BCA LOGIC

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To:	Cite Group C/- Gartner Trovato Architects
Project:	321 Condamine Street, Manly Vale
Report:	BCA Assessment Report
Reference No:	111664-BCA-r1
Date:	4 June 2020
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Document Control

Revision	Date	Description	
111664-BCA-r1	4 June 2020	BCA Assessment Report (DA Stage)	
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			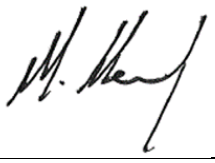

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EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings for the proposed four storey residential apartment building located at 321 Condamine Street, Manly Vale, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2019, Volume 1.

Part 5 'Matters for Further Consideration' of this report outlines the identified BCA compliance issues that require further information or consideration and/or assessment as Performance Solutions.

Any Performance Solution will need to be detailed in a separate report and must clearly indicate methodologies for achieving compliance with the relevant BCA Performance Requirements.

Item	Description	BCA Provision
Performance Solutions Required		
1.	Fire isolated stairs from basement level discharge to the ground floor level and require travel past the retail frontages before reaching open space	D1.7
2.	Residential non-fire isolated stair 02 – the discharge from the stair exceeds 15m to a single exit to Condamine Street (16.5m)	D1.9
3.	The construction of the roof and external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	No DtS Provisions – FP1.4 Performance Provisions Only
Building Code of Australia Compliance Matters to be Addressed		
1.	Windows located within 3 metres of the northern boundary to 333 Condamine street are to be provided with protection or otherwise blade walls to be constructed along the boundary afford windows protection	C3.2/C3.4
Further Information Required		
1.	Details of unobstructed continuity of top floor level fire rated walls through to the underside of the roof covering. Alternatively a fire rated ceiling lining needed throughout the top floor level.	Spec C1.1
2.	Details of direct or borrowed natural light and ventilation of study rooms located to the far end of units nearby the central courtyard. Specific units include 2,3,10,14,15,22, 28, 31, 32	F4.2/F4.6
3.	As the building is four (4) storeys a sprinkler system is required. Once the type of sprinkler system is chosen all concessions and design requirements for the chosen sprinkler system is to be included in the design.	E1.5/Spec E1.5a

Annexure B to this report provides a detailed assessment of the proposal against ALL relevant Deemed-to-Satisfy Provisions of the BCA.

1 BASIS OF ASSESSMENT

1.1. Location and Description

The building development, the subject of this report, is located at 321 Condamine Street, Manly Vale and comprises a four (4) storey residential apartment building located above four (4) ground floor level retail tenancies.

The building development is located on the corner of Condamine Street and Sunshine Street and is bordered by Somerville Place at the rear where vehicular access to the site is gained to the two (2) basement carparking levels.

1.2. Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA 2019, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of BCA 2019. Such assessment against relevant performance criteria will need to be addressed by means of a separate Performance Based Fire Safety Engineered Assessment Report to be prepared under separate cover.

1.3. Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume 1 – Building Code of Australia, 2019 Edition (BCA) incorporating the State variations where applicable. Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority. The BCA is updated generally on a three-yearly cycle, starting from the 1st of May 2016.

1.4. Limitations

This report does not include nor imply any detailed assessment for design, compliance or upgrading for:

(a) the structural adequacy or design of the building;

(b) the inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and

(c) the design basis and/or operating capabilities of any proposed electrical, mechanical or hydraulic fire protection services.

This report does not include, or imply compliance with:

(a) the National Construction Code – Plumbing Code of Australia Volume 3

(b) the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to),

(c) The deemed to satisfy provisions of Part D3 and F2.4 of BCA2019;

(d) Demolition Standards not referred to by the BCA;

(e) Work Health and Safety Act 2011;

(f) Requirements of Australian Standards unless specifically referred to;

(g) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and

(h) Conditions of Development Consent issued by the Local Consent Authority.

1.5. Design Documentation

This report has been based on the Design plans and Specifications listed in Annexure A of this Report.

1.6. Definitions

Effective height

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

Exit

Exit means –

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

(i) An internal or external stairway.

(ii) A ramp.

(iii) A fire-isolated passageway.

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

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

Fire compartment

Fire compartment means –

(a) the total space of a building; or

(b) when referred to in—

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

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

Fire-resistance level (FRL)

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

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order.

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

Fire-source feature

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

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

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

Fire wall

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

Loadbearing

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

Non-combustible

Non-combustible means—

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

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

Performance Requirement

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

Performance Solution

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

Sarking-type material

Sarking-type material means a material such as a reflective insulation or other flexible membrane of a type normally used for a purpose such as waterproofing, vapour management or thermal reflectance.

Smoke growth rate index

Smoke growth rate index (SMOGRA RC) means the index number for smoke used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining or attachment to a wall or ceiling.

Sole-occupancy unit

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

(a) a dwelling; or

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

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

2 BUILDING DESCRIPTION

For the purposes of the Building Code of Australia (BCA) the development may be described as follows.

2.1. Rise in Storeys (Clause C1.2)

The building has a rise in storeys of four (4)

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
2	Level 1, Level 2 & Level 3	Residential Sole Occupancy Units
6	Ground	Retail
7a	Basement 1 & Basement 2	Carparking

2.3. Effective Height (Clause A1.0)

The building has an *effective height* of less than 12 metres.

2.4. Type of Construction Required (Table C1.1)

The building is required to be of Type A Construction.

2.5. Floor Area and Volume Limitations (Table C2.2)

The building is subject to maximum floor area and volume limits of:-

Class 6	Maximum Floor Area	5000m^2
	Maximum Volume	30,000m^3
Class 7a	The carpark is to be provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5) and as such there are no maximum floor area or volume limitations for this area.	
Class 2	The Class 2 portions of the building are not subject to floor area and volume limitations of C2.2 as Table 3 of Specifications C1.1 and Clause C3.11 of the BCA regulates the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 classifications.	

2.6. Fire Compartments

The following *fire compartments* have been assumed:

(a) Basement levels

(b) Ground Floor Retail tenancies

(c) Ground floor lobbies and all residential levels

2.7. Exits

The following points in the building have been considered as the exits:

(a) First riser of each non-fire isolated stair at each level of residential portion

(b) Open space at ground floor level

(c) The fire door leading to fire isolated stairs to basement level

2.8. Climate Zone (Clause A1.0)

The building is located within Climate Zone 5

2.9. Location of Fire-source features

The fire source features for the subject development are:

North: The side allotment boundary to 333 Condamine Street

South: The far boundary of Sunshine Street

East: The far boundary of Condamine Street

West: The far boundary of Somerville Place

In accordance with Clause 2.1 of Specification C1.1, a part of a building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that–

(a) has an FRL of not less than 30/–/–; and

(b) is neither transparent nor translucent.

3 ESSENTIAL FIRE SAFETY MEASURES

The following fire safety measures are required to be installed in the building. The following table may be required to be updated as the design develops and options for compliance are confirmed.

Table 2. Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Access Panels & doors/hoppers (fire rated)	**BCA2019 C3.13** (Openings in Shafts) **BCA2019 Spec C3.4** AS 1905.1:2015 (Fire Resistant Doorsets) AS 1905.2:2005 (Fire Resistant roller shutters)
2.	Construction Joints	**BCA2019 C1.1, Spec C1.1** **BCA2019 C3.16** AS 1530.4:2014 & AS 4072.1:2005
3.	Fire doors	**BCA2019 C2.12** (Separation of Equipment) **BCA2019 C2.13** (Electricity Supply Systems) **BCA2019 C3.4** (Acceptable methods of Protection) **BCA2019 C3.5** (Doors in Fire Walls) **BCA2019 C3.8** (Openings in Fire Isolated Exits) **BCA2019 C3.10** (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 **BCA2019 C3.11** (Bounding Construction) **BCA2019 C3.13** (Opening in Shafts) Spec C3.4 AS1905.1: 2015
4.	Fire seals protecting openings in fire resisting components of the building	**BCA2019 C3.15** (Openings for service installations) **BCA2019 C3.16** (Construction joints) **BCA2019 Spec C3.15** AS1530.4:2014 & AS4072.1-2005
5.	Lightweight construction -Ceiling system incorporating a ceiling which has a resistance to the incipient spread of a fire	**BCA2019 C1.1, Spec. C1.1** AS1530.4:2014

Item	Essential Fire and Other Safety Measures	Standard of Performance
	to the space above itself of no less than 60 minutes.	
General		
6.	Portable fire extinguishers	**BCA2019 E1.6** AS 2444–2001
General Egress		
7.	Required Automatic Doors	**D2.19** (Doorways and Doors)
8.	Warning & operational signs	**BCA2019 D2.23 (**Signs on Fire Doors) **BCA2019 D3.6** (Braille Exit Signs) (Note: E4.5 (Exit Signs)) **BCA2019 E3.3** (Lift Signs)
Lifts		
9.	Access to Lift Pits • Located at lowest level or if >3m provided through an access door	**BCA2019 D1.17** (Access to Lift Pits) 'DANGER LIFT WELL – ENTRY OF UNAUTHORISED PERSONS PROHIBITED – KEEP CLEAR AT ALL TIMES'
Electrical Services		
10.	Automatic fail safe devices • Auto open Sliding Exit doors	**BCA2019 D2.21** (Operation of Latches) AS1670.1:2018 (Fire)
11.	Automatic fire detection & alarm: • Clause 5 - AS3786 Smoke Alarm systems powered from consumer mains to all residential SOU's, • Clause 5 – Due to sprinkler system the smoke detectors not required to residential common areas.	**BCA2019 Spec E2.2a** - Clause 5 AS3786-2013 & AS1670.1-2018
12.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1:2018
13.	Exit signs	**BCA2019 E4.5** (Exit Signs) **BCA2019 E4.6** (Direction Signs) **BCA2019 E4.8** (Design and Operation - Exits) AS/NZS 2293.1:2018
14.	System Monitoring (due to sprinkler)	**BCA2019 E2.2 , Table E2.2a,Spec E2.2a**

Item	Essential Fire and Other Safety Measures	Standard of Performance
		AS 1670.3:2018
Hydraulic Services		
15.	Automatic fire suppression system	**BCA2019 E1.5** **BCA2019 E1.5a** AS 2118.1:2017 (Sprinklers) AS 2118.6:2012 (Combined Sprinklers/Hydrant)
16.	Fire hydrant system	**BCA2019 E1.3** AS 2419.1:2005 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'
17.	Hose reel systems	**BCA2019 E1.4** AS 2441:2005
Mechanical Services		
18.	Fire dampers	**BCA2019 E2.2, Spec E2.2a, Spec E2.2b** **BCA2019 C3.15** AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
19.	Mechanical ventilation to carpark.	**BCA2019 E2.2, Table E2.2a, Table E2.2b** AS 1668.1:2015 (Amdt 1) **Note: 5.5.3 Override control** To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point. **Note:** Signage should be located at the car park entry indicating the location of the control switches.

4 FIRE RESISTANCE LEVELS

The following fire resistance levels (FRL's) are required for the various building elements, with a fire source feature being the far boundary of a road adjoining the allotment, a side or rear boundary or an external wall of another building on the allotment except a Class 10 structure.

Type A Construction

Table 3. Type A Construction

Item	Class 2	Class 7a	Class 6
Loadbearing External Walls (including columns and other building elements incorporated therein) - Less than 1.5m to a *fire-source feature* - 1.5 – less than 3m from a *fire-source feature* - 3m or more from a *fire source feature*	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
Non-Loadbearing External Walls - Less than 1.5m to a *fire-source feature* - 1.5 – less than 3m from a *fire-source feature* - 3m or more from a *fire-source feature*	-/90/90 -/60/60 -/-/-	-/120/120 -/90/90 -/-/-	-/180/180 -/180/120 -/-/-
External Columns - Loadbearing - Non-loadbearing	90/-/- -/-/-	120/-/- -/-/-	180/-/- -/-/-
Common Walls & Fire Walls	90/90/90	120/120/120	180/180/180
Stair and Lift Shafts required to be fire-resisting - Loadbearing - Non-loadbearing	90/90/90 -/90/90	120/120/120 -/120/120	180/120/120 -/120/120
Internal walls bounding sole occupancy units - Loadbearing - Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-	180/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: - Loadbearing - Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-	180/-/- -/-/-

Item	Class 2	Class 7a	Class 6
Ventilating, pipe, garbage and like shafts: - Loadbearing - Non-loadbearing	90/90/90 -/90/90	120/90/90 -/90/90	180/120/120 -/120/120
Other loadbearing internal walls, beams trusses and columns	90/-/-	120/-/-	180/-/-
Floors	90/90/90	120/120/120	180/180/180
Roofs[1]	90/60/30	120/60/30	180/60/30

N.B.

[1] The roof need not comply with any FRL's due to the sprinkler protection of the entire building.

5 MATTERS FOR FURTHER CONSIDERATION

5.1. General

Assessment of the Architectural design documentation against the Deemed-to Satisfy Provisions of the Building Code of Australia, 2019 (BCA) has revealed the following areas where compliance with the BCA may require further consideration and/or may involve assessment as Performance Based (Fire Engineered) *Performance Solutions*. Any *Performance Solutions* will be required to clearly indicate methodologies for achieving compliance with the relevant *Performance Requirements*.

Annexure B to this report provides a detailed assessment of the proposal against ALL relevant Deemed-to-Satisfy Provisions of the BCA.

Note: It is important that Annexure B is read in conjunction with the items below, as some matters may not have had sufficient information provided to allow a detailed assessment to be undertaken.

5.2. Dimensions and Tolerances

The BCA contains the minimum standards for building construction and safety, and therefore generally stipulates minimum dimensions which must be met. BCA Logic's assessment of the plans and specifications has been undertaken to ensure the minimal dimensions have been met.

The designer and builder should ensure that the minimum dimensions are met onsite and consideration needs to be given to construction tolerances for wall set outs, applied finishes and skirtings to corridors and bathrooms for example, tiling bed thicknesses and the like which can adversely impact on critical maters such as access for people with disabilities, stair and corridor widths and balustrade heights.

