14	D2.13	Goings and risers	Stair geometry and treads slip resistance must comply with this Clause.	CRA
D3D15	D2.14	Landings	Landings for flights of stairs are to be at least 750mm long, have a maximum gradient of 1:50 and have a slip resistance in accordance with this Clause. Stair construction details must be provided as part of the Construction documentation to enable further review.	CRA
D3D16	D2.15	Thresholds	The threshold of a door must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf in accordance with this Clause.	CRA
	D2.16	Barriers to prevent falls		
D3D17	D2.16(a), (b) and (c)	Barriers to prevent falls	Trafficable surfaces above a meter in height are to be provided with a barrier.	CRA

Clause	[2019]	Description	Comments	Assessment
D3D18	Table D2.16a	Height of barriers	Generally, the minimum barrier height required is 1m in height. However, on stairways and ramps the minimum barrier height required is 865mm.	CRA
D3D19	Table D2.16a	Openings in barriers	The openings are to comply with the requirements of this clause.	CRA
D3D20	Table D2.16a	Barrier climbability	Barriers required on a floor more than 4m above the surface beneath must not incorporate climbable elements between 150mm to 760mm.	CRA
D3D21	D2.16(d)	Wire barriers	Wire barriers are not proposed in the development.	N/A
D3D22	D2.17	Handrails	Handrails are to comply with this Clause.	CRA
D3D23	D2.18	Fixed platforms, walkways, stairways and ladders	Where used must comply with AS1657, not proposed in the development.	N/A
D3D24	D2.19	Doorways and doors	A required exit with a power-operated door that leads directly to a road or open space, must open automatically upon power failure or activation of a fire and smoke alarm within the same compartment. A power-operated door in a path of travel to a required exit must be manually openable with a force not more than 110 N. **Basement 02** The perforated garage doors will be served as the required exits respectively from the loading dock area and basement carpark. These garage doors must be power-operated fitted with auto-fail safety devices and can be manually opened with a force not exceeding 110N.	CRA
D3D25	D2.20	Swinging doors	A swinging door in a required exit or forming part of a required exit must swing in the direction of egress unless— (i) it serves a building or part with a floor area not more than 200 m2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or (ii) it serves a sanitary compartment or airlock (in which case it may swing in either direction); and must not otherwise impede the path or direction of egress.	CRA
D3D26	D2.21	Operation of latch	All doorways must be provided with latches compliant with the requirements of this clause.	CRA
D3D27	D2.22	Re-entry from fire-isolated exits	This clause is not applicable as under 25 m in effective height.	N/A
D3D28	D2.23	Signs on doors	Signage is to be located on all fire and smoke doors in accordance with this Clause. For self-closing doors the sign is to stay “FIRE SAFETY DOOR DO NOT OBSTRUCT DO NOT KEEP OPEN” and for the door discharging from a fire-isolated exit “FIRE SAFETY DOOR – DO NOT OBSTRUCT”. The text is to be a minimum of 20mm in height and a colour contrasting to the background of the sign.	CRA
D3D29	D2.24	Protection of openable windows	Windows to the bedrooms of Class 2, where a fall of greater than 2m is possible, otherwise where a fall of greater than 4 m is possible, must comply with this clause.	CRA
D3D30	D2.25	Timber stairway: Concession	Timber stairways must comply with this clause	Noted
Part D4 – Access for People with a Disability				
An Access assessment of the development is part of separate report				
Specification 14 - Non-required stairways, ramps and escalators [2019: Spec D1.12]				
This clause does not apply as there are no non-required stairways, ramps or escalators.				
Specification 15 – Braille and tactile signs [2019: Spec D3.6]				
An Access assessment of the development is part of separate report				
Specification 16 – Accessible water entry/exit from swimming pools [2019: Spec D3.10]				
An Access assessment of the development is part of separate report.				

SECTION E – SERVICES AND EQUIPMENT				
Clause	**[2019]**	**Description**	**Comments**	**Assessment**
Part E1 – Fire fighting equipment				
E1D1	E1.0	DtS Provisions	Information only.	Noted
E1D2	E1.3	Fire hydrants	The building must be served by a fire hydrant system compliant with AS 2419.1-2021. The hydraulic consultant is to confirm coverage is achieved to the requirements of this clause and AS2419.1 Details of the proposed hydrant system is to be provided by a suitably qualified hydraulic consultant as part of the Construction Documentation. Any proposed deviations from DtS within the hydrant system design are to be raised by the hydraulic consultant for discussion with relevant stakeholders to determine whether a performance solution can be supported.	CRA
E1D3	E1.4	Fire hose reels	All non-residential parts of the building must be protected by a fire hose reel system in accordance with this clause and AS 2441-2005. Please add the locations of the Fire Hose Reels to the plans for assessment. Details of the proposed fire hose reel system is to be provided by a suitably qualified hydraulic consultant as part of the Construction Documentation. Any proposed deviations from DtS within the hose reel system design are to be raised by the hydraulic consultant for discussion with relevant stakeholders to determine whether a performance solution can be supported.	CRA
NSW E1D4 - E1D13	E1.5	Sprinklers	The entire building is to be protected with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 and 18. The sprinkler valve room is required to have direct connection to road or open space. The room or enclosure is to be secured with a system suitable for Fire and Rescue NSW (FRNSW). Any performance solution for the fire-isolated stairways used to access the sprinkler valve room must consider the impact of these non-compliances on the access to the valve room as a part of the performance solution. The building sprinkler control assemblies and fire hydrants shall be located within a fire-isolated exit, or fire-isolated passageway or room directly accessible from a fire-isolated exit. Since AS2118.1-2017 and AS2118.6-2012 is proposed, please ensure: • each sprinkler control assembly must be located between 1150 & 1800 mm above the FFL so as not to obstruct fire brigade egress to the fire hydrant. • The hydrant and sprinkler control valves must not reduce the egress width. The hydraulic consultant is to confirm coverage is achieved to the requirements of this clause.	CRA
E1D5	Table E1.5	Where sprinklers are required: all classifications	The building does not have an effective height or more than 25m and therefore this clause does not apply.	N/A

