BCA LOGIC

Building Regulation, BCA,
Fire, Access and Energy Consultants

To:	Brendan Waights
Project:	LOT 8 – 18 Alexander Street, Collaroy
Report:	BCA Assessment Report
Reference No:	111559-BCA-r1 (LOT 8)
Date:	12/03/2020
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DOCUMENT CONTROL

Revision	Date	Description	
111559-BCA-r1	12/03/2020	BCA Assessment Report	
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1 BASIS OF ASSESSMENT

1.1 Location and Description

The building development, the subject of this report, is located at LOT 8 – 18 Alexander Street, Collaroy. The proposed building is a Boarding House containing 13 boarding rooms across two (2) storey located above carparking.

The building is provided with a Manager's room and a common room with common open space located at the front of the building.

Both vehicular and pedestrian access is via Alexander Street.

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 provision 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

Average specific extinction area

Average specific extinction area means the average specific extinction area for smoke as determined by AS 5637.1.

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m2) as determined by AS ISO 9239.1.

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

Fire-source feature means—

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

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

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

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

Flammability index

Flammability Index means the index number as determined by AS 1530.2.

Group number

Group number means the number of one of 4 groups of materials 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.

Non-combustible

Non-combustible means—

(a) applied to a material — not deemed combustible as determined by AS 1530.1 — 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; or

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

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 three (3).

2.2 Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
3	Level 1 – Level 2	Boarding Rooms and Common Areas
7	Undercroft	Car Parking

2.3 Effective Height (Clause A1.0)

The building has an *effective height* of less than 12 metres. (RL16220 – RL10720 = 5.5m)

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 7a	Maximum Floor Area	5,000m^2
	Maximum Volume	30,000m^3
Class 3	The Class 3 portions of the building are not subject to floor area and volume limitations of C2.2 as Table 3 of Specification C1.1 and Clause C3.11 of the BCA regulates the compartmentation and separation provisions applicable to buildings, or building portions, of Class 3 classifications.	

2.6 Fire Compartments

The following *fire compartments* have been assumed:

1. The undercroft carpark will form its own fire compartment;
2. The residential levels will form their own fire compartment.

2.7 Exits

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

(a) The first tread of the non-fire-isolated stairs;

(b) The construction edge of the building leading from the carpark;

(c) The doorways leading to open space.

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 far boundary of Alexander Street;

South: The rear boundary of the allotment;

East: The side boundary of the allotment;

West: The side boundary of the allotment;

A fire-source feature is defined in Part A1.0 – Schedule 3 of the BCA as–

(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.

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.

3 ESSENTIAL FIRE SAFETY MEASURES

The following fire safety measures are required to be installed in the building, this 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** AS1905.1:2015 (Fire Resistant Doorsets) AS1905.2-2005 (Fire Resistant roller shutters)
2.	Construction Joints	**BCA2019 C1.1, Spec C1.1** **BCA2019 C3.16** AS1530.4:2014 & AS4072.1-2005
3.	Fire doors	**BCA2019 C2.13** (Electricity Supply Systems) **BCA2019 C3.4** (Acceptable methods of Protection) **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.	Fire shutters (where required)	**BCA2019 C3.4** (Acceptable methods of protection) **BCA2019 Spec. C3.4**
6.	Fire windows (where required)	**BCA2019 C3.4** (Acceptable Methods of Protection) **BCA2019 Spec. C3.4**

Item	Essential Fire and Other Safety Measures	Standard of Performance
7.	Lightweight construction	**BCA2019 C1.1, Spec. C1.1** **BCA2019 C1.8, Spec C1.8** **BCA2019 C3.11** (Bounding Construction)
General		
8.	Portable fire extinguishers	**BCA2019 E1.6** AS2444–2001
General - Egress		
9.	Operation of Door latches • Failsafe • Manuel Push Button Control	**D2.21** (Operation of Latch) AS1670.1:2018
10.	Path of travel for stairways, passageway and ramps	EP&A Reg. 2000 Clauses 184-186
11.	Swing of Exit Doors	**D2.20** (Swinging Doors)
12.	Warning & operational signs	**BCA2019 D3.6** (Braille Exit Signs) (Note: E4.5 (Exit Signs))
Electrical Services		
13.	Automatic fire detection & alarm: • Clause 4 - AS1670.1-2018 system throughout the building/part connected to a BOWS @ 100dB(A)	**BCA2019 E2.2**, NSW Table E2.2a, Table 2.2b, **Spec E2.2a** - Clause 4 (Smoke detection system) **Spec E2.2a** - Clause 7 (BOWS) **Spec E2.2a** - Clause 8 (System Monitoring) AS1670.1:2018 (Fire) – Section 4 and 5 (Detectors) AS1670.3 – 2018 (Fire Alarm Monitoring)
14.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1 –2018
15.	Exit signs	**BCA2019 E4.5** (Exit Signs) **BCA2019 E4.6** (Direction Signs) **BCA2019 E4.7** (Residential Concession) **BCA2019 E4.8** (Design and Operation - Exits) AS/NZS 2293.1 –2018