5.3. Performance Based Design – Performance Solutions

There are specific areas throughout the development where strict Deemed-to-Satisfy BCA Compliance will not be achieved by the proposed design and site constraints. These matters will need to be address in a detailed Fire Safety Engineering Report to be prepared for this development under separate cover:

Table 4. Performance Solutions

Item	Description of Performance Solution	DTS Provision
1.	Fire isolated stairs from basement level discharge to the ground floor level and require travel past the retail frontages before reaching open space	D1.7
2.	Residential non-fire isolated stair 02 – the discharge from the stair exceeds 15m to a single exit to Condamine Street (16.5m)	D1.9
3.	The construction of the external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	No DtS Provisions – FP1.4 Performance Provisions Only

5.4. Façade Construction – Non Combustible

As the building is required to be of Type A Construction, the external façade is required to be *non-combustible* and comply with Clause C1.9 of BCA2019 which states as follows:

(a) In a building required to be of Type A construction, the following building elements and their components must be *non-combustible*:

  (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.

  (ii) The flooring and floor framing of lift pits.

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

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

(c) A l*oadbearing* internal wall and a *loadbearing fire wall*, including those that are part of a *loadbearing* shaft, must comply with Specification C1.1.

(d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants, termite management systems, Glass including laminated glass, thermal breaks associated with glazing systems and damp-proof courses.

(e) The following materials, may be used wherever a *non-combustible* material is required:

  (i) Plasterboard.

  (ii) Perforated gypsum lath with a normal paper finish

  (iii) Fibrous-plaster sheet.

  (iv) Fibre-reinforced cement sheeting.

  (v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.

  (vi) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5.

  (vii) Bonded laminated materials where—

    (A) each lamina, including any core, is *non-combustible*; and

    (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and

    (C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.

  No external wall construction nominated on plans – further assessment required as design progresses to ensure *non-combustible* wall construction complies with above.

It is also noted that this clause also prohibits the use of in situ formwork containing combustible elements including PVC lined formwork products where the PVC lining remains in place for the life of the building where proposed to be used as an external wall element, common walls, the flooring and floor framing of lift pits, services riser shafts or non-*loadbearing* internal walls required to be fire resisting.

Note that perimeter walls of basement (below ground) floor levels are also deemed to be external walls.

ANNEXURE A DESIGN DOCUMENTATION

Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 5. Architectural Plans

Architectural Plans Prepared by Gartner Trovato Architects, project 1511 dated 12/5/2020
Drawing Number/Revision/Title
DA-02[P3] BASEMENT B2 PLAN
DA-03[P3] BASEMENT B1 PLAN
DA-04[P5] GROUND FLOOR PLAN
DA-05[P6] LEVEL 1 PLAN
DA-06[P5] LEVEL 2 PLAN
DA-07[P6] LEVEL 3 PLAN
DA-08[P2] ROOF PLAN - LOWER
DA-09[P4] ROOF PLAN - UPPER
DA-10[P4] EAST & SOUTH ELEVATIONS
DA-11[P3] WEST & NORTH ELEVATIONS
DA-12[P3] SECTION A & B
DA-13[P1] SECTION C
DA-14[P2] SECTION 1 & 3
DA-15[P4] VIEW 1
DA-16[P4] VIEW 2
DA-17[P4] VIEW 3
DA-18[P4] VIEW 4
DA-19[P4] VIEW 5
DA-20[P4] VIEW 6
DA-21[P2] VIEW 7
DA-22[P2] VIEW 8
DA-23[P2] VIEW 9
DA-100[P1] WALL TYPE SCHEDULE

ANNEXURE B DETAILED BCA 2019 ASSESSMENT

Annexure B – Detailed BCA 2019 Assessment

Outlined below is a detailed assessment of the design under the Deemed-to-Satisfy Provisions of the Building Code of Australia (BCA) including the State variations where applicable.

All Deemed-to-Satisfy clauses that are applicable to the subject building have been referred to below, including a comment adjacent to each clause of the proposal's ability to satisfy each respective clause.

The abbreviations outlined below have been used in the following table.

N/A	Not Applicable. The Deemed-to-Satisfy clause is not applicable to the proposed design.
Complies	The relevant provisions of the Deemed-to-Satisfy clause have been satisfied by the proposed design.
CRA – Refer Annexure C	'COMPLIANCE READILY ACHIEVABLE'. It is considered that there is not enough information included in the documentation to accurately determine strict compliance with the individual clause requirements. However, with further design development, compliance can readily be achievable. This item is to be read in conjunction with the BCA Specification included within Annexure C of this report.
FI	Further Information is necessary to determine the compliance potential of the building design.
PS	Performance Solution with respect to this Deemed-to-Satisfy Provision is necessary to satisfy the relevant Performance Requirements.
DNC	Does Not Comply.
Noted	BCA Clause simply provides a statement not requiring specific design comment or confirmation.

Deemed to Satisfy Clause Assessment

Table 6. Deemed to Satisfy Clause Assessment

Clause	Clause Requirements	Comment	Status
Section B: Structure			
Part B1 – Structural Provisions			
B1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
B1.1: Resistance to actions	The resistance of the building must be greater than the most critical action effect resulting from different combinations of actions, where the most critical action has been determined in accordance with this Part	Structural Engineer to certify at CC stage.	CRA – Refer Annexure C
B1.2: Determination of individual actions	The magnitude of actions must be determined in accordance with this Clause.	Structural Engineer to certify at CC stage.	CRA – Refer Annexure C
B1.4: Determination of structural resistance of materials and forms of construction	The structural resistance of materials and forms of construction must be determined in accordance with this Clause.	Structural Engineer to certify at CC stage.	CRA – Refer Annexure C
B1.5: Structural software	Structural software used in computer aided design of a building or structure within the geometrical limits of (b) of this Clause must comply with the ABCB Protocol for Structural Software.	Structural Engineer to certify at CC stage.	CRA – Refer Annexure C
B1.6 Construction of buildings in flood hazard areas	N/A	N/A	N/A

Section C: Fire Resistance			
Part C1 – Fire Resistance and Stability			
C1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C1.1: Type of construction required	The building is required to be of Type A Construction. Refer to Specification C1.1 requirements at the end of this Section.	The building can readily comply. Further details of construction and fire resistance levels to be assessed at Construction Certificate stage	CRA – Refer Annexure C
C1.2: Calculation of rise in storeys	The building has a rise in storeys of four (4)	Noted	Noted
C1.3: Buildings of multiple classification	Informational	Noted	Noted
C1.4: Mixed Types of construction	N/A	N/A	N/A
C1.5: Two Storey Class 2, 3 or 9c buildings	N/A	N/A	N/A
C1.6: Class 4 Parts of building	N/A	N/A	N/A
C1.7: Open spectator stands and indoor sports stadium	N/A	N/A	N/A
C1.8: Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
C1.9: Non-combustible building elements	(a) In a building required to be of Type A construction, the following building elements and their components must be *non-combustible*:	Further details to be assessed at Construction Certificate stage. However, it is noted that AFC Rediwall is proposed and this currently does not have a valid	CRA – Refer Annexure C

Section C: Fire Resistance			
	(iv) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (v) The flooring and floor framing of lift pits. (vi) Non-loadbearing internal walls where they are required to be fire-resisting. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of *non-combustible* construction in— (vii) a building required to be of Type A construction; and (viii) a building required to be of Type B construction, subject to C2.10, in— (A) a Class 2, 3 or 9 building; and (B) Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys. (c) A loadbearing internal wall and a loadbearing *fire wall*, including those that are part of a loadbearing shaft, must comply with Specification C1.1. (d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants, termite management systems, Glass including laminated glass, thermal breaks associated with glazing systems and damp-proof courses. (e) The following materials, may be used wherever a *non-combustible* material is required: (ix) Plasterboard. (x) Perforated gypsum lath with a normal paper finish. (xi) Fibrous-plaster sheet.	BCA2019 Codemark Certificate. This will need to be re-assessed with design development.	

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	(xii) Fibre-reinforced cement sheeting. (xiii) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. (xiv) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5. (xv) Bonded laminated materials where— (A) each lamina, including any core, is *non-combustible*; and (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and (C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively. This clause also prohibits the use of in situ formwork containing combustible elements including PVC lined formwork products where the PVC lining remains in place for the life of the building. Where the use of such products is proposed – in all instances the material must be the subject of a site specific Performance Assessment Report.		
C1.10: Fire hazard properties	Fire hazard properties of internal linings, materials and assemblies must comply with C1.10 of the BCA and Specification C1.10, including floor, wall and ceiling linings, air-handling ductwork, lift cars, insulation, *sarking-type materials* and attachments, or be considered *non-combustible*.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C

Section C: Fire Resistance			
C1.11: Performance of external walls in fire	N/A	N/A	N/A
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.	N/A	N/A
C1.13: Fire-protected timber: Concession	(a) N/A	N/A	N/A
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be *non-combustible* unless it is one of the following: (a) An ancillary element that is *non-combustible*. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grille not more than 2 m² in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and (iii) does not extend beyond one fire compartment; and	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C

Section C: Fire Resistance			
	(iv) is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that— (i) meets the relevant requirements of Table 4 of Specification C1.10 as for an internal element; and (ii) serves a storey— (A) at ground level; or (B) immediately above a storey at ground level; and (iii) does not serve an *exit*, where it would render the *exit* unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) A paint, lacquer or a similar finish. (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k).		
Part C2 – Compartment and Separation			
C2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C2.1: Application of Part	Informational - C2.2, C2.3 and C2.4 do not apply to a carpark provided with a sprinkler system complying with Specification E1.5 (other than an FPAA101D or FPAA101H system), an open-deck carpark or an open spectator stand.	Noted	Noted

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C2.2: General floor area and volume limitations	The size of *fire compartments* in the building must not exceed that specified in Table C2.2.	The fire compartment sizes are significantly less than the maximums permitted by this clause	Complies
C2.3: Large isolated buildings	N/A	N/A	N/A
C2.4: Requirements for open spaces and vehicular access	N/A	N/A	N/A
C2.5: Class 9a and 9c Buildings	N/A	N/A	N/A
C2.6: Vertical separation of openings in external walls	Where the vertical projection of an opening in an external wall falls no further than 450 mm outside an opening in the storey next below, the openings must be provided with vertical separation complying with Clause C2.6, that is: > They must be protected with a 900mm high (*FRL* 60/60/60) spandrel extending at least 600mm above the separating slab, or > They must be provided with a 1.1m horizontal projection (*FRL* 60/60/60) also extending at least 450mm either side of the openings. The above does not apply to openings within the same stairway. For the purposes of this clause, opening means that part of the external wall of a building that does not have an *FRL* of 60/60/60 or greater.	The building is likely to be provided with an AS 2118.1:2017 sprinkler system installed throughout therefore spandrel separation is not required. The type of sprinkler to be re-confirmed at Construction Certificate stage	N/A
C2.7: Separation by fire walls	**Construction** - A *fire wall* must be constructed in accordance with the following: > Any openings in a *fire wall* must not reduce the *FRL* required by Specification C1.1 for the *fire wall*,	Fire wall separation would only be needed at ground floor level to separate the retail, residential and carpark fire compartments.	CRA – Refer Annexure C

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	except where permitted by the Deemed-to-Satisfy Provisions of Part C3. > Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not pass through or cross the *fire wall* unless the required fire resisting performance of the *fire wall* is maintained. **Separation of *fire compartments*** – A part of a building separated from the remainder of the building by a *fire wall* may be treated as a separate *fire compartment* if it is constructed in accordance with this clause and the *fire wall* extends to the underside of – > a floor having an *FRL* required for a *fire wall*; or > the roof covering.	Further details to be assessed at Construction Certificate stage	
C2.8: Separation of classifications in the same storey	Where a storey has different classifications located alongside one another: > each building element in that storey must have the higher *FRL* prescribed in Specification C1.1 for that element for the classifications concerned; or > the parts must be separated in that storey by a *fire wall* having the higher *FRL* prescribed in Table 3; or > where one part is a carpark complying with Table 3.9, 4.2 or 5.2 of Specification C1.1, the parts may be separated by a *fire wall* complying with the appropriate Table.	See comments in above clause.	CRA – Refer Annexure C
C2.9: Separation of classifications in different storeys	Floors separating storeys of different classifications must have an *FRL* of not less than that prescribed in Specification C1.1 for the classification of the lower storey. Note: Determination of Floor *FRL*'s must also consider compliance with C2.7 whereby the floor must have the	The concrete floor slab between storeys is considered to be able to meet the requirements of this clause. Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C

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	same *FRL* as the fire wall of the *fire compartment* below and D2.12 whereby roof as open space must have an *FRL* not less than 120/120/120.		
C2.10: Separation of lift shafts	Passenger lifts must be separated from the remainder of the building by enclosure in a fire rated shaft achieving an *FRL* prescribed by Table 3 of Specification C1.1.	The lift is shown in a separate shaft as required. Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
C2.11: Stairways and lifts in one shaft	A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft.	Lift is separate	Complies
C2.12: Separation of equipment	Any of the following equipment located in the building must be separated from the remainder of the building: > lift motors and lift control panels; or > emergency generators used to sustain emergency equipment operating in the emergency mode; or > central smoke control plant; or > boilers; or > a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more. Equipment need not be separated in if the equipment comprises: > smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or > stair pressurizing equipment installed in compliance with the relevant provisions of AS 1668.1:2015; or > a lift installation without a machine room; or	It is not likely that the building will contain any of the listed equipment. If fire hydrant pumps were needed then the room would not need to be fire rated due to the sprinkler protection required of the building. Further details to be assessed at Construction Certificate stage	N/A