Clause	[2019]	Description	Comments	Assessment
E1D6	Table E1.5	Where sprinklers are required: Class 2 and 3 buildings other than residential care buildings	The building has a rise in storeys of 4, but an effective height of not more than 25m and therefore is required to be provided with a sprinkler system to Spec 18 and AS 2118.6.	CRA
E1D7	Table E1.5	Where sprinklers are required: Class 3 building used as a residential care building	The building does not contain class 3 residential care areas and therefore this clause does not apply.	N/A
E1D8	Table E1.5	Where sprinklers are required: Class 6 building	Sprinklers are required as the building contains a class 6 part with a fire compartment with: (a) A floor area of more than 3 500 m2, (b) A volume of more than 21 000 m3.	CRA
E1D9	Table E1.5	Where sprinklers are required: Class 7a building, other than an open-deck carpark	Sprinklers are required as the building contains a class 7a carpark with a fire compartment that accommodates more than 40 vehicles.	CRA
E1D10	Table E1.5	Where sprinklers are required: Class 9a health-care building used as a residential care building, Class 9c buildings	The building does not contain class 9a or 9c use and therefore this clause does not apply.	N/A
E1D11	Table E1.5	Where sprinklers are required: Class 9b buildings	The building does not contain class 9b use and therefore this clause does not apply.	N/A
E1D12	Table E1.5	Where sprinklers are required: additional requirements	The building does not contain an atrium and has not been assessed as a large isolated building and therefore this clause does not apply.	N/A
E1D13	Table E1.5 (note 4)	Where sprinklers are required: occupancies of excessive hazard	The building does not contain excessive hazards and therefore this clause does not apply.	N/A
E1D14	E1.6	Portable fire extinguishers	The building is to be provided with portable fire extinguishers in accordance with this provision and AS 2444. Within the residential areas a 2.5kg ABE powder extinguisher is to be located within 10m of all unit entry doors. Other areas in the building require coverage to AS2444. Please provide details of the portable fire extinguisher for assessment	CRA
E1D15	E1.8	Fire control centres	The building has an effective height of less than 25m and does not contain class 6, 7, 8, or 9 uses with a floor area or more than 18,000m^2. Therefore, the building is not required to be provided with a fire control centre and this clause does not apply.	N/A
E1D16	E1.9	Fire precautions during construction	In a building under construction not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit.	Noted

Clause	[2019]	Description	Comments	Assessment
E1D17	E1.10	Provisions for special hazards	Any proposed special hazards such as EV charging stations, or battery storage are to be detailed as part of the Construction Documentation.	CRA
Part E2 – Smoke hazard management				
E2D1	E2.0	DtS Provisions	Information only.	Noted
E2D2	E2.1	Application of Part	Information only.	Noted
E2D3	E2.2	General requirements	An air-handling system which does not form part of a smoke hazard management system in accordance with E2D4 to E2D20 and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must comply with the requirements of this clause. Each SOU in a Class 2 building is treated as a separate fire compartment.	CRA
E2D4	Table E2.2a	Fire-isolated exits	The exits must be fire isolated as per the requirements of this provision.	CRA
E2D5	Table E2.2a	Buildings more than 25 m in effective height: Class 2 and 3 buildings and Class 4 part of a building	The building has an effective height of less than 25m and therefore this clause does not apply.	N/A
E2D6	Table E2.2a	Buildings more than 25 m in effective height: Class 5, 6, 7b, 8 or 9b buildings	The building has an effective height of less than 25m and therefore this clause does not apply.	N/A
E2D7	Table E2.2a	Buildings more than 25 m in effective height: Class 9a buildings	The building has an effective height of less than 25m and therefore this clause does not apply.	N/A
E2D8	Table E2.2a	Buildings not more than 25 m in effective height: Class 2 and 3 buildings and Class 4 part of a building	In Class 2 part, it must be provided with an automatic smoke detection and alarm system complying with Specification 20. Where a required fire-isolated stairway serving the Class 2 or 3 parts also serves one or more storeys of Class 6 & 7 parts – (i) the fire-isolated stairway, including any associated fire-isolated passageway or fire-isolated ramp, must be provided with an automatic air pressurisation system for fire-isolated exits in accordance with AS 1668.1; or (ii) the Class 6 & 7 parts must be provided with— (A) an automatic smoke detection and alarm system complying with Specification 20; or (B) a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17;	CRA
E2D9	Table E2.2a	Buildings not more than 25 m in effective height: Class 5, 6, 7b, 8 and 9b buildings	As the development has a rise in storey of more than 2 and contains a Class 6 & 7b part, it must be provided with: (a) in each required fire-isolated stairway, including any associated fire-isolated passageway or fire-isolated ramp, an automatic air pressurisation system for fire-isolated exits in accordance with AS 1668.1; or (b) a zone pressurisation system between vertically separated fire compartments in accordance with AS 1668.1, if the building has more than one fire compartment; or (c) an automatic smoke detection and alarm system complying with Specification 20; or	CRA

Clause	[2019]	Description	Comments	Assessment
			(d) a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17. Note, vertically separated fire compartments are fire compartments above and below each other, and not fire compartments within the same storey.	
E2D10	Table E2.2a	Buildings not more than 25 m in effective height: large isolated buildings subject to C3D4	This clause does not apply to this development as it is not a large-isolated buildings subject to C3D4	N/A
E2D11	Table E2.2a	Buildings not more than 25 m in effective height: Class 9a and 9c buildings	This clause does not apply to this development as it is not a Class 9a and 9c buildings	N/A
E2D12	Table E2.2a	Class 7a buildings	A Class 7a building, including a basement, provided with a mechanical ventilation system in accordance with AS 1668.2, must comply with clause 5.5 of AS 1668.1.	CRA
E2D13	Table E2.2a	Basements (other than Class 7a buildings)	This clause does not apply to this development as it does not contain a basement other than a Class 7a building.	N/A
E2D14	Table E2.2b	Class 6 buildings – in fire compartments more than 2000 m2: Class 6 building (not containing an enclosed common walkway or mall serving more than one Class 6 sole-occupancy unit)	This clause does not apply to this development as it does not contain a Class 6 buildings in fire compartments more than 2000 m2 containing an enclosed common walkway or mall serving more than one Class 6 sole-occupancy unit.	N/A
E2D15	Table E2.2b	Class 6 buildings – in fire compartments more than 2000 m2: Class 6 building (containing an enclosed common walkway or mall)	This clause does not apply to this development as it does not contain Class 6 buildings in fire compartments more than 2000 m2 containing an enclosed common walkway or mall.	N/A
NSW E2D16	Table E2.2b	Class 9b – assembly buildings: night clubs, discotheques and the like	This clause does not apply to this development as it does not contain a Class 9b night club, discotheque or the like.	N/A
NSW E2D17	Table E2.2b	Class 9b – assembly buildings: exhibition halls, museums and art galleries	This clause does not apply to this development as it does not contain a Class 9b exhibition hall, museum or art gallery.	N/A
NSW E2D18	Table E2.2b	Class 9b – assembly buildings: theatres and public halls	This clause does not apply to this development as it does not contain a Class 9b theatres and public halls.	N/A
NSW E2D19	Table E2.2b	Class 9b – assembly buildings: theatres	This clause does not apply to this development as it does not contain Class 9b theatres and public halls.	N/A