Item	Essential Fire and Other Safety Measures	Standard of Performance
16.	System Monitoring	**BCA2019 E2.2 , Table E2.2a,Spec E2.2a** AS1670.3-2018
Hydraulic Services		
17.	Fire hydrant systems • NSW Storz Couplings	**BCA2019 E1.3** AS2419.1–2005
18.	Hose reel systems	**BCA2019 E1.4** AS2441–2005
19.	Wall-wetting sprinkler / drenchers (where required)	**BCA2019 C3.4,** AS2118.2 : Wall-wetting sprinkler / drenchers
Mechanical Services		
20.	Fire dampers	**BCA2019 E2.2, Spec E2.2a, Spec E2.2b** **BCA2019 C3.15** AS 1668.1:2015 (Amdt 1) AS1682.1:2015 & AS1682.2:2015
21.	Mechanical air handling systems 1. Mechanical ventilation to carpark.	**BCA2019 E2.2, Table E2.2a, Table E2.2b** **Spec E2.2a, Spec 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 3	Class 7a
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
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 -/-/-
External Columns • Loadbearing • Non-loadbearing	 90/-/- -/-/-	 120/-/- -/-/-
Common Walls & Fire Walls	90/90/90	120/120/120
Stair and Lift Shafts required to be fire-resisting • Loadbearing • Non-loadbearing	 90/90/90 -/90/90	 120/120/120 -/120/120
Internal walls bounding sole occupancy units • Loadbearing • Non-loadbearing	 90/90/90 -/60/60	 120/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: • Loadbearing • Non-loadbearing	 90/90/90 -/60/60	 120/-/- -/-/-
Ventilating, pipe, garbage and like shafts: • Loadbearing • Non-loadbearing	 90/90/90 -/90/90	 120/90/90 -/90/90
Other loadbearing internal walls, beams trusses and columns	90/-/-	120/-/-
Floors	90/90/90	120/120/120

Item	Class 3	Class 7a
Roofs[1]	90/60/30	120/60/30

[1] The residential roof need not comply with any FRL's due to the classification of the 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.	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
2.	Allow for a lack of protection to be provided to openings formed by the undercroft carpark slab and the residential slab above.	C3.2

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 or B 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—

(i) a building required to be of Type A construction; and

(ii) a building required to be of Type B construction, subject to C2.10, in—

(A) a Class 2, 3 or 9 building; and

(B) a 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:

(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.

Currently the external façade construction has been nominated on the plans as follows:

- Northern elevation – Insitu concrete, perforated metal screens, James Hardie Axon 133, sandstone and FC Sheeting
- Southern elevation – Insitu concrete, perforated metal screens, James Hardie Axon 133, sandstone and FC Sheeting
- Eastern elevation – Insitu concrete, perforated metal screens, James Hardie Axon 133, sandstone and FC Sheeting
- Western elevation – Insitu concrete, perforated metal screens, James Hardie Axon 133, sandstone and FC Sheeting

It would be required to provide specific details and testing for the metal screens proposed and the James Hardies Axon proposed to ensure that they are deemed non-combustible and suitable to be used.

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-load bearing internal walls required to be fire resisting.

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

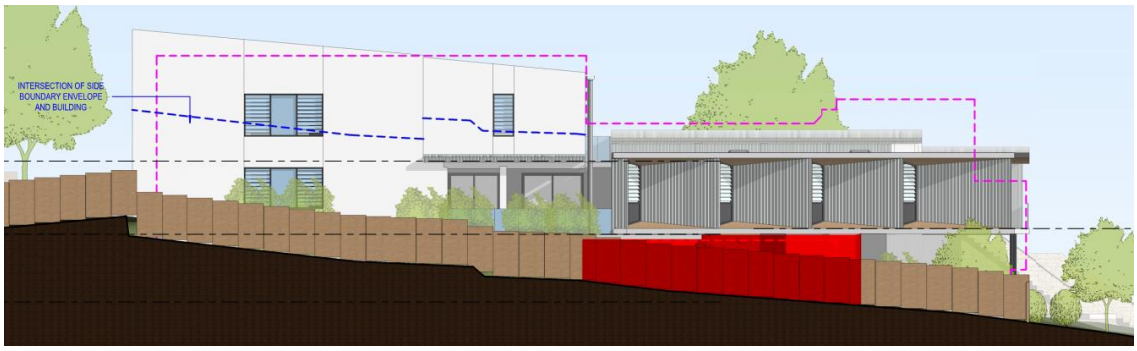
5.5 Protection of openings in external walls – Clause C3.2

There are several openings provided within proximity to the boundary that will need to be provided with protection in accordance with Clause C3.4.