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	> equipment otherwise adequately separated from the remainder of the building. Separation must be by construction having an *FRL* as required by Specification C1.1, but not less than *FRL* 120/120/120 with openings protected by self-closing fire doors having an *FRL* of not less than –/120/30. Separation of on-site fire pumps must comply with the requirements of AS 2419.1:2005.		
C2.13: Electricity supply system	> Any electrical substation located within the building must be separated from the remainder of the building by construction having an *FRL* of not less than 120/120/120, and doorways protected with self-closing fire doors having an *FRL* of not less than –/120/30. > A main switchboard which sustains emergency equipment operating in the emergency mode must be fire separated from any other part of the building by construction having an *FRL* of not less than 120/120/120 and have the doorway fitted with self-closing fire door having an *FRL* of not less than –/120/30. > Any electrical conductors located within the building that supply a substation or main switchboard for emergency equipment must comply with BCA clause C2.13. > Emergency equipment switchgear must be separated from non-emergency equipment switchgear by metal partitions designed to minimize the spread of a fault from the non-emergency equipment switchgear. > Emergency equipment includes but is not limited to the following: o fire hydrant booster pumps;	The building will likely only have sprinkler pumps which would be diesel and therefore, as all other emergency equipment is battery backed up it is not likely that the main switchroom will need fire rating. However, this is common practice as it is typically located against other fire rated rooms. Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C

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	○ sprinkler pumps; ○ hose reel pumps; ○ air-handling systems designed to exhaust and control the spread of smoke; ○ emergency lifts; ○ control and indicating equipment; and ○ sound systems and intercom systems for emergency purposes.		
C2.14: Public corridors in Class 2 and 3 Buildings	Public corridors in Class 2 parts that exceed 40 m in length must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Specification C2.5.	Public corridors are less than 40m	Complies
Part C3 – Protection of Openings			
C3.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C3.1: Application of Part	(a) The Deemed-to-Satisfy Provisions of this Part do not apply to– (i) Control joints, weep holes and the like in external walls of masonry construction and joints between panels in external walls of pre-cast concrete panel construction if, in all cases they are not larger than necessary for the purpose; and (ii) Non-combustible ventilators for subfloor or cavity ventilation, if each does not exceed 45 000 mm2 in face area and is spaced not less than 2 m from any other ventilator in the same wall; and	Noted	Noted

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	(iii) Openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like; and (iv) In a carpark– (A) Service penetrations through; and (B) Openings formed by a vehicle ramp in, (aa) A floor other than a floor that separates a part not used as a carpark, providing the connected floors comply as a single fire compartment for the purposes of all other requirements of the Deemed-to-Satisfy Provisions of Sections C, D and E. (b) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings in building elements required to be fire-resisting include doorways, windows (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL. (c) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings, other than those covered under (a)(iii), between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the building, are deemed to be openings in an external wall.		
C3.2: Protection of openings in external walls	Openings in an external wall that is required to have an *FRL* must be protected in accordance with C3.4 if the distance between the opening and the *fire-source feature* is:	There are windows located within 3m to the side allotment boundary to 333 Condamine Street that will need blade walls.	CRA – Refer Annexure C

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		> less than 3 m from a side or rear boundary; or > less than 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or > less than 6 m from another building on the allotment that is not Class 10; and if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand. Where wall-wetting sprinklers are used, they must be located externally.	If no blade walls are installed then protection of openings needed in accordance with BCA Clause C3.4. Further details to be assessed at Construction Certificate stage	
C3.3:	Separation of external walls and associated openings in different fire compartments	N/A	N/A	N/A
C3.4:	Acceptable methods of protection	Where protection is required, openings must be protected as follows: <u>Doorways:</u> (ii) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or (iii) –/60/30 fire doors that are self-closing. <u>Windows:</u> (i) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or	Where required, windows within 3m to boundary to be protected. Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C

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	(ii) –60/– fire windows that are automatically closing or permanently fixed in the closed position; or (iii) –/60/– automatic closing fire shutters. Other openings: (i) Excluding voids – internal or external wall-wetting sprinklers; or (ii) Construction having an *FRL* not less than –/60/– Fire doors, fire windows and fire shutters must comply with BCA Specification C3.4.		
C3.5: Doorways in fire walls	Doorways in the fire walls must be protected by a self-closing fire door that achieves an *FRL* of not less than that required by Specification C1.1 for the *fire wall* except that each door must have an insulation level of at least 30.	The locations of the required fire walls to be firmed up with design development. All doors in fire walls to comply with this clause.	CRA – Refer Annexure C
C3.6: Sliding fire doors	N/A	N/A	N/A
C3.7: Protection of doorways in horizontal exits	N/A	N/A	N/A
C3.8: Openings in fire-isolated exits	Doorways that open to fire-isolated stairways, fire-isolated passageways or fire-isolated ramps, and are not doorways opening to a road or open space, must be protected by –/60/30 fire doors that are self-closing, or automatic-closing in accordance with (ii) and (iii) of Clause C3.8.	All doors to fire isolated stairs to basement level to be protected with fire doors in accordance with this clause.	CRA – Refer Annexure C
C3.9: Service penetrations in fire-isolated exits	The fire isolated *exits* are not to be penetrated by any services **other** than: > electrical wiring associated with:	All fire isolated stairs shall have no services penetrating in accordance with this clause.	CRA – Refer Annexure C

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	○ a lighting, detection, or pressurization system serving the exit; or ○ a security, surveillance or management system serving the exit; or ○ an intercommunication system or an audible or visual alarm system in accordance with D2.22; or ○ the monitoring of hydrant or sprinkler isolating valves. > ducting associated with a pressurisation system if it; (iii) is constructed of material having an *FRL* of not less than –/120/60 where it passes through any other part of the building; and (iv) does not open into any other part of the building; or > water supply pipes for fire services.		
C3.10: Openings in fire-isolated lift shafts	> Lift landing doors are required to be fire doors with an *FRL* of -/60/- that comply with AS 1735.11:1986, and be set to remain closed except when discharging or receiving, passengers, goods or vehicles. > Panels in the wall of the lift shaft must be backed by construction having an *FRL* of not less than –/60/60 if it exceeds 35 000 mm2 in area.	Lift landing doors and control buttons to be protected in accordance with this clause	CRA – Refer Annexure C
C3.11: Bounding Construction: Class 2, 3 and 4 Buildings	> The doorways between sole occupancy units and the public lobbies and any common / service rooms and the public lobbies (class 2 parts) must be protected by self–closing -/60/30 fire doors.	Residential apartment doors to be protected in accordance with this clause	CRA – Refer Annexure C
C3.12: Openings in floors and ceilings for services	Where services pass through a floor which is required to achieve an *FRL* or a ceiling required to have a resistance	Services to be protected in accordance with this clause	CRA – Refer Annexure C

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	to the incipient spread of fire, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15.		
C3.13: Openings in shafts	Openings in shafts must be protected by: (a) if it is in a sanitary compartment – a door or panel which together with its frame, is *non-combustible* or has an *FRL* of not less than –/30/30; or (b) a self-closing –/60/30 fire door or hopper; or (c) an access panel having an *FRL* of not less than –/60/30; or (d) if the shaft is a garbage shaft – a door or hopper of *non-combustible* construction.	Shafts to be protected in accordance with this clause	CRA – Refer Annexure C
C3.15: Openings for service installations	Where services pass through an element which is required to achieve an *FRL* (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15. **Note:** contractors should check with PCA to confirm compliance with their proposed fire stopping method.	Services to be protected in accordance with this clause	CRA – Refer Annexure C
C3.16: Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4:2014 to achieve the required *FRL*.	Construction joints to be protected in accordance with this clause	CRA – Refer Annexure C
C3.17: Columns protected with lightweight construction to achieve an FRL	A column protected by lightweight construction to achieve an *FRL* which passes through a building element that is required to have an *FRL* or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required *FRL* or resistance to the incipient spread of fire.	There are no steel columns proposed at this stage. Where provided, they are to be protected in accordance with this clause	CRA – Refer Annexure C

Section C: Fire Resistance				
Specification C1.1 – Fire-Resisting Construction				
2.0:	General Requirements	Informational	Noted	Noted
2.1:	Exposure to fire-source features	A building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the *fire-source feature*, or vertical projection of the feature, is not obstructed by another part of the building that– (i) has an *FRL* of not less than 30/–/–; and (ii) is neither transparent nor translucent.	Blade walls to be provided to protect external window openings in accordance with this clause.	Noted
2.2:	Fire protection for a support of another part	Where a part of a building required to have an *FRL* depends upon direct vertical or lateral support from another part to maintain its *FRL*, that supporting part must have an *FRL* not less than that required by other provisions of this Specification; and if located within the same *fire compartment* as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	Structural design to consider the requirements of this clause	CRA – Refer Annexure C
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 meets the requirements of Spec C1.1 clause 2.3 (a) & (b).	Structural design to consider the requirements of this clause	CRA – Refer Annexure C
2.4:	Attachments not to impair fire-resistance	The method of attaching or installing a finish, lining, ancillary element or service installation to a building element must not reduce the fire-resistance of that element to below that required.	No details of all attachments at this stage. Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
2.5:	General concessions	The only relevant concessions include:	No fire rating needed to roof mounted equipment	Noted

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		> Structures on roofs Structures on roofs — A *non-combustible* structure situated on a roof need not comply with the other provisions of this Specification if it only contains— (i) lift motor equipment; or (ii) one or more of the following: (A) Hot water or other water tanks. (B) Ventilating ductwork, ventilating fans and their motors. (C) Air-conditioning chillers. (D) Window cleaning equipment. (E) Other service units that are *non-combustible* and do not contain flammable or combustible liquids or gases.		
2.6:	Mezzanine floors: Concession	N/A	N/A	N/A
2.7:	Enclosure of shafts	Fire-isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction having an *FRL* required for the walls of a non-load-bearing shaft in the same building, as per specification C1.1. This fire rating is required in two directions. The above does not apply to shafts extending beyond the roof covering, other than fire isolated stair and lift shafts and the bottom of *non-combustible* shafts laid directly on the ground.	All shafts to be sealed at the top and bottom in accordance with this clause, except exhaust risers which need to comply with AS1668.1-2015	CRA – Refer Annexure C
2.8:	Carparks in Class 2 and 3 Buildings	Class 2 buildings not more than 4 storeys	As there are more than two basement carpark storeys this clause does not apply	N/A

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2.9:	Residential Aged Care building: Concession			CRA – Refer Annexure C
3.0:	Type A fire-resisting construction	N/A	N/A	N/A
3.1:	Fire-resistance of building elements	> The FRL's of all elements are to be in accordance with the FRL's detailed in the Table contained within Part 4.0 of this report. > External walls, common walls and the flooring and floor framing of lift pits must be *non-combustible*. (Note: insulation and sarking used must be *non-combustible*) > Internal walls required to be fire rated must extend to– (i) to the underside of the floor next above; or (ii) the underside of a roof complying with Table 3; or (iii) if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the *non-combustible* roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other combustible building elements; or (iv) a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes. > Load bearing internal walls (including those part of a loadbearing shaft) and fire walls must be of concrete or masonry.	As a building of Type A Construction it is proposed to have concrete slab, walls and roof to most parts and the building can readily comply with the requirements of this clause. Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C

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	> Non-loadbearing internal walls required to be fire rated, as well as non-load bearing lift, ventilating, pipe, garbage or similar shaft wall must be of non-combustible construction. **Note:** This includes *non-combustible* insulation. When an insulation material is not certified as *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage. > The *FRL*s specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5m of a window and are exposed through that window to a *fire-source feature*. > It should also be noted that if Dincel/Rediwall material is to be used as an element where the BCA requires such element to be *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage		
3.2: Concessions for floors	A floor need not comply with Table 3 if— (a) it is laid directly on the ground; or (b) it is within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building.	The basement floor needs no FRL	Noted
3.3: Floor Loading of Class 5 and 9b buildings: Concession	N/A	N/A	N/A
3.4: Roof superimposed on concrete slab: Concession	N/A	N/A	N/A

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3.5: Roof: Concession	A roof need not comply with Table 3 if its covering is *non-combustible* and the building— (a) has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 installed throughout; or (b) has a rise in storeys of 3 or less; or (c) is of Class 2 or 3; or (d) has an *effective height* of not more than 25 m and the ceiling immediately below the roof has a *resistance to the incipient spread of fire* to the roof space of not less than 60 minutes.	As the building is class 2 and is to be sprinkler protected the roof need not have an FRL. The roof is concrete in parts and likely to be metal in others. The lightweight ceiling sections will likely need an RISF60 ceiling as it is not possible to extend fire rated walls unobstructed through to the	CRA – Refer Annexure C
3.6: Roof lights	If a roof is required to have an *FRL* or its covering is required to be *non-combustible*, roof lights or the like installed in that roof must— (a) have an aggregate area of not more than 20% of the roof surface; and (b) be not less than 3 m from— (i) any boundary of the allotment other than the boundary with a road or public place; and (ii) any part of the building which projects above the roof unless that part has the *FRL* required of a *fire wall* and any openings in that part of the wall for 6 m vertically above the rooflight or the like are protected in accordance with C3.4; and (iii) any rooflight or the like in an adjoining *sole-occupancy unit* if the walls bounding the unit are required to have an *FRL*; and (iv) any rooflight or the like in an adjoining fire-separated section of the building; and	There are rooflights currently within 3m of adjacent sole occupancy units that require relocation. Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C

Section C: Fire Resistance				
		(c) if a ceiling with a resistance to the incipient spread of fire is required, be installed in a way that will maintain the level of protection provided by the ceiling to the roof space.		
3.7:	Internal columns and walls: Concession	For a building with an *effective height* of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than *fire walls* and shaft walls may have in a Class 2 or 3 building: FRL 60/60/60	Internal loadbearing walls are permitted to have FRL --/60/60 to top floor level. This is consistent with lower level non-loadbearing walls.	CRA – Refer Annexure C
3.8:	Open spectator stands and indoor sports stadiums concession	N/A	N/A	N/A
3.9:	Carparks	N/A	N/A	N/A
3.10:	Class 2 and 3 buildings Concession	N/A	N/A	N/A
Specification C1.10 – Fire Hazard Properties				
1.	Scope	Informational	Noted	-
2.	Application	Informational	Noted	Noted
3.	Floor linings and floor coverings	A floor lining or floor covering must have– (a) a *critical radiant flux* not less than that listed in Table 2; and (b) in a building not protected by a sprinkler system complying with Specification E1.5, a maximum	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C