Clause	[2019]	Description	Comments	Assessment
		and public halls (not listed in E2D18) including lecture theatres and cinema/ auditorium complexes		
NSW E2D20	Table E2.2b	Class 9b assembly buildings: other assembly buildings (not listed in E2D16 to E2D19)	Clause E2D20 has not been adopted for NSW	N/A
E2D21	E2.3	Provision for special hazards	No special hazards have been identified at the current design. Any proposed special hazards such as EV charging stations, or battery storage are to be detailed as part of the Construction Documentation.	CRA
Part E3 – Lift installations				
E3D1	E3.0	DtS Provisions	Information only.	Noted
E3D2	E3.1	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification 24. The lift manufacture is to ensure compliance with this clause is achieved as part of the CC stage.	CRA
E3D3	E3.2	Stretcher facility in lifts	The building has an effective height of less than 12m and therefore this clause does not apply.	N/A
E3D4	E3.3	Warning against use of lifts in fire	Warning signage stating DO NOT USE LIFTS IF THERE IS A FIRE is to be provided in accordance with this Clause. The lift manufacture is to ensure compliance with this clause is achieved as part of the CC stage.	CRA
E3D5	E3.4	Emergency lifts	The building has an effective height of less than 25m and therefore this clause does not apply.	N/A
E3D6	E3.5	Landings	Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Parts D2, D3 and D4	CRA
E3D7	E3.6, table E3.6a, Table E3.6b	Passenger lifts and their limitations	All lifts are capable of achieving an area greater than 1400 mm wide and 1600 mm deep. If the lift(s) provided are use of electric passenger lifts, electrohydraulic passenger lifts or inclined lifts they have no limitations. Details are to be provided at CC Stage.	CRA
E3D8	Table E3.6a, Table E3.6b	Accessible features required for passenger lifts	In an accessible building, every passenger lift must have the following features in the lift to provide for accessibility to the requirements of this clause.	CRA
E3D9	E3.7	Fire service controls	The building has an effective height of less than 12m and therefore this clause does not apply.	N/A
E3D10	E3.8	Residential care buildings	This clause does not apply to this development as it does not contain residential care as defined by the BCA.	N/A
E3D11	E3.9	Fire service recall control switch	The building has an effective height of less than 12m and therefore this clause does not apply.	N/A
E3D12	E3.10	Lift car fire service drive control switch	The building has an effective height of less than 12m and therefore this clause does not apply.	N/A
Part E4 – Visibility in an emergency, exit signs and warning systems				
E4D1	E4.0	DtS Provisions	Information only.	Noted
E4D2	E4.2	Emergency lighting requirements	The building is to be provided with emergency lighting in accordance with this Clause.	CRA

Clause	[2019]	Description	Comments	Assessment
E4D3	E4.3	Measurement of distance	Information only.	Noted
E4D4	E4.4	Design and operation of emergency lighting	Services designer to confirm the emergency lighting complies with the BCA and AS 2293.1-2018 as part of the construction documentation.	CRA
E4D5	E4.5	Exit signs	Services designer to confirm the exit signage complies with the BCA and AS 2293.1-2018 as part of the construction documentation.	CRA
E4D6	E4.6	Direction signs	Services designer to confirm the exit signage complies with the BCA and AS 2293.1-2018 as part of the construction documentation.	CRA
E4D7	E4.7	Class 2 and 3 buildings and Class 4 parts: Exemptions	The requirements of clause E4D5 do not apply to— (a) a Class 2 building in which every door referred to is clearly and legibly labelled on the side remote from the exit or balcony— (i) with the word "EXIT" in capital letters 25 mm high in a colour contrasting with that of the background; or (ii) by some other suitable method; and (b) an entrance door of a sole-occupancy unit in a Class 2 building.	CRA
E4D8	E4.8	Design and operation of exit signs	The exit lighting system is to comply with AS2293.1-2018. Services designer to confirm the exit signage complies with the BCA and AS 2293.1 as part of the construction documentation.	CRA
E4D9	E4.9	Emergency warning and intercom systems	The building has an effective height of less than 25m, does not contain a class 3 or 9 part subject this clause and these for is not required to have an EWIS.	N/A
Specification 17 – Fire sprinkler systems [2019: Spec E1.5]				
S17C1	1	Scope	This Specification sets out requirements for the design and installation of fire sprinkler systems.	Noted
S17C2	2	Adoption of AS2118	Subject to this Specification a sprinkler system must comply with AS2118.6 as set out in this Clause.	CRA
S17C3	3	Separation of sprinklered and non-sprinklered areas	Where a part of a building is not protected with sprinklers, the sprinklered and non-sprinklered parts must be fire separated with fire rated construction meeting that of a fire wall with an FRL of not less than -/120/120 in accordance with this Clause.	CRA
S17C4	4	Protection of openings	Any openings in construction separating sprinklered and non-sprinklered areas are to be protected in accordance with BCA Part C3, except where AS2118.1-2017 provides exemptions.	CRA
S17C5	5	Fast response sprinklers	Fast response sprinklers may be installed only if they are suitable for the type of application proposed and it is demonstrated that the sprinkler system is designed to accommodate their use.	Noted
S17C6	6	Sprinkler valve enclosures	Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road and open space. The room or enclosure is to be secured with a system suitable for Fire and Rescue NSW (FRNSW). The proposed building does not have a valve room. The sprinkler system is designed in accordance with AS2118.6-2012 (combined hydrant/sprinkler system). The sprinkler control valve assemblies are located on each floor level, either within a fire isolated stair enclosure or a fire isolated passageway leading off a fire isolated stair way. The sprinkler control assemblies are located adjacent the fire hydrant riser on each floor. Note, AS2118.6-2012 requires: ▪ the sprinkler control assemblies and hydrant to be located in an egress as provided for in the BCA. I.E.	FI