However it is noted that the open nature of the carpark has led to openings being provided between the slab levels that will need to be protected. Based on the nature of the openings it is considered that methods of protection would be limited unless blade walls are provided along the boundaries.

It would be possible to seek a Performance Solution to allow for a lack of protection being provided to these openings due to the driveways being kept clear, however it is considered that the openings on the eastern elevation would need to be protected with blade walls due to the proximity of the cars to the openings. The openings located adjacent to the stair on the western elevation would also need to be infilled.

The red shaded section below identified the openings that may be addressed under the Performance Solution.



ANNEXURE A - DESIGN DOCUMENTATION

This report has been based on the following design documentation.

Table 5. Architectural Plans

Architectural Plans Prepared by Walsh^2 Architects			
Drawing Number	**Revision**	**Date**	**Title**
DA111	A	07.02.2020	Undercroft Floor Plan
DA112	A	07.02.2020	Level 1 Floor Plan
DA113	A	07.02.2020	Level 2 Floor Plan
DA123	A	07.02.2020	Roof Plan
DA200	A	07.02.2020	Sections
DA300	A	07.02.2020	Elevations
DA800	A	07.02.2020	External Finishes

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	'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	Comment	Status
SECTION B: STRUCTURE		
PART B1 – STRUCTURAL PROVISIONS		
B1.0: Deemed-to-Satisfy Provisions	Informational	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, Architect and Manufacturers 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.	CRA – Refer Annexure C
B1.6 Construction of buildings in flood hazard areas	A Class 3 in a flood hazard area (refer to Council maps) must comply the ABCB Standard for Construction of Buildings in Flood Hazard Areas.	FI
SECTION C: FIRE RESISTANCE		
PART C1 – FIRE RESISTANCE AND STABILITY		
C1.0: Deemed-to-Satisfy Provisions	Informational	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.	CRA – Refer Annexure C
C1.2: Calculation of rise in storeys	The building has a rise in storeys of three (3).	Noted
C1.3: Buildings of multiple classification	Informational	Noted
C1.4: Mixed Types of construction	The building will all one type of construction.	Noted
C1.5: Two Storey Class 2, 3 or 9c buildings	Not applicable due to the rise in storeys.	N/A
C1.6: Class 4 Parts of building	Not applicable due to the building classification.	N/A
C1.7: Open spectator stands and indoor sports stadium	Not applicable due to the use of the building.	N/A

SECTION C: FIRE RESISTANCE		
C1.8: Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8.	CRA – Refer Annexure C
C1.9: Non-combustible building elements	(a) 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. (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: (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	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	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*.	CRA – Refer Annexure C
C1.11: Performance of external walls in fire	Not applicable due to the rise in storeys.	N/A
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.	Noted
C1.13: Fire-protected timber: Concession	Fire protected timber is not proposed to be used within the building	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 (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	CRA – Refer Annexure C

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	(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
C2.1: Application of Part	Informational	Noted
C2.2: General floor area and volume limitations	The fire compartment sizes are noted to compliant with this clause	Complies
C2.3: Large isolated buildings	The building is not considered to be a large isolated building	N/A
C2.4: Requirements for open spaces and vehicular access	No vehicular access is required to be provided in accordance with this clause	N/A
C2.5: Class 9a and 9c Buildings	Not applicable due to the building classification.	N/A
C2.6: Vertical separation of openings in external walls	It is noted that throughout the building vertical separation has been provided in accordance with a combination of vertical spandrels and horizontal projections, these must be provided in accordance with the following: • a 900mm high (FRL 60/60/60) spandrel extending at least 600mm above the separating slab, or • a 1.1m horizontal projection (FRL 60/60/60) also extending at least 450mm either side of the openings. It is noted that there is an instance where the opening to a balcony is not setback 450mm from the edge of the balcony within Bed 5, however this is noted to be provided with a solid balustrade to act as a vertical spandrel.	CRA – Refer Annexure C
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*, 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	CRA – Refer Annexure C

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	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.	
C2.8: Separation of classifications in the same storey	The building is noted to maintain the same classification on each of the storeys	Noted
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 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.	CRA – Refer Annexure C
C2.10: Separation of lift shafts	There is no lift shaft connecting several storeys	N/A
C2.11: Stairways and lifts in one shaft	There are no lift shafts within the building	N/A
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 • a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more. Equipment need not be separated in if the equipment comprises: • a lift installation without a machine room; or • 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.	CRA – Refer Annexure C