Section C: Fire Resistance				
		smoke development rate of 750 percent-minutes; and (c) a *group number* complying with Clause 6(b), for any portion of the floor covering that is continued more than 150 mm up a wall.		
4.	Wall and ceiling linings	(a) A wall or ceiling lining system must comply with the *group number* specified in Table 3 and for buildings not fitted with a sprinkler system complying with Specification E1.5 have– (i) a *smoke growth rate index* not more than 100; or (ii) an *average specific extinction area* less than 250 m2/kg. (b) A *group number* of a wall or ceiling lining and the *smoke growth rate index* or *average specific extinction area* must be determined in accordance with AS 5637.1:2015.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
5.	Air-handling ductwork	Rigid and flexible ductwork must comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
6.	Lift cars	Materials used as— (a) floor linings and floor coverings must have a *critical radiant flux* not less than 2.2; and (b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1:2015.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
7.	Other materials	Materials and assemblies not included in Clauses 3, 4, 5 or 6 must not exceed the indices set out in Table 4.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C

Section C: Fire Resistance				
Specification C3.4 – Fire Doors, Smoke Doors, Fire Window and Shutters				
1.	Scope	Informational	Noted	Noted
2.	Fire doors	Fire doorsets must comply with AS 1905.1:2015 and not fail by radiation through any glazed part during the period specified for integrity in the required *FRL*.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
3.	Smoke doors	Smoke doors must be constructed so that smoke will not pass from one side of the doorway to the other and, if they are glazed, there is minimal danger of a person being injured by accidentally walking into them. Refer to Clause 3.2 of BCA Specification C3.4.	N/A	N/A
4.	Fire shutters	Fire shutters must comply with Clause 4 of BCA Specification C3.4.	N/A	N/A
5.	Fire windows	Fire window must be identical to the prototype which achieved the required *FRL* and be installed in the same manner and in an opening that is not larger than the tested prototype.	N/A	N/A

Section D: Access and Egress				
Part D1 – Provision for Escape				
D1.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
D1.1:	Application of Part	The Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or a Class 4 part of a building.	Noted	Noted

Section D: Access and Egress			
D1.2: Number of exits required	**Basement** Not less than 2 *exits* are required. **Upper Levels** All other levels require at least a single exit subject to travel distance.	Complies	Complies
D1.3: When fire-isolated stairways and ramps are required	Every *exit* stairway must be fire-isolated, except for stairs to a residential building connecting three (3) storeys plus one additional storey it contains only carparking or the building is sprinkler protected.	As the building is required to be sprinkler protected it is possible to have four (4) levels connected by the non-fire isolated stair which is the case in this building. The basement level carparking stairs connects three levels in a sprinkler protected building and are permitted to be non-fire isolated stairs. However, it is common to provide fire isolated stairs to basement levels as this eliminates additional handrail and tactile indicator requirements.	Complies
D1.4: Exit travel distances	Class 2 residential — > The entrance doorway of each *sole-occupancy unit* must be not more than – ○ 6 m from an *exit* or from a point from which travel in different directions to 2 *exits* is available; or ○ 20 m from a single *exit* serving the storey at the level of egress to a road or open space; and > No point on the floor of a room which is not in a *sole-occupancy unit* must be more than 20 m from an *exit* or from a point at which travel in different directions to 2 *exits* is available. Class 7a carpark—	Travel distance is less than the maximums permitted by this clause	Complies

Section D: Access and Egress			
	No point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m. > no point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m; and > in a Class 5 or 6 building, the distance to a single *exit* serving a storey at the level of access to a road or open space may be increased to 30 m.		
D1.5: Distance between alternative exits	*Exits* that are required as alternative means of egress must be– (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 *exits* is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than— (i) in a Class 2 or 3 building — 45 m apart; or (ii) in all other cases — 60 m apart; and (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart. Note: the distance between *exits* must be measured through the point at which travel two *exits* is available.	Travel distance is less than the maximums permitted by this clause	Complies
D1.6: Dimensions of exits and paths of travel to exits	In a required *exit* or path of travel to an *exit*–	At this stage the exits appear to be 1m width and 2m height in accordance with this clause.	CRA – Refer Annexure C

Section D: Access and Egress			
	> the unobstructed height throughout *exits* and paths of travel to *exits* must not be less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and > the unobstructed width of each *exit* or path of travel to an *exit*, except for doorways must be not less than 1m; > the unobstructed width of doorways must be not less than 750 mm, unless providing access for people with disabilities in which case the unobstructed width must be not less than 850 mm. > the required width of a stairway or ramp must be measured clear of all obstructions such as handrails. > the unobstructed width of a required *exit* must not diminish in the direction of travel to a road or open space.	Further details to be assessed at Construction Certificate stage	
D1.7: Travel via fire-isolated exits	> A doorway from a room must not open directly into a stairway that is required to be fire-isolated unless it is from – (i) a public corridor, public lobby or the like; or (ii) a *sole-occupancy unit* occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. > D1.7 (b) - 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— (i) to a road or open space; or (ii) to a point—	The stairs to basement level are currently shown as fire isolated and they discharge at ground floor level whereby egress is necessary past the retail frontage. The retail frontage will need to be protected in accordance with BCA Clause C3.4 unless a performance solution is available at Construction Certificate stage due to the stair potentially being considered equivalent to a non-fire isolated stair with fire separating walls.	PS Refer to Part 5.3 of Report

Section D: Access and Egress			
	(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 (iii) into a covered area that— (A) adjoins a road or open space; (B) and is open for at least 1/3 of its perimeter; and (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and (D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m. > D1.7 (c) - 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 C3.4, (iii) 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.		

Section D: Access and Egress			
	> D1.7 (d) If more than 2 access doorways, not from a sanitary compartment or the like open to a required fire-isolated *exit* in the same storey – ○ a smoke lobby in accordance with D2.6 must be provided; or ○ the *exit* must be pressurized in accordance with AS 1668.1:2015		
D1.8: External stairways or ramps in lieu of fire-isolated exits	N/A	N/A	N/A
D1.9: Travel by non-fire-isolated stairways or ramps	> A non-fire-isolated stairway serving as a required *exit* must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. > In a Class 2, 3 or 9a building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than – (i) 15 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or (ii) 30 m from one of 2 such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.	The residential non-fire isolated stair 01 discharges within 15m to a single exit. Stair 02 requires 16.5m travel and will require a performance solution	PS Refer to part 5.3 of Report
D1.10: Discharge from exits	*Exits* must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the *exit*.	The discharge from exits will not be blocked. However, future consideration to be given to seating place at the front of retail tenancies which is difficult to regulate under this clause	CRA – Refer Annexure C

Section D: Access and Egress			
	If a required *exit* leads to open space, the path of travel to the road must have an unobstructed width of not less than 1m. min width of required *exit* if greater. If an *exit* discharges to open space that is at a different level that the public road to which it is connected, the path of travel to the road must be by a ramp or other incline not steeper than 1:8, or a BCA compliant stairway. The discharge points of alternative *exits* must be as far apart as practical		
D1.11: Horizontal exits	*Horizontal exits* must not comprise more than half of the required *exits* from any part of a storey divided by a *fire wall*.	N/A	N/A
D1.12: Non-required stairways, ramps or escalators	An escalator, moving walkway or non-required non fire-isolated stairway or pedestrian ramp— (a) must not be used between storeys in— (i) a patient care area in a Class 9a health-care building; or (ii) a resident use area in a Class 9c building; and (b) may connect any number of storeys if it is— (i) in an open spectator stand or indoor sports stadium; or (ii) in a carpark or an atrium; or (iii) outside a building; or (iv) in a Class 5 or 6 building that is sprinklered throughout, where the escalator, walkway, stairway or ramp complies with Specification D1.12; and (c) except where permitted in (b) must not connect more than—	There are no non-required stairs	N/A

Section D: Access and Egress			
	(i) 3 storeys if each of those storeys is provided with a sprinkler system complying with Specification E1.5 throughout; or (ii) 2 storeys, provided that in each case, those storeys must be consecutive, and one of those storeys is situated at a level at which there is direct egress to a road or open space; and (d) except where permitted in (b) or (c), must not connect, directly or indirectly, more than 2 storeys at any level in a Class 5, 6, 7, 8 or 9 building and those storeys must be consecutive.		
D1.13: Number of persons accommodated	Informational– The number of persons accommodated in a storey, room or mezzanine must be determined within consideration to the purpose for which it is used and the layout of the floor area by– (a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person listed in BCA Table D1.13 according to the use of that part, excluding spaces set aside for— (i) lifts, stairways, ramps and escalators, corridors, hallways, lobbies and the like; and (ii) service ducts and the like, sanitary compartments or other ancillary uses; or (b) reference to the seating capacity in an assembly building or room; or	The following populations have been estimated:- Residential – Not more than 5 persons per unit Basement – Not more than 50 persons The retail tenancies have been calculated based upon 3m^2 /person for staff and patrons: Retail 1 – 2 staff & not more than 17 persons Retail 2 – 4 staff & not more than 32 persons Retail 3 – 6 staff & not more than 40 persons Retail 4 – 2 staff & not more than 18 persons	Noted

Section D: Access and Egress			
	(c) any other suitable means of assessing its capacity. Based on floor area and Table D1.13, the population numbers are as follows:		
D1.14: Measurement of distances	Informational – The nearest part of an *exit* means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a *horizontal exit*, the nearest part of the doorway.	Noted	Noted
D1.15: Method of Measurement	Informational	Noted	Noted
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	Informational – (a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a floor area of not more than 100 m2; or (ii) all but one point of egress from a plant room, a lift machine room or a Class 8 electricity network substation with a floor area of not more than 200 m2. (b) A ladder permitted under (a)—	The roof plant is to be accessed via an access hatch. No fixed ladders. As a roof area this is not considered a room under this clause	N/A

Section D: Access and Egress			
	(i) may form part of an *exit* provided that in the case of a fire-isolated stairway it is contained within the shaft; or (ii) may discharge within a storey in which case it must be considered as forming part of the path of travel; and (iii) for a plant room or a Class 8 electricity network substation, must comply with AS 1657.		
D1.17: Access to lift pits	Access to the lift pit is assumed to be through the bottom landing doors as the pit is assumed to be less than 3m deep.	To form part of BCA Specification	CRA – Refer Annexure C
Part D2 – Construction of Exits			
D2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
D2.1: Application of Part	Informational– Except for D2.13, D2.14(a), D2.16, D2.17(d), D2.17 (e), D2.18 & D2.24, the deemed-to-satisfy Provisions of this Part do not apply to internal parts of the Class 2 *sole-occupancy units.*	Noted	Noted
D2.2: Fire-isolated stairways and ramps	The fire isolated stairways must be constructed of *non-combustible* materials and constructed so that if there is local failure it will not cause structural damage to, or impair the fire-resistance of the shaft.	The stairs are to be concrete.	CRA – Refer Annexure C
D2.3: Non-fire-isolated stairways and ramps	N/A	N/A	N/A
D2.4: Separation of rising and descending stair flights	N/A	N/A	N/A

Section D: Access and Egress			
D2.5: Open access ramps and balconies	N/A	N/A	N/A
D2.6: Smoke lobbies	N/A	N/A	N/A
D2.7: Installations in exits and paths of travel	> Access to service shafts and services other than to fire-fighting or detection equipment must not be provided from a fire-isolated stairway or fire-isolated passageway. > Gas or other fuel services must not be installed in a required *exit*. > Any electricity meters, distribution boards or ducts, or telecommunications distribution boards or equipment installed in corridors/hallways/lobbies or the like must be enclosed with *non-combustible* construction or a fire protective covering with doorways suitably sealed against smoke spread. > Electrical wiring may be installed in a fire-isolated *exit* if the wiring is associated with: ○ a lighting, detection, or pressurization system serving the *exit*; or ○ a security, surveillance or management system serving the *exit*; or ○ an intercommunication system or an audible or visual alarm system in accordance with D2.22; or ○ the monitoring of hydrant or sprinkler isolating valves.	The EDB/Comms are documented to the back of house corridor and would need to be smoke sealed in accordance with this clause. Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
D2.8: Enclosure of space under stairs and ramps	The space under the fire-isolated stairways within the shaft must not be enclosed to form a cupboard or similar enclosed space.	There are currently no storerooms beneath stairs requiring fire rating	N/A

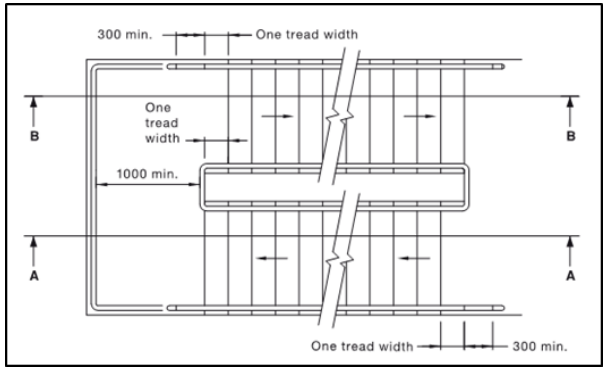
Section D: Access and Egress			
	The space below a required non fire-isolated stairway (including an external stairway) or non-fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless the enclosing walls and ceilings have an FRL of not less than 60/60/60 and the doorway is fitted with a self-closing –/60/30 fire door.		
D2.9: Width of stairways and ramps	Informational– 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	Noted
D2.10: Pedestrian ramps	> A ramp serving as a required *exit* must— (i) where the ramp is also serving as an accessible ramp under Part D3, be in accordance with AS 1428.1:2009; or (ii) in any other case, have a gradient not steeper than 1:8. > The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
D2.11: Fire-isolated passageways	The enclosing construction of a fire isolated passageway must have an FRL not less than that required for the fire isolated stair.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
D2.12: Roof as open space	Roof of basement level 1 to achieve an FRL of 120/120/120 as *exits* discharge onto it.	Further details to be assessed at Construction Certificate stage	CRA – Refer Annexure C
D2.13: Goings and risers	Stairways must comply with the following: > Stairways must have not more than 18 and not less than 2 risers in each flight;	The stairs appear to have not more than 18 risers and designed as per this clause.	CRA – Refer Annexure C

Section D: Access and Egress			
	> Goings must be between 240 mm and 355 mm within the residential units; > Goings must be between 250 mm and 355 mm; > Goings must be between 250 mm and 355 mm in other areas; > Risers must be between 115 mm high and 190 mm high; > The slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700; > The goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (R) are considered constant if the variation between– (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm. > Risers must not contain any openings that would permit a 125 mm sphere to pass through. > Each tread must have a non-slip finish or an adequate non-skid strip near the edge of the nosings; > Treads must be of solid construction (not mesh or perforated) if the stairway is more than 10 m high or connects more than 3 storeys. > Treads must have a surface or nosing strip with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with AS 4586-2013 Slip resistance classification of new pedestrian surface materials.	Further details to be assessed at Construction Certificate stage.	