Clause	[2019]	Description	Comments	Assessment
			within a fire-isolated exits or fire-isolated passageway directly accessible from a fire-isolated exit. ▪ the assembly must be located between 1150 & 1800 mm above the FFL so as not to obstruct fire brigade egress to the fire hydrant. ▪ The hydrant and sprinkler control valves must not reduce the egress width.	
S17C7	7	Water supply	The Grade of water supply to the sprinkler system must be in accordance with this Clause.	CRA
S17C8	8	Building occupant warning system	The sprinkler system is to be connected to and activate a building occupant warning system complying with Clause 7 of Specification E2.2a.	CRA
S17C9	9	Connection to other systems	Where a smoke hazard management system is installed and is activated by smoke detectors the sprinkler system must, wherever practicable, be arranged to also active the smoke hazard management system. No smoke hazard management system is required for this development	N/A
S17C10	10	Anti-tamper devices	Where a sprinkler system is installed— i. over any stage area in a theatre, public hall or the like, visual and audible status indication of sprinkler valves must be provided at the location normally used by the stage manager; or ii. in a space housing lift electrical and control equipment (including machine rooms, secondary floors and sheave rooms), any valves provided to control sprinklers in these spaces must be located adjacent to the space. Any valves provided to control sprinklers required by (a) must be fitted with anti-tamper monitoring devices connected to a monitoring panel.	CRA
S17C11	11	Sprinkler systems in carparks	A carpark complying with Table 3.9 of Specification C1.1 is to comply with the requirements of this clause.	N/A
S17C12	12	Residential care buildings	This clause does not apply to this development as it does not contain any residential care parts	N/A
S17C13	13	Sprinkler system in lift installations	Where sprinklers are installed in a space housing lift electrical and control equipment, including machine rooms, secondary floors and sheave rooms, they must be of the dry system type in accordance with AS2118.1-2017.	CRA
S17C14		Early childhood centres	This clause does not apply to this development as it does not contain an early childhood centre	N/A
Specification 18 – Class 2 and 3 buildings not more than 25 m in effective height [2019: Spec E1.5a]				
S18C1	1	Scope and application	This Specification sets out requirements for the design and installation of fire sprinkler systems, and concessions for Class 2 and 3 buildings not more than 25 m in effective height with a rise in storeys of 4 or more. The Deemed to-Satisfy Provisions of this Specification take precedence where there is a difference to the Deemed-to-Satisfy Provisions of Sections C, D and E.	CRA
S18C2	2	System requirements	A required automatic fire sprinkler system installed in a Class 2 or 3 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; or ii. AS 2118.4, as applicable; or iii. FPAA101D, except for residential care buildings; or iv. FPAA101H, except for residential care buildings. A Class 2 or 3 building not more than 25 m in effective height with a rise in storeys of 4 or more provided with an	CRA

Clause	[2019]	Description	Comments	Assessment
			automatic fire sprinkler system under Clause 2(a)(i) or 2(a)(ii) may be constructed in accordance with Clause 3(a), as applicable, provided— i. the automatic fire sprinkler system is permanently connected to a fire alarm monitoring system connected to a fire station or fire station dispatch centre in accordance with Specification E2.2d if— (A) the system has more than 100 sprinkler heads; or (B) in the case of a residential care building, the building will accommodate more than 32 residents; and ii. the automatic fire sprinkler system is fitted with sprinklers complying with clauses 4.4, 4.5 and 5.5.2 of AS 2118.4 in bedrooms; and iii. an automatic smoke detection and alarm system is installed in accordance with Specification E2.2a except that it need not be connected to a fire alarm monitoring system connected to a fire station or fire station dispatch centre, and in the case of a residential care building it must be installed in accordance with— (A) Specification E2.2a Clause 4; or (B) both— (aa) Specification E2.2a Clause 3, provided Specification E2.2a Clause 3(a)(ii) is applied as if the building was not protected with a sprinkler system; and (bb) Specification E2.2d; and iv. in a residential care building, the automatic smoke detection and alarm system and the automatic fire sprinkler system are connected to a local fire indicator panel provided in accordance with Specification E2.2d; and fire orders are provided in a Class 3 building in accordance with G4.9 as for a building in an alpine area.	
S18C3	3	Permitted concessions	This clause outlines the permitted concession for the installation of the sprinkler system throughout.	CRA
Specification 19 – Fire control centres [2019: Spec E1.8]				
This specification does not apply to the development as it is not required to have a fire control centre by clause E1D15.				
Specification 20 – Smoke detection and alarm systems [2019: Spec E2.2a]				
S20C1	1	Scope	This Specification describes the installation and operation of automatic smoke detection and alarm systems.	Noted
S20C2	2	Type of System	The building must be provided with a smoke alarm system complying with clause 3 of Specification E2.2a, a smoke detection system complying with clause 4 of Specification E2.2a, or a combination of a smoke alarm system and a smoke detection system complying with clause 5 of Specification E2.2a.	CRA
S20C3	3	Smoke alarm system	A smoke alarm system must comply with this clause.	CRA
S20C4	4	Smoke detection system	A smoke detection system must comply with this clause.	CRA
S20C5	5	Combined smoke alarm and smoke detection system	A combined smoke alarm and smoke detection system must comply with this clause.	CRA
S20C6	6	Smoke detection for smoke control system	This clause does not apply	N/A
S20C7	7	Building occupant warning system	The Building Occupant Warning System must be activated by the detection system and sprinkler system	CRA
S20C8	8	System monitoring	This clause does not apply	NA
Specification 21 – Smoke exhaust systems [2019: Spec E2.2b]				
This clause does not apply				
Specification 22 – Smoke and heat vents [2019: Spec E2.2c]				
This clause does not apply				

Clause	[2019]	Description	Comments	Assessment
Specification 23 – Residential fire safety systems [2019: Spec E2.2d]				
S23C1	1	Application	This Specification describes the requirements for residential fire safety systems referenced in Specification 18. Clauses S23C3 to S23C7 applies to Class 3 residential care buildings. It covers installation requirements for local fire indicator panels (or alarm panels) that provide information to staff when a fire alarm is activated. Clauses S23C8 and S23C9 describe requirements for connecting residential sprinkler systems in Class 2 buildings to a fire station or other approved monitoring service.	Noted
S23C2	2	Residential local fire alarm systems – Residential care buildings	This clause does not apply as this development does not contain a residential care part.	N/A
S23C3	2(a)	Connection of residential sprinkler systems to a fire station or other approved monitoring services	(a) Connection to monitoring service: (i) Connection of a residential sprinkler system to a fire station or other approved monitoring service must be via a sprinkler alarm switch, connected to alarm signaling equipment. The connection from the alarm signaling equipment must be in accordance with AS 1670.3. (ii) The alarm signaling equipment must be installed— (A) in a secure, accessible position; and (B) in a weatherproof housing, if located externally; and (C) not more than 500 mm from the system flow switch. (b) Indication at the fire indicator panel — the fire signal from the alarm signalling equipment must be mimicked by an audible and visible signal at the fire indicator panel. Clauses S23C3 to S23C7 applies to Class 3 building hence these clauses do not comply.	N/A
S23C4	2(b)	Local fire indicator panel	Clauses S23C3 to S23C7 applies to Class 3 building hence these clauses do not comply.	N/A
S23C5	2(c)	Smoke alarms	Clauses S23C3 to S23C7 applies to Class 3 building hence these clauses do not comply.	N/A
S23C6	2(d)	Signal isolation interface units	Clauses S23C3 to S23C7 applies to Class 3 building hence these clauses do not comply.	N/A
S23C7	2(e)	Wiring	Clauses S23C3 to S23C7 applies to Class 3 building hence these clauses do not comply.	N/A
S23C8	3(a)	Connection to monitoring service	(1) Connection of a residential sprinkler system to a fire station or other approved monitoring service must be via a sprinkler alarm switch, connected to alarm signaling equipment. (2) The connection from the alarm signaling equipment must be in accordance with AS 1670.3. (3) The alarm signaling equipment must be installed— (a) in a secure, accessible position; and (b) in a weatherproof housing, if located externally; and (c) not more than 500 mm from the system flow switch.	CRA
S23C9	3(b)	Indication at the fire indicator panel	The fire signal from the alarm signalling equipment must be mimicked by an audible and visible signal at the fire indicator panel.	CRA

Clause	[2019]	Description	Comments	Assessment
Specification 24 – Lift installations [2019: Spec E3.1]				
S24C1	1	Scope	This Specification contains requirements for electric passenger lift installations and electrohydraulic passenger lift installations	Noted
S24C2	2	Lift cars exposed to solar radiation	A lift car exposed to solar radiation directly, or indirectly through re-radiation must comply with this Clause.	CRA
S24C3	3	Lift car emergency lighting	A lift car must have emergency lighting complying with this Clause.	CRA
S24C4	4	Cooling of lift shaft	While in service a lift shaft must have cooling in accordance with this Clause.	CRA
S24C5	5	Lift foyer access	Where there is a security foyer in a building access may be via locked security doors provided measures as set out in this Clause are in place.	CRA
S24C6	6	Emergency access doors in a single enclosed lift shaft	Emergency access doors in a single enclosed lift shaft are to be in accordance with this Clause.	CRA
Specification 25 – Photoluminescent exit signs [2019: Spec E4.8]				
S25C1	1	Scope	This Specification contains requirements for electric passenger lift installations and electrohydraulic passenger lift installations	Noted
S25C2	2	Lift cars exposed to solar radiation	A lift car exposed to solar radiation directly, or indirectly through re-radiation must comply with this Clause.	CRA
S25C3	3	Lift car emergency lighting	A lift car must have emergency lighting complying with this Clause.	CRA
S25C4	4	Cooling of lift shaft	While in service a lift shaft must have cooling in accordance with this Clause.	CRA
S25C5	5	Lift foyer access	Where there is a security foyer in a building access may be via locked security doors provided measures as set out in this Clause are in place.	CRA
S25C6	6	Emergency access doors in a single enclosed lift shaft	Emergency access doors in a single enclosed lift shaft are to be in accordance with this Clause.	CRA

SECTION F – HEALTH AND AMENITY

Part F1 – Surface water management, rising damp and external waterproofing

An assessment against Part F1 is not included in this report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.
Note: This part relates to stormwater drainage, and damp-proofing.

Part F2 – Wet areas and overflow protection

An assessment against Part F2 is not included in this stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.

Note: This part relates to waterproofing and provision for floor wastes in wet areas of buildings.

Part F3 – Roof and wall cladding

An assessment against Part F3 is not included in this stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.

Note: This part relates to roof coverings and weatherproofing of external walls.

Part F4 – Sanitary and other facilities

F4D1	F2.0	DtS Provisions	Information only.	Noted
F4D2	F2.1	Facilities in residential buildings	Each class 2 SOU must be provided with a kitchen sink, facilities for the preparation and cooking of food, a bath or shower, a toilet pan, a basin, laundry facilities for washing and drying clothes, including a laundry sink. A laundry sink must not double as a kitchen sink or basin.	CRA
F4D3	F2.2	Calculation of number of occupants and facilities	Details of Retail tenancy sanitary facilities have not been provided. It is assumed the provision of facilities is to be part of the fit-out for each tenancy and therefore are not part of this assessment.	Noted