<table>
<tr><th colspan="4">Section D: Access and Egress</th></tr>
<tr>
<td>D2.14: Landings</td>
<td>Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Condition</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr>
</table>
</td>
<td></td>
<td>CRA – Refer Annexure C</td>
</tr>
<tr>
<td>D2.15: Thresholds</td>
<td>The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless–
(a) in a building required to be accessible, the doorway–
(i) opens to a road or open space; and
(ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1:2009; or
(b) in other cases–
(i) the doorway opens to a road or open space, external stair landing or external balcony; and</td>
<td>There does not appear to be any steps at the doors.
Further details to be assessed at Construction Certificate stage</td>
<td>CRA – Refer Annexure C</td>
</tr>
</table>

Section D: Access and Egress			
	(ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.		
D2.16: Barriers to prevent falls	Balustrades must be provided to stairs and balconies, driveway ramps etc where there is a fall of more than 1m. Balustrades must comply with the following: <u>Balustrade minimum heights</u> > 865 mm above stair nosings; > 865 mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length; and > 1 m in all other locations. <u>Balustrade openings – fire-isolated stairs</u> > maximum openings of 300 mm; or > where rails are used– o a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and o the opening between rails must not be more than 460 mm <u>Balustrade openings – other than fire-isolated stairs</u> > A 125 mm sphere must not be able to pass through any opening and for stairways, the 125 mm is measured above the nosing line of the stair treads. <u>Climbability – other than fire-isolated stairs</u> For floors more than 4m above the surface beneath, the balustrade must not incorporate any horizontal or near	No details of barriers provided at this stage, however the elevations and sections appear to show balustrades in locations as required. Further details to be assessed at Construction Certificate stage.	CRA – Refer Annexure C

Section D: Access and Egress			
	horizontal elements between 150 mm and 760 mm above the floor that could facilitate climbing.		
D2.17: Handrails	Handrails to stairways must: > be located along at least one side of the ramp or flight (a flight being 2 or more risers); and > located along each side if the total width of the stairway or ramp is 2m or more; and > be fixed at a height of not less than 865 mm above the nosings of the stair treads and the floor surface of the ramp, landing, or the like; and > be continuous between stair flight landings and have no obstruction that will break a hand-hold. > be constructed to comply with clause 12 of AS 1428.1:2009 (including handrails to the fire stairs). > Handrails in common areas (other than fire stairs) must also accord with D3.3. <u>Clause 12 of AS 1428.1:2009</u> A required *exit* (fire isolated or non-fire isolated) serving an area required to be accessible must be fitted with handrails in accordance with Clause 12 of AS 1428.1:2009. The handrail shall follow the angle of the nosings and be consistent height through the stair flight and any landings with no vertical sections at the landing. Compliance can be achieved via offset risers at the bottom of the flight in accordance with Figure 28 in AS 1428.1:2009 or with larger landings to accommodate required handrail extensions.	No details of barriers provided at this stage, however the elevations and sections appear to show handrails in locations as required. Further details to be assessed at Construction Certificate stage.	CRA – Refer Annexure C

Section D: Access and Egress			
	 Figure 28 in AS 1428.1:2009		
D2.18: Fixed platforms, walkways stairways and ladders	Plant areas may be accessed via stairs and ladders compliant with AS 1657:2018.	There are currently no plant areas with required fixed handrails.	CRA – Refer Annexure C
D2.19: Doorways and doors	> Sliding doors serving as *exit* doors must be openable manually under a force of not more than 110N. > *Exit* doors that are power operated must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source and if leading to road or open space, open automatically if there is a power failure or on the activation of a fire or smoke alarm anywhere in the *fire compartment* served by the door. > A power operated door in a path of travel to a required *exit* must be able to be opened manually under a force of not more than 110 N if there is a malfunction of the power source.	All doors are shown as swing doors at this stage.	CRA – Refer Annexure C

Section D: Access and Egress			
D2.20: Swinging doors	Swinging doors in a required *exit* must not encroach– (i) at any part of its swing by more than 500 mm on the required 1m width of the *exit* and (ii) when fully open, by more than 100 mm on the required 1m *exit* width; and the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door. A swinging door in a required *exit* must swing in the direction of egress unless– > 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 > it serves a sanitary compartment or airlock (in which case it may swing in either direction).	All doors to areas greater than 200m2 are shown to swing outwards as required.	Complies
D2.21: Operation of latch	All doors in a required *exit* or forming part of a required *exit* AND doors in a path of travel to a required *exit* must be readily openable without a key from the side that faces a person seeking egress, by– (iii) a single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – (A) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and (B) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not	No details of hardware provided at this stage. Further details to be assessed at Construction Certificate stage.	CRA – Refer Annexure C

Section D: Access and Egress			
	less than 35mm and not more than 45mm; or (iv) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor. (v) where the latch operation device referred to in (ii) is not located on the door leaf itself— (A) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located— (aa) not less than 500 mm from an internal corner; and (bb) for a hinged door, between 1 m and 2 m from the door leaf in any position; and (cc) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position. (B) braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. The above requirements do not apply to a door that – (i) serves only or is within a *sole-occupancy unit* in a Class 2 building; or (ii) serves a *sole-occupancy unit* in a Class 5, 6, 7 or 8 building with a floor area not more than 200m2; or (iii) are fitted with a fail-safe device which automatically unlocks the door upon the		

Section D: Access and Egress			
	activation of an AS 1670.1 detection system installed throughout the building.		
D2.22: Re-entry from fire-isolated exits	N/A	N/A	N/A
D2.23: Signs on doors	Signage in accordance with this clause is to be located on all fire and smoke doors stating “Fire Safety Door, Do Not Obstruct, Do Not Keep Open” and the discharge door from the fire isolated stairways are to state “Fire Safety Door – Do Not Obstruct” in capital letters not less than 20mm in height. Note: Fire signage in accordance with clause 183 of the Environmental Planning and Assessment Regulation 2000 is also required.	Signs to be installed to basement fire stair doors and the final discharge doors	CRA – Refer Annexure C
D2.24: Protection of openable windows	(a) Bedroom windows must be provided with protection if the floor below the window is 2m or more above the surface beneath. (b) Where the lowest level of the window opening is less than 1.7m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with– (A) a device to restrict the window opening; or (B) a screen with secure fittings. (ii) A device or screen required by (i) must– (A) not permit a 125 mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the–	No details of windows provided at this stage. Further details to be assessed at Construction Certificate stage.	CRA – Refer Annexure C

Section D: Access and Egress			
	(aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (c) A barrier with a height not less than 865 mm above the floor is required to an openable window– (i) in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and (ii) where the floor below the window is 4m or more above the surface beneath if the window is not covered by (a). (d) A barrier covered by (c) except for (e) must not– (i) permit a 125 mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. (e) A barrier required by (c) to an openable window in— (i) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and **Note:** when considering the preferred option to comply with this clause consideration will need to be given to natural ventilation required under Clause F4.6.		

Section D: Access and Egress			
D2.25: Timber stairways: concession	N/A	N/A	N/A
Part D3 – Access for People with A Disability			
D3.0: Deemed-to-Satisfy Provisions	To be assessed within separate access report	Noted	Noted

Section E: Services and Equipment			
Part E1 – Fire Fighting Equipment			
E1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E1.3: Fire hydrants	As the building has a floor area greater than 500 m2, a fire hydrant system complying with AS 2419.1:2005 must be provided to serve the building. Details should be provided showing: > Hydrant booster assembly location. The booster location must comply with the following: o be within 8m of a hardstand for fire brigade appliance; o be within sight of the main entry; > Hydrant pump room location (if a pumpset is required). An internal pump room must have a door opening to a road or open space or egress to open space via a fire-isolated *exit*; > Internal hydrants in each fire-isolated *exit* at each storey providing coverage to all parts of the building. For internal fire hydrant coverage, all points on the floor must be covered by a 10m hose stream,	The building will require a fire hydrant system with hydrants within the basement fire stairs and within 4m of the stair at each residential level. Due to sprinkler requirements it may now be possible to have a dry hydrant booster. Further details to be assessed at Construction Certificate stage.	CRA – Refer Annexure C

Section E: Services and Equipment			
	issuing from 30 m hose length, extending not less than 1m into the room.		
E1.4: Fire hose reels	A fire hose reel system complying with BCA clause E1.4 and AS 2441:2005 must be provided to the building (excluding Classes 2, 3, 4, 5, 8 and 9c). All points on a floor shall be within reach of a 4 m hose stream issuing from a nozzle at the end of the hose laid on floor. The hose length shall not exceed 36 m. Fire hose reels must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors, except— (ii) doorways in walls referred to in C2.5(a)(v) in a Class 9a building and C2.5(b)(iv) in a Class 9c building, separating ancillary use areas of high potential fire hazard; and (iii) doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (iv) doorway openings to shafts referred to in C3.13.	Fire hose reels to be shown to basement level within 4m of fire stair doors and at grounds floor level to serve retail tenancies. Further details to be assessed at Construction Certificate stage.	CRA – Refer Annexure C
E1.5: Sprinklers	The building must be provided with a sprinkler system complying with Table E1.5 and Specification E1.5 installed throughout. The sprinkler valve room location should be indicated on the plans. The room must have direct egress to road or open space	As the building contains four or more storeys then the entire building is required to be protected with a sprinkler system. It is understood that the sprinkler system proposed will need to be an AS2118.1-2017 system so that this addresses spandrel separation requirements of BCA Clause C2.6.	CRA – Refer Annexure A
E1.6: Portable fire extinguishers	Portable fire extinguishers must be provided in accordance with clause E1.6 & Table E1.6 of the BCA and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444:2001.	Portable fire extinguishers to be shown at each level.	CRA – Refer Annexure C

Section E: Services and Equipment				
		For the Class 2 parts, portable fire extinguishers must be– (i) an ABE type fire extinguisher; and (ii) a minimum size of 2.5 kg; and (iii) distributed outside a *sole-occupancy unit*— (A) to serve only the storey at which they are located; and (B) so that the travel distance from the entrance doorway of any *sole-occupancy unit* to the nearest fire extinguisher is not more than 10 m.		
E1.8:	Fire control centres	N/A	N/A	N/A
E1.9:	Fire precautions during construction	Informational– > During construction, not less than one portable 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 / temporary *exit*; and > After the building has reach an *effective height* of 12m, the required fire hydrants and fire hose reels must be operational on all floor / roof covered storeys, except for the 2 uppermost storeys; and all required booster connections must be installed.	Noted	Noted
E1.10:	Provision for special hazards	N/A	N/A	N/A
Specification E1.5 – Fire Sprinkler Systems				
1.	Scope	Informational	Noted	Noted

Section E: Services and Equipment				
2.	Application of automatic fire sprinkler standards	An automatic fire sprinkler system shall comply with AS2118 as relevant to the building classification and the design of the hydraulic consultant. Where the building is residential class 2 or 3 then refer to Specification E1.5a for specific design requirements and concessions.	As a residential class 2 building the sprinkler system will need to comply with Spec E1.5a	CRA – Refer Annexure C
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 a wall or floor which must – (a) comply with any specific requirement of the Deemed-to-Satisfy Provisions of the BCA; or (b) where there is no specific requirement, comply with the relevant part of AS 2118, FPAA101D or FPAA101H.	N/A – as all parts to be sprinkler protected	N/A
4.	Protection of openings	Any openings, including those for service penetrations, in construction separating sprinklered and non-sprinklered parts of a building, including the construction separating the areas nominated for omitted protection in AS 2118.1:2017, must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C3.	All penetrations to fire walls to comply with BCA Clause C3.15.	CRA – Refer Annexure C
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.	Fast response heads not required unless needed by the performance solutions	CRA – Refer Annexure C
6.	Sprinkler valve enclosures	(a) Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or open space. (b) All sprinkler valve rooms and enclosures must be secured with a system suitable for use by the fire brigade.	No details of sprinkler valves provided at this stage. Further details to be assessed at Construction Certificate stage.	CRA – Refer Annexure C

Section E: Services and Equipment			
7. Water supply	(a) A required sprinkler system must be provided with at least one water supply. (b) A required sprinkler system in a building greater than 25 m in effective height must be provided with dual water supply except that a secondary water supply storage capacity of 25,000 litres may be used if – (i) the storage tank is located at the topmost storey of the building; and (ii) the building occupancy is classified as no more hazardous than Ordinary Hazard 2 (OH2) under AS 2118.1:2017; and (iii) an operational fire brigade service is available to attend a building fire.	Water supply to comply with the chosen sprinkler system design	CRA – Refer Annexure C
8. Building occupant warning system	A required sprinkler system, except a FPAA101D sprinkler system, must be connected to and activate a building occupant warning system complying with Clause 7 of Specification E2.2a.	A building occupant warning system is required in accordance with Clause 7 of Spec E2.2a	CRA – Refer Annexure C
9. Connection to Other Systems	Where a smoke hazard management system is installed and is actuated by smoke detectors, the sprinkler system must, wherever practicable, be arranged to also activate the smoke hazard management system.	A flow switch to be connected back the FDCIE	CRA – Refer Annexure C
10. Anti-tamper Devices	(a) 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	Antitamper devices to be installed	CRA – Refer Annexure C