F4D4	F2.3	Facilities in Class 3 to 9 buildings	Sanitary facilities will be provided in the building in accordance with this clause. The number of sanitary facilities required is calculated under this section. Facilities must be provided separately for males and females. **Retail** Toilet facilities are to be provided for the tenancy fit outs at the time of the appropriate approvals.	CRA
F4D5	F2.4	Accessible sanitary facilities	An access assessment of the development is part of separate report.	N/A
F4D6	Table F2.4a	Accessible unisex sanitary compartments	An access assessment of the development is part of separate report.	N/A
F4D7	Table F2.4B	Accessible unisex showers	An access assessment of the development is part of separate report.	N/A
F4D8	F2.5	Construction of sanitary compartments	Sanitary facilities provided must comply with this clause.	CRA
F4D9	F2.6	Interpretation: Urinals and washbasins	This clause provides detail for how to count continuous urinals and washbasins and closet pans replacing required urinals.	CRA
F4D10	F2.7	Microbial (legionella) control	This Clause is deleted from the BCA in NSW, as the installation of hot water, warm water and cooling water systems is regulated in the Public Health Regulation 2012.	Noted
F4D11	F2.8	Waste management	In a Class 9a health care building a slop hopper or other like device is to be provided in accordance with this Clause. This clause does not apply to this development as it has not Class 9a or Class 9c	N/A
F4D12	F2.9	Accessible adult change facilities	This clause does not apply to this development.	N/A
Part F5 – Room heights				
F5D1	F3.0	DtS Provisions	Information only.	Noted
F5D2	F3.1	Height of rooms and other spaces	The height of all spaces and rooms must comply with the requirements of this clause.	CRA
Part F6 – Light and ventilation				
F6D1	F4.0	DtS Provisions	Information only.	Noted
F6D2	F4.1	Provisions of natural light	**Class 2** Natural light must be provided to all habitable rooms.	CRA
F6D3	F4.2	Methods and extent of natural light	Elevations or a window schedule is required to confirm the provision of adequate natural light. Further details are required to confirm the natural light for habitable rooms is adequate. A window schedule may be provided with the area of the rooms and the area of glazing provided to be assessed and become part of this report	FI
F6D4	F4.3	Natural light borrowed from adjoining room	Where required, natural light can only be borrowed from adjoining rooms.	Noted
F6D5	F4.4	Artificial lighting	Artificial lighting must be provided throughout the building in accordance with the requirements of AS 1680.0-2009.	CRA
F6D6	F4.5	Ventilation of rooms	A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have— (a) natural ventilation complying with F6D7; or (b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 and AS/NZS 3666.1.	CRA

F6D7	F4.6	Natural ventilation	Natural ventilation to habitable rooms and shops requires a ventilating area of no less than 5% of the floor area of the room.	CRA
F6D8	F4.7	Ventilation borrowed from adjoining room	Natural ventilation can only be borrowed from adjoining rooms.	CRA
F6D9	F4.8	Restriction on location of sanitary compartments	Sanitary compartments must comply with this clause or meet the requirement of F6D10.	CRA
F6D10	F4.9	Airlocks	A sanitary compartment, that is prohibited under F4D9 from opening directly to another room, can meet requirements with the provision of mechanical exhaust ventilation to the sanitary compartment and privacy to the requirements of this clause.	CRA
F6D11	F4.11	Carparks	Every storey of a carpark, except an open-deck carpark, must have a system of mechanical ventilation complying with AS1668.2-2012 or a system of natural ventilation complying with Section 4 of AS1668.4-2012.	CRA
F6D12	F4.12	Kitchen local exhaust ventilation	Where a commercial kitchen has a cooking apparatus that has a total maximum electrical power input exceeding 8kW or a total gas power input exceeding 29mJ/h There is reference to kitchen provision in retail 05. Details of the commercial kitchen and the exhaust system may be provided to become a part of this report.	CRA
Part F7 – Sound transmission and insulation				
An assessment against Part F7 is not included in this report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation. Note: This part relates to measures required to reduce noise transmission between adjoining parts of the building. This part applies to class 2, 3 and 9c buildings only.				
Specification 26 – Waterproofing and water-resistance requirements for building elements in wet area [2019: Table F1.7]				
An assessment against this specification is not included in this report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Specification 27 – Accessible adult change facilities [2019: Spec F2.9]				
Refer to F4D12, the building is not required to be provided with an accessible adult change facility and therefore is not required to be assessed against this specification.				
Specification 28 – Sound insulation for building elements [2019: Spec F5.2]				
An assessment against this specification is not included in this report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Specification 29 – Impact sound – test of equivalence [2019: Spec F5.5]				
An assessment against this specification is not included in this report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				

SECTION G – ANCILLARY PROVISIONS				
Clause	**[2019]**	**Description**	**Comments**	**Assessment**
Part G1 – Minor structures and components				
G1D1	G1.0	DtS Provisions	Information only.	Noted
G1D2	G1.1	Swimming pools	The building does not contain a swimming pool and therefore this clause does not apply.	N/A
G1D3	G1.2	Refrigerated chambers, strong-rooms and vaults	The building does not contain any refrigerated chambers, strong-rooms or and therefore this clause does not apply.	N/A
G1D4	G1.3	Outdoor play spaces	The building does not contain a Class 9b early childhood centre and therefore this clause does not apply.	N/A
NSW G1D5	NSW G1.101	Provision for cleaning windows	A building must be provided with a safe manner of cleaning any windows located 3 or more storeys above the ground level via either windows that can be cleaned wholly from within the building or provision for the cleaning of the windows by a method complying with the WH&S Act 2001 and regulations made under that Act.	CRA
Part G2 – Boilers, pressure vessels, heating appliances, fireplaces, chimneys and flues				
G2D1	G2.0	DtS Provisions	Information only.	Noted
G2D2	G2.2	Installation of appliances	The installation of a stove, heater or similar appliance in a building must comply with AS/NZS2918-2018 for domestic solid fuel burning appliances or Specification 30 for pressure equipment.	CRA
G2D3	G2.3	Open fireplaces	This clause does not apply as the proposed development has no open fireplaces.	N/A
G2D4	G2.4	Incinerator rooms	This clause does not apply as the proposed development has no incinerator room.	N/A
Part G3 – Atrium construction				
The building does not contain an atrium that connects more than 2 storeys, or more than 3 storeys (if each storey is provided with a sprinkler system and one of those storeys is located at a level with direct egress to a road or open space). Therefore, an assessment against this part has not been undertaken and the remaining clauses have been removed from this report.				
Part G4 – Construction in alpine areas				
The building is not within an alpine area and therefore an assessment against this part has not been undertaken.				
Part G5 – Construction in bushfire prone areas				
This clause does not apply as the proposed development is not in a bushfire prone area				
Part G6 – Occupiable outdoor areas				
G6D1	G6.1	Application of Part	This Part applies to “occupiable outdoor areas”. The Communal Open Space provided on Level 01 is an occupiable outdoor area.	Noted
G6D2	G6.2	Fire hazard properties	The Communal Open Space provided on Level 01 must comply with the fire hazard requirements of this clause. **Gardens** All gardens and other vegetation that are a part of the communal open space must have the fire hazard properties as specified by this clause. To prevent debris, fire, and spread, all linings, materials, or assemblies used in the rooftop communal open space must have a fire test report to confirm their compliance with the required critical radiant flux or group number as per BCA 2022 Clause C2D11 and Specification 7. The applicable linings, materials, or assemblies are listed in Clause C2D11. In the rooftop communal open space, relevant items may include wall and ceiling linings, as well as attachments to floors, ceilings, and walls. Additionally, any awning or pergola situated above the BBQ area must comply with these material and assembly standards.	FI

Clause	[2019]	Description	Comments	Assessment
			If DtS cannot be achieved, it should be addressed by a performance solution. 	
G6D3	G6.3	Fire separation	For the purposes of the Deemed-to-Satisfy Provisions of C3D8, C3D9 and C3D10, a reference to a storey includes an occupiable outdoor area, however a fire wall cannot be used to separate an occupiable outdoor area into different fire compartments.	Noted
G6D4	G6.4	Provision of escape	For the purposes of the Deemed-to-Satisfy Provisions of Part D2, a reference to a storey or room includes an occupiable outdoor area. The travel distance to a single exit of 33.54 m is greater than the 20 m maximum – previously discussed in D2D5.	**PS**
G6D5	G6.5	Construction of exits	The requirements of Part D2 apply to the Communal Open Space provided on Level 01 in accordance with this clause	CRA
G6D6	G6.6	Fire fighting equipment	Fire fighting equipment must serve the Communal Open Space provided on Level 01 in accordance with this clause.	CRA
G6D7	G6.7	Lift installations	The requirements of Part E3 apply to the Communal Open Space provided on Level 01 in accordance with this clause.	CRA
G6D8	G6.8	Visibility in an emergency, exit signs and warning systems	The requirements of Part E4 are applicable to the Communal Open Space provided on Level 01 in accordance with this clause.	CRA
G6D9	G6.9	Light and ventilation	The requirements of clause F4.4, F4.8, and F4.9 are applicable to the Communal Open Space provided on Level 01 in accordance with this clause	CRA
G6D10	G6.10	Fire orders	This clause does not apply as the proposed development as it only relates to building that are in an alpine area.	Noted
Part G7 – Livable housing design				N/A
Part G7 does not apply in NSW as livable housing design requirements do not apply to sole-occupancy units in a Class 2 building in NSW. and therefore this part has been removed from this report.				
Specification 30 – Installation of boilers and pressure vessels [2019: Spec G2.2]				N/A
An assessment against this specification is not included in this report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Specification 31 – Fire and smoke control systems in buildings containing atriums [2019: Spec G3.8]				N/A
The building does not contain an atrium that connects more than 2 storeys, or more than 3 storeys (if each storey is provided with a sprinkler system and one of those storeys is located at a level with direct egress to a road or open space). Therefore, an assessment against this specification has not been undertaken and the remaining clauses have been removed from this report.				
Specification 43 – Bushfire protection for certain Class 9 buildings				
This Specification sets out bushfire protection measures for buildings described in G5D4. The subject development is not in a bushfire prone area hence this specification does not apply.				

SECTION I– SPECIAL USE BUILDINGS

The proposed development does not incorporate any uses subject to the provisions of Section I and therefore this section has been removed from the report.

SECTION J – ENERGY EFFICIENCY

An assessment against Section J has not been undertaken as part of this report.

Where applicable, a suitably qualified consultant is to be engaged to confirm compliance with this part. Credwell Energy is a specialised team and can offer this service.

If you require assistance, please contact Credwell Energy on 02 9281 8555 or info@credwell.com.au for further information.

7. Annexure A – Reviewed Documentation

This report has been based on the documentation listed below:

Architectural Details prepared by Urbana Corp Project Title: The Belrose Collection | Date 8 January 2024		
Drawing Number	Revision	Title
CC-101	4	Basement 04 plan
CC-102	4	Basement 03 plan
CC-103	4	Basement 02 plan
CC-104	4	Lower ground floor plan
CC-105	4	Ground floor plan
CC-106	4	Level 01 plan
CC-107	4	Roof plan
CC-201	1	Elevations
CC-202	1	Elevations
CC-301	1	Sections
CC-302	1	Sections
CC-303	1	Sections

8. Annexure B – Fire Safety Measures

Given the assessment in this report, the following fire safety measures are required to be installed in the building. This list is subject to change if Performance Solutions are proposed, or other options are taken during the Construction Certificate (CC) and/or construction stages.

	Fire Safety Measure	Standard of Performance
1.	Access panels, doors and hoppers to fire-resisting shaft	BCA 2022 Clause C4D14 Manufacturer's Specifications
2.	Automatic fail-safe devices (automatic doors)	BCA 2022 Clause D3D24 Manufacturer's Specifications
3.	Automatic fail-safe devices (electronic latching)	BCA 2022 Clause D3D26 Manufacturer's Specifications
4.	Automatic fire detection and alarm systems	BCA 2022 Part E2 Clause E2D3, E2D4, E2D8, E2D9, E2D12, E2D21 and Specification 20 Clause S20C4, S20C6 AS1670.1-2018 (amendment 1)
5.	Building occupant warning system	BCA 2022 Part E2 and Specification 20
6.	Automatic fire suppression systems (sprinklers) – Residential buildings (Class 2 or 3) greater than three storeys	BCA 2022 NSW E1D4- E1D13 and Specification 17 and Specification 18 AS 2118.1-2017 (amendment 1 & 2) AS 2118.4-2012 AS 2118.6-2012
7.	Emergency lighting	BCA 2022 Clauses E4D2 and E4D4 AS/NZS 2293.1-2018 (amendment 1)
8.	Exit signs	BCA 2022 Clauses E4D5, NSW E4D6 and E4D8 AS/NZS 2293.1-2018 (amendment 1)
9.	Fire dampers	BCA 2022 Clause C4D15 Manufacturer's Specification
10.	Fire doors	BCA 2022 Clauses C4D9, C4D12 and Specification 12 AS 1905.1-2015
11.	Fire hose reel systems	BCA 2022 Clause E1D3 AS 2441-2005 (amendment 1)
12.	Fire hydrant systems	BCA 2022 Clause E1D2 AS 2419.1-2021
13.	Fire seals protecting openings in fire-resisting components of the building	BCA 2022 Clause C4D15 AS 1530.4-2014 Manufacturer's Specification
14.	Fire shutters (option for providing protection of openings)	BCA 2022 Clauses C4D3, C4D4, C4D5 and Specification 12 Manufacturer's Specification
15.	Fire windows (option for providing protection of openings)	BCA 2022 Clauses C4D3, C4D4, C4D5 and Specification 12 Manufacturer's Specification
16.	Lightweight construction (fire rated)	BCA 2022 Clause C2D9 and Specification 6 Manufacturer's Specification
17.	Mechanical air handling systems (automatic shutdown)	BCA 2022 Clause E2D3 and Specification 20 AS 1668.1-2015 (amendment 1)
18.	Portable fire extinguishers	BCA 2022 Clause E1D14 AS 2444-2001
19.	Smoke alarms and heat alarms (internal alarms in residential units)	BCA 2022 Part E2 and Specification 20
20.	Smoke dampers	BCA 2022 Clause C3D6, Specification 17 and Clause E2D3
21.	Smoke doors	BCA 2022 Clause C3D6, Specification 11 and Specification 12
22.	Solid core doors	BCA 2022 Clause C4D12