Section E: Services and Equipment				
		valves provided to control sprinklers in these spaces must be located adjacent to the space. (b) Any valves provided to control sprinklers required by (a) must be fitted with anti-tamper monitoring devices connected to a monitoring panel.		
11.	Sprinkler Systems in Carparks	A sprinkler system protecting a carpark complying with Table 3.9 of Specification C1.1 in a multi-classified building must – (a) be independent of the sprinkler system protecting any part of the building not used as a carpark; or (b) if forming part of a sprinkler system protecting a part of the building not used as a carpark, be designed such that the section protecting the non-carpark part can be isolated without interrupting the water supply or otherwise affecting the effective operation of the section protecting the carpark.	The carpark sprinkler system to be separate to other levels	CRA – Refer Annexure C
12.	Residential Care Buildings	N/A	N/A	N/A
13.	Sprinkler systems in lift installations	(a) Where sprinklers are installed in a space housing lift electrical and control equipment, including machine rooms, secondary floors and sheave rooms, sprinklers in these spaces must – (i) have heads protected from accidental damage by way of a guard that will not impair the performance of the head; and (ii) be capable of being isolated and drained, either separately or collectively, without isolating any other sprinklers within the building.	Sprinkler to be provided to top and bottom of lift shaft	CRA – Refer Annexure C

Section E: Services and Equipment			
	(b) Valves provided to control sprinklers referred to in (a) must be installed in accordance with Clause 10(b).		
Specification E1.5a – Class 2 and 3 Buildings Not More Than 25m In Effective Height			
1. Scope and application	This specification sets out the design options and installation requirements for sprinklers in a class 2 or 3 residential building four or more storeys.	The building is four storeys so this clause applies	Noted
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 2118.1:2017; or (ii) AS 2118.4:2012, as applicable; or (iii) FPAA101D, except for residential care buildings; or (iv) FPAA101H, except for residential care buildings	Due to requirement for spandrel separation it is necessary for an AS2118.1 system to be installed. Further details to be assessed at Construction Certificate stage.	CRA – Refer Annexure C
3. Permitted concessions	AS 2118.1:2017 system concession: (i) The FRL for self-closing fire doors, as required by C3.8 and C3.11, may be reduced to not less than -/30/30. (ii) The FRL for— (A) all non-loadbearing internal walls and shafts constructed of fire-protected timber, as required by Specification C1.1 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	Should an AS2118.1 sprinkler system be installed there are some construction concessions that could be utilised. The main concession relates to exit travel distance and permitted use of a dry hydrant. Further details to be assessed at Construction Certificate stage.	CRA – Refer Annexure C

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	C3.15, may be reduced to not less than -/60/15; and (B) all other non-loadbearing internal walls, as required by Specification C1.1, may be reduced to -/45/45 and the FRL for service penetrations through internal non-loadbearing walls and shafts, as required by C3.15, may be reduced to -/45/15. (iii) The FRL for fire-isolated stairways enclosed with non-loadbearing construction, as required by D1.3, may be reduced to -/45/45. (iv) Except in a residential care building, the maximum distance of travel, as required by D1.4(a)(i)(A), may be increased from 6 m to 12 m. (v) The maximum distance of travel from a single *exit* serving the storey at the level of egress to a road or open space, as required by D1.4(a)(i)(B), may be increased from 20 m to 30 m. (vi) The maximum distance between alternative *exits*, as required by D1.5(c)(i), may be increased from 45 m to 60 m. (vii) Internal fire hydrants in accordance with E1.3 are not required where— (A) the building is served by external fire hydrants that provide compliant coverage installed in accordance with E1.3, except that in a residential care building the nozzle at the end of the length of hose need only reach the entry door of any *sole-occupancy unit* to be considered as covering the area within the sole occupancy unit; or		

Section E: Services and Equipment			
	(B) a dry fire hydrant system that otherwise complies with AS 2419.1 is installed in the building and— (aa) each fire hydrant head is located in accordance with E1.3 and fitted with a blank end cap or plug; and (bb) the pipework is installed in accordance with E1.3 (as for a required fire main) except that it need not be connected to a water supply; and (cc) a hydrant booster inlet connection is provided in accordance with E1.3; and (dd) an external street or feed hydrant capable of providing the required system flow is located within 60 m of the hydrant booster connection. (viii) An emergency warning and intercom system need not be provided in a residential care building in accordance with E4.9 if a warning system with an override public address facility is installed in accordance with Specification E2.2d.		
Part E2 – Smoke Hazard Management			
E2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E2.1: Application of Part	Informational	Noted	Noted

Section E: Services and Equipment				
E2.2:	General requirements (including Tables E2.2a and E2.2b)	**General smoke hazard management requirements** An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b 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* (such as lobby air supply) must— (i) be designed and installed to operate as a smoke control system in accordance with AS 1668.1:2015; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the *fire compartments* served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1668.1:2015; and for the purposes of this provision, each *sole-occupancy unit* in a Class 2 or 3 building is treated as a separate *fire compartment*. Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1:2015 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS1668.1:2015 systems that are provided for	**Class 2 parts** Class 2 parts must be provided with an automatic smoke detection and alarm system complying with BCA Specification E2.2a. Note: Multiple smoke alarms in sole occupancy units are now required to be interconnected. **Commercial/Retail** The commercial retail tenancies are not directly required to be provided with smoke hazard management in accordance with this clause as that 'part' of the building does not have a rise in storeys of more than 2. However, the smoke hazard management requirements for the class 2 building part will require smoke detection to the commercial retail spaces as per Spec E2.2 Clause 5 **Carpark** As the building is sprinkler protected, the sprinkler system will activate the ventilation system in accordance with Clause 5.5 of AS1668.1-2015.	CRA – Refer Annexure C

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		zone pressurisation and automatic air pressurisation for fire-isolated *exits*. **Class 2 parts** Class 2 parts must be provided with an automatic smoke detection and alarm system complying with BCA Specification E2.2a. Note: Smoke alarms in sole occupancy units are now required to be interconnected. **Class 7a buildings** A Class 7a building including a basement provided with a mechanical ventilation system in accordance with AS 1668.2:2012 must comply with clause 5.5 of AS 1668.1:2015 except that fans with metal blades for operation at normal temperatures may be used, and the electrical power and control cabling need not be fire rated.		
E2.3:	Provisions for special hazards	N/A	N/A	N/A
Specification E2.2a – Smoke Detection and Alarm System				
1.	Scope	Informational	Noted	Noted
2.	Type of system	Informational	A combined clause 3 & 4 system is recommended. See Clause 5 for system requirements	Noted
3.	Smoke alarm system	Smoke alarms to be installed within sole occupancy units in accordance with AS3786	See Clause 5	Noted
4.	Smoke detection system	Smoke detection and alarm system to be installed in accordance with BCA and AS1670.1-2018	See Clause 5	Noted

Section E: Services and Equipment				
5.	Combined smoke alarm and smoke detection system	Smoke alarms may be installed within sole occupancy units in accordance with AS3786 and to common areas a smoke detection and alarm system may be installed in accordance with BCA and AS1670.1-2018. Except that for Class 2 buildings, where a sprinkler system is installed then smoke detectors are not required to public corridors and other internal public spaces	AS3786 Smoke alarms to be provided within the residential units. Due to the sprinkler system installed throughout the building there is no requirement for smoke detectors to be installed in the common areas of the residential portion. The retail tenancies are not considered to be "public corridors or internal public spaces" therefore, smoke detectors will need to be provided to retail/.commercial spaces in addition to the sprinkler system	CRA – Refer Annexure C
6.	Smoke detection for smoke control system	N/A	N/A	N/A
7.	Building occupant warning system	A building occupant warning system is required to be installed. In a Class 2 building that is sprinkler protected it will be necessary for both the sprinkler system and common area smoke detection system to activate the building occupant warning system.	The common area smoke detectors and sprinkler system is required to activate the common area building occupant warning system. Sounders will need to provide 100dBa at the door or 75dBa at the bedhead of residential sole occupancy units. Retail tenancies only need 65dBa.	CRA – Refer Annexure C
8.	System Monitoring	Specific classifications of building require system monitoring	N/A – System monitoring is not required in accordance with this clause. This is otherwise a sprinkler standard requirement.	N/A
Part E3 – Lift Installations				
E3.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E3.1:	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1	No details at this stage. Lift consultant to certify at Construction Certificate stage	CRA – Refer Annexure C

Section E: Services and Equipment			
E3.2: Stretcher facility in lifts	A stretcher facility must be provided to an emergency lift required by E3.4. A stretcher facility must be provided to passenger lifts installed to serve any storey above an *effective height* of 12 m. A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above floor level.	The building does not serve an effective height of above 12 metres and therefore, does not need a stretcher facility. The lift cars appear to be 1400x1600mm and would meet the Clause E3.6 requirements for accessibility	N/A
E3.3: Warning against use of lifts in fire	Warning signs indicating “DO NOT USE LIFTS IF THERE IS A FIRE” shall be displayed near every call button for a passenger lift or group of lifts throughout a building as per E3.3.	No details at this stage. Lift consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
E3.4: Emergency lifts	N/A	N/A	N/A
E3.5: Landings	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D.	The landings at each level have 1540 x 2070mm turning space as required	Complies
E3.6: Passenger lifts	In an accessible building, every passenger lift must be one of the types specified in Table E3.6a, have accessible features in accordance with Table E3.6b, and not rely on a constant pressure device for its operation if the lift car is fully enclosed.	No details at this stage. Except that the lift car has 1400x1600mmlift car size which meets the requirements of this clause. Lift consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
E3.7: Fire service controls	The lifts serving any storey above an *effective height* of 12 m must be provided with: (a) A fire service recall control switch complying with E3.9 for— (i) a group of lifts; or	N/A	N/A

Section E: Services and Equipment				
		(ii) a single lift not in a group that serves the storey. (b) A lift car fire service drive control switch complying with E3.10 for every lift.		
E3.8:	Aged care buildings	N/A	N/A	N/A
E3.9:	Fire service recall switch	N/A	N/A	N/A
E3.10:	Lift car service drive control switch	N/A	N/A	N/A
Specification E3.1 – Lift Installations				
1.	Scope	Informational	Noted	Noted
2.	Lift cars exposed	N/A	N/A	N/A
3.	Lift car emergency lighting	A lift car must have an emergency lighting system designed – (a) to come on automatically upon failure of the normal light supply; and (b) to provide at least 20 lux of lighting for 2 hours on the alarm initiation button.	No details at this stage. Lift consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
4.	Cooling of lift shaft	While a lift in a lift shaft is in service, the cooling of the lift shaft must – (a) ensure that the dry bulb air temperature in the lift shaft does not exceed 40°C; and (b) if the cooling is by a ventilation system, be provided with an air changed rate determined using a temperature rise of no more than 5 K.	No details at this stage. Lift consultant to certify at Construction Certificate stage	CRA – Refer Annexure C

Section E: Services and Equipment				
5.	Lift foyer access	Where there is a security foyer in a building, access may be via locked security doors provided – (a) security doors revert to the unlocked state in the event of – (i) power failure; or (ii) fire alarm; and (b) locked foyer areas are monitored by closed circuit television and intercom system to a 24-hour staffed location.	The foyer has doors which will require lever action hardware in accordance with BCA Clause D2.21	Complies
6.	Emergency access doors in a single enclosed lift shaft	N/A	N/A	N/A
Part E4 – Visibility In An Emergency, Exit Signs And Warning Systems				
E4.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E4.2:	Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with Clause E4.2 of the BCA and AS/NZS 2293.1:2018.	No details at this stage. Electrical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
E4.3:	Measurement of distance	Informational	Noted	Noted
E4.4:	Design and operation of emergency lighting	The emergency lighting system must comply with AS/NZS 2293.1:2018.	No details at this stage. Electrical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
E4.5:	Exit signs	*Exits* signs are to be provided above or adjacent to a door providing egress as well as directional signage throughout the entire development where necessary.	No details at this stage. Electrical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C

Section E: Services and Equipment			
E4.6: Direction signs	Where an *exit* is not readily apparent, directional signage is to be installed indicating the direction of egress.	No details at this stage. Electrical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
E4.7: Class 2 and 3 buildings and Class 4 Parts: Exemptions	Informational	Non-illuminated signs may be utilised to final exit door	Noted
E4.8: Design and operation of exit signs	*Exit* signs must comply with AS/NZS 2293.1:2018 and be clearly visible at all times when the building is occupied.	No details at this stage. Electrical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
E4.9: Emergency warning and intercom systems	An Emergency warning and intercom system complying where applicable with AS 1670.4:2018 must be installed within the building.	N/A	N/A

Section F: Health and Amenity			
Part F1 – Damp and Weatherproofing			
F1.0: Deemed-to-Satisfy Provisions	*Performance Requirement* FP1.4, for the prevention of the penetration of water through external walls, must be complied with. There are no Deemed-to-Satisfy Provisions for this *Performance Requirement* in respect of external walls. The assessment contained within this report does not include an assessment against Performance Provision FP1.4.	Depending upon the proposed external wall construction method, the balcony step down and wall build up the architect and/or façade engineer to provide a performance solution at Construction Certificate stage	PS Required
F1.1: Stormwater drainage	Stormwater drainage to comply with AS/NZS 3500.3:2018.	No details at this stage. Hydraulic consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
F1.4: External above ground membranes	Waterproofing membranes for external above ground use to comply with AS 4654 Parts 1 and 2:2012.	No details at this stage. Design to be firmed up at Construction Certificate stage include balcony step down/hob details,.	CRA – Refer Annexure C