	Fire Safety Measure	Standard of Performance
23.	Standby power systems	BCA 2022 Clause G3D8 and Specification G31
24.	Wall-wetting sprinkler and drencher systems over permanently closed or self-closing glazed elements (option for providing protection of openings)	BCA 2022 Clauses C4D3, C4D4 and C4D5 AS 2118.1-2017 & 2118.6-2012
25.	Warning and operational signs	BCA 2022 Clauses D3D28 & E3D4 Environmental Planning and Assessment Regulation 2000 (EP&A Reg) Clause 183
26.	Paths of travel	BCA 2022 Parts D1 and D2 EP&A Reg Clause 186
27.	Performance Solutions 1) C4D3 and C4D5 2) D2D5 3) D2D12 4) G6D4	The standard for performance required in the performance solution is to be detailed by the Fire Engineer.

9. Annexure C – Fire Resistance Levels

The following fire resistance levels (FRLs) are required for the various elements of the building. Where the table below refers to a fire source feature (FSF), this is as defined in the BCA as the far boundary of a road, river, lake or the like adjoining the allotment, or a side or rear boundary of the allotment, or an external wall of another building on the allotment which is not a Class 10 building.

Building Element – Type A Construction	Class 2	Class 7a	Class 6	Class 7b
Loadbearing External Walls - Less than 1.5m from a FSF - 1.5 - 3m from a FSF - 3m or more from a FSF	 90/90/90 90/60/60 90/60/30	 120/120/120 120/90/90 120/60/30	 180/180/180 180/180/120 180/120/90	 240/240/240 240/240/180 240/180/90
Non-Loadbearing External Walls - Less than 1.5m from a FSF - 1.5 - 3m from a FSF - 3m or more from a FSF	 -/90/90 -/60/60 -/-/-	 -/120/120 -/90/90 -/-/-	 -/180/180 -/180/120 -/-/-	 -/240/240 -/240/180 -/-/-
External Columns (not incorporated into an external wall) - Loadbearing - Non-loadbearing	 90/-/- -/-/-	 120/-/- -/-/-	 180/-/- -/-/-	 240/-/- -/-/-
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 - Non-loadbearing	 90/90/90 -/90/90	 120/120/120 -/120/120	 180/120/120 -/120/120	 240/120/120 -/120/120
Internal Walls – Bounding public corridors, public lobbies and the like – - Loadbearing - Non-loadbearing	 90/90/90 -/60/60	 120/-/- -/-/-	 180/-/- -/-/-	 240/-/- -/-/-
Internal Walls – Between or bounding sole-occupancy units – - Loadbearing - Non-loadbearing	 90/90/90 -/60/60	 120/-/- -/-/-	 180/-/- -/-/-	 240/-/- -/-/-
Internal Walls – Ventilating, pipe, garbage and the like shafts not used for the discharge of hot products of combustion – - Loadbearing - Non-loadbearing	 90/90/90 -/90/90	 120/90/90 -/90/90	 180/120/120 -/120/120	 240/120/120 -/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

Notes:

General Concession: Structures housing the lift and hot water plant on the roof are not required to have a FRL (concession available under BCA Specification 5 Clause S5C6(3) if the structures are non-combustible).

[1] Basement B04 floor does not require an FRL (concession available under BCA Specification 5 Clause S5C12 as the floor is laid directly on the ground).

[2] Roofs are not required to have an FRL (concession available under BCA Specification 5 Clause S5C15 as the covering is non-combustible and the building is of Class 2).

Internal columns and walls to top floor are permitted to have a reduced FRL (concession available under BCA Specification 5 Clause S5C17 as the building has an effective height of <25m and a roof without an FRL in accordance with Clause S5C15).

[3] Carparks may have a reduced FRL, however, please note that Clause D3D13 requires a minimum FRL of 120/120/120 (concession available under BCA Specification 5 Clause S5C19 as the carpark is sprinkler protected and occupies part of a storey separated with a fire wall and which is located below the Class 2 part separated in accordance with C3D10).

Specification 18 Concessions for FRL's

Residential buildings (Class 2 or 3) provided with a sprinkler system complying with AS2118.1 or AS2118.4 receive a discount under BCA Specification S18C4 to have the following FRL's:

1. The FRL for self-closing fire doors, as required by C4D9 and C4D12, may be reduced to not less than -/30/30.
2. The FRL for all non-loadbearing internal walls and shafts constructed of fire-protected, as required by Specification 5 to have FRLs greater than -/60/60, may be reduced to -/60/60 and service penetrations through non-loadbearing internal walls and shafts constructed of fire protected timber, as required by C4D15, may be reduced to not less than -/60/15.
3. All other non-loadbearing internal walls, as required by specification 5, may be reduced to -/45/45 and the FRL for service penetrations through internal non-loadbearing walls and shafts, as required by C4D15, may be reduced to -/45/15.
4. The FRL for fire-isolated stairways enclosed with non-loadbearing construction, as required by D2D4, may be reduced to -/45/45.