Section F: Health and Amenity			
		All floor waste drains to balcony located far away from doorways will require deeper tile bed. This will require deeper step down to ensure compliance with AS4654.2	
F1.5: Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	No details at this stage. Design to be firmed up at Construction Certificate stage	CRA – Refer Annexure C
F1.6: Sarking	*Sarking-type materials* used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2:2017.	No details at this stage. Design to be firmed up at Construction Certificate stage	CRA – Refer Annexure C
F1.7: Water proofing of wet areas in buildings	Wet areas must be constructed in accordance with AS 3740:2010 and F1.7 of the BCA.	No details at this stage. Design to be firmed up at Construction Certificate stage	CRA – Refer Annexure C
F1.9: Damp-proofing	Moisture is to be prevented from reaching the walls above a damp-proof course, and the underside of the suspended floors.	No details at this stage. Design to be firmed up at Construction Certificate stage	CRA – Refer Annexure C
F1.10: Damp-proofing of floors on the ground	If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870:2011 (N/A to areas that do not require weatherproofing – refer specific clause exemptions).	No details at this stage. Design to be firmed up at Construction Certificate stage	CRA – Refer Annexure C
F1.11: Provision of floor wastes	In Class 2 building, a bathroom or laundry is to have a floor waste where the floor is graded to the floor waste to permit the drainage of water.	No details at this stage. Design to be firmed up at Construction Certificate stage	CRA – Refer Annexure C
F1.12: Sub-floor ventilation	N/A	N/A	N/A
F1.13: Glazed Assemblies	Glazed assemblies are to comply with AS 2047:2014 and AS 1288:2006.		CRA – Refer Annexure C
Part F2 – Sanitary and Other Facilities			

Section F: Health and Amenity				
F2.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F2.1:	Facilities in residential buildings (including Table F2.1)	Each SOU must be provided with sanitary facilities; a kitchen sink; facility for the preparation and cooking of food; a bath or shower; a closet pan; wash basin; laundry wash tub and space for a washing machine and dryer.	Each apartment appears to have a bathroom, laundry and kitchen. No details at this stage of washing machine and dryer.	CRA – Refer Annexure C
F2.2:	Calculation of number of occupants and facilities	Informational – (a) The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means (b) Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females (c) In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility required for people with a disability may be counted once for each sex (d) For the purpose of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels	For information	Noted
F2.3:	Facilities in Class 3 to 9 buildings (including Table F2.3)	(a) Except where permitted by (b), (c), (f), F2.4(a) and F2.4(b), separate sanitary facilities for males and females must be provided for Class 3, 5, 6, 7, 8 or 9 buildings in accordance with Table F2.3. (b) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (c) If the majority of employees are one sex, not more than 2 employees of the other sex may share toilet facilities if the facilities are separated by	Each retail tenancy is provided with a single unisex WC which is permitted in accordance with this clause as there are no more than 10x staff per tenancy. As a base building design there is no allowance for sanitary facilities for patrons as the retail shops may never become café/restaurant type uses. Should this occur with future approval for first use then additional sanitary facilities will be needed at that time. As per accessible requirements of Clause F2.4 it is recommended that the retail WC's are ambulant disabled	Complies

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		means of walls, partitions and doors to afford privacy. (d) Employees and the public may share the same facilities in a Class 6 and 9b building (other than a school or early childhood centre) provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. (e) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females.	as per AS1428.1-2009. See separate access report for non-compliances with bathrooms.	
F2.4:	Accessible sanitary facilities (including Table F2.4)	Accessible bathroom is required to serve the ground floor level retail tenancies.	N/A – To be assessed in separate access report	N/A
F2.5:	Construction of sanitary compartments	(a) Sanitary compartments must have doors and partitions that separate adjacent compartments and extend— (i) from floor level to the ceiling in the case of a unisex facility; or (ii) to a height of not less than 1.5 m above the floor if primary school children are the principal users; or (iii) 1.8 m above the floor in all other cases. (b) The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F2.5, between the	No details at this stage. Design to be firmed up at Construction Certificate stage	CRA – Refer Annexure C

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	closet pan within the sanitary compartment and the doorway.		
F2.6: Interpretation: urinals and washbasins	Informational– (a) A urinal may be— (i) an individual stall or wall-hung urinal; or (ii) each 600 mm length of a continuous urinal trough; or (iii) a closet pan used in place of a urinal. (b) A washbasin may be— (i) an individual basin; or (ii) a part of a hand washing trough served by a single water tap.	There are no urinals. And washbasins are individual	Complies
F2.8: Waste Management	N/A	N/A	N/A
F2.9: Accessible adult change facilities	N/A	N/A	N/A
Part F3 – Room Sizes			
F3.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F3.1: Height of rooms and other spaces	(a) The height of rooms and other spaces must be not less than— (b) in a Class 2 part of a building— (i) a kitchen, laundry, or the like — 2.1 m; and (ii) a corridor, passageway or the like — 2.1 m; and	Based upon the section drawings provided the ceiling height are at least 2100mm to bathrooms and 2400mm to habitable rooms as required. Design to be firmed up at Construction Certificate stage	CRA – Refer Annexure C

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	(iii) a habitable room excluding a kitchen — 2.4 m; and (iv) in a room or space with a sloping ceiling or projections below the ceiling line (v) within— (A) a habitable room— (aa) in an attic — a height of not less than 2.2 m for not less than two thirds of the floor area of the room or space; and (bb) in other rooms — a height of not less than 2.4 m for not less than two thirds of the floor area of the room or space; and (c) in a Class 5, 6, 7 building— (i) except as allowed in (ii) and (f) — 2.4 m; and (ii) a corridor, passageway, or the like — 2.1 m; and (iii) a corridor— (A) that serves an assembly building or part that accommodates not more than 100 persons — 2.4 m; or (iv) the number of persons accommodated must be calculated according to D1.13; and (d) in any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and (ii) a commercial kitchen — 2.4 m; and		

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		(iii) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like. (iv) A required accessible adult change facility – 2.4m		
Part F4 – Light and Ventilation				
F4.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F4.1:	Provision of natural light	Natural light must be provided to all habitable rooms.	Natural light is available to all habitable rooms	Complies
F4.2:	Methods and extent of natural lighting	(a) Natural light must be provided by: (i) Windows: (A) with an aggregate light transmitting area of not less than 10% the floor area of the room; and (B) that are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii) Rooflights, that: (A) have an aggregate light transmitting area of not less than 3% the floor area of the room; or (iii) a proportional combination of windows and roof lights required by (i) and (ii). (b) A required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must be not less than a horizontal distance from that boundary or wall that is the greater of –	All windows to habitable rooms have access to direct natural light as required. And it would appear that from the elevation drawings that the window dimensions will allow for 10% opening to that of the floor area of each room However, some study rooms are located nearby entrance doorways to residential sole occupancy units and are to rely upon borrowed light from the adjacent living area.	CRA – Refer Annexure C

Section F: Health and Amenity			
	(c) 1m; and (d) 50% of the square root of the exterior height of the wall in which the window is located, measured from its sill.		
F4.3: Natural light borrowed from adjoining room	Rooms within direct natural light may rely upon borrowed natural light from adjoining rooms	Some study rooms are located nearby entrance doorways to residential sole occupancy units and are to rely upon borrowed light from the adjacent living area via a small corridor. The living rooms have large glazed doors which provide more than 10% natural light for the combined floor area of the rooms. Subject to further design development it may be necessary for a performance solution as study rooms have a sliding door and may prevent access to borrowed light.	CRA – Refer Annexure C
F4.4: Artificial Lighting	Lighting to all areas is to comply with AS/NZS 1680.0:2009.	No details of lighting at this stage. Electrical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
F4.5: Ventilation of rooms	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2:2012.	No details of ventilation at this stage. Mechanical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
F4.6: Natural ventilation	(a) Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened— (i) with an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated; and (ii) open to— (A) a suitably sized court, or space open to the sky; or	All windows to habitable rooms have access to direct natural ventilation as required. And it would appear that from the elevation drawings that the window dimensions will allow for 5% opening to that of the floor area of each room However, some study rooms are located nearby entrance doorways to residential sole occupancy units and are to rely upon borrowed ventilation from the adjacent living area.	CRA – Refer Annexure C

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	(B) an open verandah, carport, or the like; or (C) an adjoining room in accordance with F4.7.		
F4.7: Ventilation borrowed from adjoining room	Ventilation may be 'borrowed' from adjoining rooms in some instances in accordance with this clause.	Some study rooms are located nearby entrance doorways to residential sole occupancy units and are to rely upon borrowed ventilation from the adjacent living area via a small corridor. The living rooms have large glazed doors which provide more than 5% natural ventilation for the combined floor area of the rooms. Subject to further design development it may be necessary for a performance solution as study rooms have a sliding door and may limit access to borrowed ventilation.	CRA – Refer Annexure C
F4.8: Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a – > kitchen or pantry > public dining room or restaurant > dormitory in a Class 3 building > room used for public assembly (which is not an early childhood centre, primary school or open spectator stand) > workplace normally occupied by more than one person.	The bathrooms do not open directly to kitchens or workspaces without an airlock	Complies
F4.9: Airlocks	If sanitary compartments are prohibited from opening directly to another room: Class 2 residential apartments	The residential bathrooms do not open to kitchens. The access to the retail bathrooms is via an airlock	Complies

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	> access must be by an airlock, hallway or other room; or > the sanitary compartments must be provided with mechanical exhaust ventilation. Class 6 retail > access must be by an airlock, hallway or other room with a floor area of not less than 1.1m2 and fitted with self-closing doors at all access doorways; or > the sanitary compartments must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.		
F4.11: Carparks	Every storey of a carpark (except an open deck carpark) must have: > a system of mechanical ventilation complying with AS 1668.2:2012	No details at this stage. Mechanical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
F4.12: Kitchen local exhaust ventilation	Any commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1:2015 and AS 1668.2:2012 where: > any cooking apparatus has: o a total maximum electrical power input exceeding 8 kW; or o a total gas power input exceeding 29 MJ/h; or > the total maximum power input to more than one apparatus exceeds: o 0.5 kW electrical power; or o 1.8 MJ gas, Per m2 of floor area of the room or enclosure.	No details at this stage. Mechanical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C

Section F: Health and Amenity			
Part F5 – Sound Transmission and Insulation			
F5.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F5.1: Application of Part	Informational– The Deemed-to-Satisfy Provisions of this Part apply to Class 2 and 3 buildings and Class 9c buildings.	Noted	Noted
F5.2: Determination of airborne sound insulation ratings	A form of construction required to have an airborne sound insulation rating must— (a) have the required value for weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation term (R_w + Ctr) determined in accordance with AS/NZS ISO 717.1 using results from laboratory measurements; or (b) comply with Specification F5.2.	No details at this stage. Form of construction to address sound insulation rating to be addressed at Construction Certificate stage	CRA – Refer Annexure C
F5.3: Determination of impact sound insulation ratings	(a) A floor in a building required to have an impact sound insulation rating must— (i) have the required value for weighted normalised impact sound pressure level with spectrum adaptation term ($L_{n,w}$ + CI) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or (ii) comply with Specification F5.2. (b) A wall in a building required to have an impact sound insulation rating must be of discontinuous construction; and	No details at this stage. Form of construction to address sound insulation rating to be addressed at Construction Certificate stage	CRA – Refer Annexure C

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	(c) For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and (i) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and (ii) for other than masonry, there is no mechanical linkage between leaves except at the periphery.		
F5.4: Sound insulation rating of floors	A floor in a Class 2 building must achieve an $R_w + C_{tr}$ (airborne) not less than 50, and an $L_{n,w}+C_I$ (impact) not more than 62, if separating: > SOU's; or > An SOU from a plant room, lift shaft, public corridor, public lobby or parts of a different classification.	No details at this stage. Form of construction to address sound insulation rating to be addressed at Construction Certificate stage	CRA – Refer Annexure C
F5.5: Sound insulation rating of walls	(a) A wall in a Class 2 building must: (i) have an $R_w + C_{tr}$ (airborne) not less than 50 if it separates *sole-occupancy units*; and (ii) have an R_w (airborne) not less than 50 if it separates a sole occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and (iii) be of discontinuous construction in accordance with F5.3(b) if it separates: (A) a bathroom, sanitary compartment, laundry or kitchen in one *sole-occupancy unit* from a habitable room (other than a kitchen) in an adjoining unit; or	No details at this stage. Form of construction to address sound insulation rating to be addressed at Construction Certificate stage	CRA – Refer Annexure C

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	(B) a *sole-occupancy unit* from a plant room or lift shaft. (b) Where a wall required to have sound insulation has a floor above, the wall must continue to: (i) the underside of the floor above; or (ii) a ceiling that provides the sound insulation required for the wall. (c) Where a wall required to have sound insulation has a roof above, the wall must continue to: (i) the underside of the roof above; or (ii) a ceiling that provides the sound insulation required for the wall. (d) Doorways in walls separating the Class 2 *sole-occupancy units* from a stairway, public corridor, public lobby or the like must be provided with a door assembly that has an R_w not less than 30.		
F5.6: Sound insulation rating of services	(a) If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one *sole-occupancy unit*, the duct or pipe must be separated from the rooms of any sole occupancy unit by construction with an $R_w + C_{tr}$ (airborne) not less than— (i) 40 if the adjacent room is a habitable room (other than a kitchen); or (ii) 25 if the adjacent room is a kitchen or non-habitable room. (b) If a storm water pipe passes through a *sole-occupancy unit* it must be separated in accordance with (a)(i) and (ii).	No details at this stage. Form of construction to address sound insulation rating to be addressed at Construction Certificate stage	CRA – Refer Annexure C

Section F: Health and Amenity				
F5.7:	Sound isolation of pumps	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating pump.	No details at this stage. Form of construction to address sound insulation rating to be addressed at Construction Certificate stage	CRA – Refer Annexure C
Part F6 – Condensation Management				
F6.0:	Deemed-to-satisfy provisions	Informational	Noted	Noted
F6.1:	Application of Part	Informational	Noted	Noted
F6.2	Pliable building membrane	Where a pliable building membrane is installed in an external wall it shall comply with AS/NZS 4200.1:2017 and installed in accordance with AS 4200.2:2017.	No details at this stage. A sarking membrane is required to the external wall to the external side of the primary insulation layer which is likely to be within the wall cavity. To be further assessed with design development.	CRA – Refer Annexure C
F6.3:	Flow rate and discharge of exhaust systems	(a) An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— (i) 25 L/s for a bathroom or sanitary compartment; and (ii) 40 L/s for a kitchen or laundry. (b) Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air. (c) Exhaust from a bathroom, sanitary compartment, or laundry must be discharged— (i) directly or via a shaft or duct to outdoor air; or (ii) to a roof space that is ventilated in accordance with F6.4	No details at this stage. Mechanical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C
F6.4:	Ventilation of roof spaces	Where an exhaust system covered by F6.3 discharges directly or via a shaft or duct into a roof space, the roof	No details at this stage. Mechanical consultant to certify at Construction Certificate stage	CRA – Refer Annexure C

Section F: Health and Amenity			
	space must be ventilated to outdoor air through evenly distributed openings.		

Section G: Ancillary Provisions			
Part G1 – Minor Structures and Components			
G1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
G1.1: Swimming pools	N/A	N/A	N/A
G1.2: Refrigerated chambers, strong-rooms and vaults	N/A	N/A	N/A
G1.3: Outdoor play spaces	N/A	N/A	N/A
NSW G1.101: Provision for cleaning windows	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: > the windows can be cleaned wholly from within the building; or > via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.	No details at this stage. Method of cleaning of windows to form part of the design at Construction Certificate stage, or otherwise be included in the BCA Specification	CRA – Refer Annexure C
Part G2 – Boilers, Pressure Vessels, Heating Appliances, Fireplaces, Chimneys and Flues			
G2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
G2.2: Installation of Appliances	The installation of a stove, heater or similar appliance in a building must comply with:	It is not considered that these items will form part of the design	N/A

Section G: Ancillary Provisions			
	> Domestic solid-fuel burning appliances — Installation: AS/NZS 2918:2018. > For boilers and pressure vessels: Specification G2.2		
G2.3: Open Fireplaces	N/A	N/A	N/A
G2.4: Incinerator Rooms	N/A	N/A	N/A
Part G3 – Atrium Construction			
G3.1: Atriums Affected by the Part	N/A	N/A	N/A
Part G4 – Construction in Alpine Areas			
G4.0: Deemed-to-Satisfy Provisions	N/A	N/A	N/A
Part G5 – Construction in Bushfire Prone Areas			
G5.0: Deemed-to-Satisfy Provisions	N/A	N/A	N/A
Part G6 – Occupiable Outdoor Areas			
G6.1: Application of part	N/A	N/A	N/A

Section H: Special Use Buildings			
Part H1 – Class 9b Buildings			
NSW H1.1:	N/A	N/A	N/A

Section H: Special Use Buildings			
Application of Part			
Part H2 – Public Transport Buildings			
H2.1: Application of Part	N/A	N/A	N/A
Part H3 – Farm Building and Farm Sheds			
H3.1: Application of Part	N/A	N/A	N/A

Section I: Maintenance
Part I1 – Equipment and Safety Installations
This Part has been deleted in BCA2019.

Section J: Energy Efficiency (Class 3, 5, 6, 7b, 8, 9)			
Part J0 – Energy Efficiency			
J0.1: Application of Section J	Informational	To be assessed in separate consultants report	Noted

Section J: Energy Efficiency (Class 2 & 4)			
NSW Part J(A)1 – Building Fabric			
NSW J(A)1.0: Deemed-to-Satisfy Provisions	Informational	To be assessed in separate consultants report	Noted

ANNEXURE C BCA COMPLIANCE SPECIFICATION

Annexure C – BCA Compliance Specification

The following BCA matters are to be addressed by specific BCA Design Certificate to be issued by the relevant architectural, services and engineering consultants at the Construction Certificate Stage. This schedule should be forwarded to all consultants to obtain verification that these items have and will be included in the design documentation / specifications:

Architectural Design Certification

1. The FRL's of building elements for the proposed works have been designed in accordance with Table 3 of Specification C1.1 of BCA2019 for a building of Type A Construction
2. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
3. Building elements must be non-combustible in accordance with C1.9 of BCA2019.
4. Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C1.10 and Specification C1.10 of BCA2019.
5. Any ancillary elements fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible will comply with Clause C1.14 of BCA2019.
6. Except where an AS2118.1 sprinkler system is proposed, vertical separation will be provided to the new openings in the external walls in accordance with Clause C2.6 of BCA2019. It is noted that no spandrel separation is required in the stairway or to a void.
7. The parts of different classifications located alongside one another in the same storey will be separated in accordance with Clause C2.8 and Specification C1.1 of BCA2019.
8. Floors separating storeys of different classifications will comply with BCA Clause C2.9 of BCA2019.
9. Equipment will be separated in accordance with Clause C2.12 of BCA2019.
10. The electricity substation, any main switch room sustaining emergency equipment required to operate in emergency mode, will be separated from the remaining building with construction having an FRL 120/120/120 and provided with self-closing -/120/130 fire doors in accordance with Clause C2.13 of BCA2019.
11. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C3.2 of BCA2019 or protected in accordance with Clause C3.4 of BCA2019.
12. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C3.5 of BCA2019.
13. Doors in a fire-isolated exit will be self-closing or automatic closing fire doors with an FRL of not less than -/60/30 in accordance with Clause C3.8 of BCA2019.
14. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C3.9 of BCA2019.
15. Services penetrating elements required to possess an FRL including the floor slabs, walls, shafts, etc. will be protected in accordance with Clause C3.12, C3.13 and C3.15 and Specification C3.15 of BCA2019.
16. Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation will be protected in accordance with BCA Clause C3.16.
17. The lift doors will be --/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C3.10 of BCA2019.

18. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C3.11 of BCA2019.
19. Columns protected by light weight construction will achieve an FRL not less than the FRL for the element it is penetrating, in accordance with Clause C3.17 of BCA2019.
20. A lintel will 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 spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non-loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification C1.1 Clause 2.3 BCA2019.
21. All attachments to the external façade of the building will be fixed in a way that does not affect the fire resistance of that element in accordance with Clause 2.4 of Specification C1.1 of BCA2019.
22. The top and bottom of the riser shafts will achieve an FRL not less than the FRL required for the walls of the shaft in accordance with Clause 2.7 of Specification C1.1 of BCA2019.
23. Fire doors will comply with AS 1905.1:2015 and Specification C3.4 of BCA2019.
24. The required exits will be fire-isolated in accordance with Clause D1.3 of BCA2019.
25. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
26. The fire-isolated exits will be in accordance with Clause D1.7 of BCA2019.
27. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
28. The ladder from the plant, lift machine rooms, and electricity network substation in lieu of a stairway will be in accordance with Clause D1.16 of BCA2019.
29. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
30. The stairway or ramp within the fire-isolated shaft is to be non-combustible, and if there is a local failure not cause structural damage or impair the fire resistance of the shaft, in accordance with Clause D2.2 of BCA2019.
31. The non-fire isolated stairs will be constructed in accordance with Clause D2.3 of BCA2019.
32. The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2019 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
33. The enclosing walls and ceiling under the non-fire-isolated stairway will achieve an FRL of 60/60/60, and have a self-closing -/60/30 fire door, in accordance with Clause D2.8 of BCA2019.
34. New pedestrian ramps will comply with AS 1428.1:2009, Clause D2.10 and Part D3 of BCA2019. The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
35. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
36. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.

37. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
38. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the machinery room, boiler house, lift-machine room, plant-room, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS 1657:2013 or Part D2 of BCA2019.
39. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
40. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
41. Signage will be provided on fire and smoke doors in accordance with Clause D2.23 of BCA2019.
42. The openable portion of a window in a 9b early childhood centre or a bedroom of a Class 2, 3, 4 building will be protected with a restricting device or secure screen that does not allow a 125mm sphere to pass through the opening or screen and resist an outward horizontal action of 250N in accordance with Clause D2.24 of BCA2019. In addition to window protection, and for other openable windows 4 meters or more above the ground below, a barrier with a height not less than 865mm above the floor will be installed to the openable window.
43. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.
44. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2:2012.
45. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
46. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
47. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS 3740:2010.
48. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
49. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F1.11 of BCA2019.
50. Sub-floor ventilation will be provided in accordance with Clause F1.12 of BCA2019.
51. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS 1288:2006 / AS 2047:2014.
52. Sanitary facilities will be provided in the building in accordance with Clause F2.1, Table F2.1, Clause F2.3 and Table F2.3 of BCA2019.
53. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.
54. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
55. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.
56. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.
57. Water closets and urinals will be located in accordance with Clause F4.8 of BCA2019.
58. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
59. Pliable building membranes installed in external walls will comply with Clause F6.2 of BCA2019 and where a pliable building membrane is not installed in an external wall, the primary water control layer will be separated from water sensitive materials by a drained cavity.

60. Every storey of the carpark will be provided with an adequate system of permanent natural or mechanical ventilation in accordance with Clause F4.11 of BCA2019.
61. A safe manner for cleaning of windows located 3 or more storeys above ground level will be provided in accordance with the Work Health & Safety Act 2011 and regulations made under that Act in accordance with NSW G1.101 of BCA2019.
62. The construction of the residential portions of the development will be undertaken in accordance with the relevant BASIX commitments that form part of the Development Consent approval.
63. Essential fire or other safety measures must be maintained and certified on an ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2000.
64. Building Fabric and Thermal Construction will be in accordance with Part J1 of BCA2019.
65. Glazing will be in accordance with Part J1 of BCA2019.
66. Building sealing will be in accordance with Part J3 of BCA2019.
67. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2019.

Electrical Services Design Certification:

68. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019.
69. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
70. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
71. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.
72. Lighting power and controls will be installed in accordance with Part J6 of BCA2019.

Hydraulic Services Design Certification:

73. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
74. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS 2419.1:2005 as required.
75. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2019 and AS 2441:2005.
76. A sprinkler system will be installed in accordance with Clause E1.5 of BCA2019, Specification E1.5 and appropriate part(s) of AS 2118.
77. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.
78. The heated water supply systems will be designed and installed to NCC Volume 3 – Plumbing code and Clause J7.2 of BCA2019.

Mechanical Services Design Certification:

79. An air-handling system which does not form part of a smoke hazard management system will be installed in accordance with Clause E2.2 of BCA2019, and AS 1668.1:2015.
80. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS 1668.2:2012.

81. Every storey of the car park will be ventilated in accordance with Clause F4.11 of BCA2019 and where not naturally ventilated it will be mechanically ventilated in accordance with AS 1668.2:2012 as applicable.
82. The commercial kitchen will be provided with a kitchen exhaust hood in accordance with Clause F4.12 of BCA2019, and AS 1668.1:2015 and AS 1668.2:2012.
83. Exhaust systems installed in a kitchen, bathroom, sanitary compartment or laundry of a Class 2 or 4 *sole-occupancy unit* will have a minimum flow rate and discharge location in accordance with Clause F6.3 of BCA2019.
84. Where exhaust discharges directly or via shaft into a roof space of a Class 2 or 4 *sole-occupancy unit*, ventilation of the roof space will comply with Clause F6.4 of BCA2019.
85. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J5 of BCA2019

Structural Engineers Design Certification:

86. The material and forms of construction for the proposed works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2019 as follows:
87. Dead and Live Loads – AS/NZS 1170.1:2002
88. Wind Loads – AS/NZS 1170.2:2011
89. Earthquake actions – AS 1170.4:2007
90. Masonry – AS 3700:2018
91. Concrete Construction – AS 3600:2018
92. Steel Construction AS 4100:1998
93. Aluminium Construction – AS/NZS 1664.1 or 2:1997
94. Timber Construction – AS 1720.1:2010
95. The FRL's of the structural elements for the proposed works have been designed in accordance with Specification C1.1 of BCA2019, including Table 3 for a building of Type A Construction
96. The lift shaft will have an FRL in accordance with Clause C2.10 and Specification C1.1 of BCA2019.
97. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
98. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2019 to reinstate the FRL of the element concerned.
99. Upon completion of the works, a structural engineer will be able to certify that local failure will be in accordance with Clause D2.2 of BCA2019 for the fire isolated stairs.

Lift Services Design Certification:

100. The lifts throughout the development will be provided with stretcher facilities in accordance with Clause E3.2 of BCA2019 and will be capable of accommodating a stretcher with a patient lying horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above the floor level.
101. Warning signage in accordance with Clause E3.3 of BCA2019 will be provided to the lifts to advise not to use the lifts in a fire.
102. Access and egress to the lift well landings will comply with the Deemed-to-Satisfy Provisions of D3 of the BCA2019 and will be suitable to accommodate disabled persons.

103. The type of lifts will also be suitable to accommodate persons with a disability in accordance with Clause E3.6, Table E3.6a, and will have accessible features in accordance with Table E3.6b of BCA2019.
104. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3.6 of BCA2019.
105. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification E3.1 of BCA2019.

Acoustic Services Design Certification:

106. The sound transmission and insulation of the residential portions of the development will comply with Part F5 of BCA2019.

NSW Specification Design Certificate:

107. Materials, floor and wall linings/coverings, surface finished and air-handling ductwork used in the works will comply with the fire hazard properties in accordance with Clause C1.10, NSW Clause C1.10, Specification C1.10 and NSW Specification C1.10 of BCA2019.
108. The building will be separated in accordance with Clause C2.5, and NSW Clause C2.5(b)&(h) of BCA2019.
109. Doorways and other openings in internal walls required to have an FRL will be protected in accordance with Clause C3.11, and NSW Clause C3.11(d) of BCA2019.
110. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6, and NSW Clause D1.6(f)(vi)&(j) of BCA2019.
111. Stair geometry to the new stairways will be in accordance with Clause D2.13, and NSW Clause D2.13(a)(ix)(x)(xi) of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a nosing strip with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
112. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15, and NSW Clause D2.15(d)&(e) of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge leads to a flight below.
113. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, NSW Clause D2.16 & NSW Table D2.16a 1 and D2.17 of BCA2019.
114. The doorways and doors will be in accordance with Clause D2.19, NSW Clause D2.19(b)(v) and D2.20 of BCA2019.
115. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 and NSW Clause D2.21(c)&(d) of BCA2019.
116. Insulation will be in accordance with AS/NZS 4859.1:2018 and will be installed as required by NSW Part J1 of BCA2019.
117. A smoke detection and alarm systems will be installed throughout the building in accordance with Table E2.2a, NSW Table E2.2a and NSW Specification E2.2a of BCA2019.
118. Exit signage will be installed in accordance with Clause E4.5, NSW Clause E4.6, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
119. The building will be mechanically ventilated in accordance with Clause F4.5, NSW F4.5(b) of BCA2019 and AS 1668.2:2012.