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C2.13: Electricity supply system	• 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: – fire hydrant booster pumps; – hose reel pumps; – control and indicating equipment; and	CRA – Refer Annexure C
C2.14: Public corridors in Class 2 and 3 Buildings	There are no public corridors greater than 40m in length	Complies
PART C3 – PROTECTION OF OPENINGS		
C3.0: Deemed-to-Satisfy Provisions	Informational	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 mm^2 in face area and is spaced not less than 2 m from any other ventilator in the same wall; and (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,	Note

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	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	There are several openings located within proximity to the boundary and will need to be protected in accordance with Clause C3.4. However in many instances it is noted that blade walls have been provided as a method to protect these openings, it would be required that these blade walls maintain an FRL of at least 30/-/-. Otherwise a Performance Solution may be sought to allow for a lack of protection. Within the undercroft carpark, it is noted that the open nature of the carpark has technically created openings between the slab levels that need to be protected. It is noted that protection of these opening may be addressed by the construction of a blade wall along the boundary, however a Performance Solution may be sought to allow for no protection to provide based upon a management plan to keep driveway areas clear. Although it would be required to infill openings on the western elevations as a Performance Solution would not be possible along this elevation.	**FI**
C3.3: Separation of external walls and associated openings in different fire compartments	There are no openings within separate fire compartment which will need to be protected in accordance with this clause	N/A

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C3.4:	Acceptable methods of protection	Where protection is required, openings must be protected as follows: Doorways: (i) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or (ii) –/60/30 fire doors that are self-closing. Windows: (i) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (ii) –60/– fire windows that are 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.	CRA – Refer Annexure C
C3.5:	Doorways in fire walls	There are no fire walls proposed within the building	N/A
C3.6:	Sliding fire doors	There are no sliding fire doors proposed	N/A
C3.7:	Protection of doorways in horizontal exits	There are no horizontal exits provided within the building	N/A
C3.8:	Openings in fire-isolated exits	There are no fire-isolated exits provided within the building	N/A
C3.9:	Service penetrations in fire-isolated exits	There are no fire-isolated exits provided within the building	N/A
C3.10:	Openings in fire-isolated lift shafts	There is no fire rated lift shaft within the building	N/A
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 3 parts) must be protected by self–closing -/60/30 fire doors. There are units provided along the open walkway which may be provided with solid core doors in accordance with (g) of this clause.	CRA – Refer Annexure C

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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 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.	CRA – Refer Annexure C
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.	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.	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 to achieve the required FRL.	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.	CRA – Refer Annexure C
SPECIFICATION C.1.1 – FIRE-RESISTING CONSTRUCTION		
2.0: General Requirements	Informational	Noted
2.1: Exposure to fire-source features	The building is exposed to the fire source feature being the adjacent property boundaries. It is noted that blade walls are used to add protection to the openings within the building. These blade wall will need to be provided in accordance with this clause and maintain an FRL of no less than 30/-/-.	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	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE			
		required for the supporting part itself and for the part it supports.	
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).	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.	CRA – Refer Annexure C
2.5:	General concessions	It is noted that there will be no concessions applicable in accordance with this clause	N/A
2.6:	Mezzanine floors: Concession	There are no mezzanines proposed	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.	CRA – Refer Annexure C
2.8:	Carparks in Class 2 and 3 Buildings	This concession may be applicable and the carpark may be deemed as a Class 3 for the purpose of fire resisting requirements of this specification	CRA – Refer Annexure C
2.9:	Residential Aged Care building: Concession	Not applicable due to the use of the building.	N/A
3.0:	Type A fire-resisting construction	Noted	-
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	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	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. • 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 FRLs 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 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	The slab laid on the ground need not comply with Table 3.	Noted
3.3: Floor Loading of Class 5 and 9b buildings: Concession	Not applicable due to the building classification.	N/A
3.4: Roof superimposed on concrete slab: Concession	The building is not considered to be provided with a concrete roof slab	Noted
3.5: Roof: Concession	A roof need not comply with Table 3 if its covering is *non-combustible*.	CRA – Refer Annexure C
3.6: Roof lights	The top floor units are provided with skylights, it is considered that each of the roof lights are located more than 3m from each other and capable of complying with this clause.	CRA – Refer Annexure C
3.7: Internal columns and walls: Concession	For a building 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 an FRL of 60/60/60;	CRA – Refer Annexure C
3.8: Open spectator stands and indoor sports stadiums concession	Not applicable due to the use of the building.	Na

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3.9:	Carparks	The carpark is not sprinkler protected and therefore this concession is not applicable.	N/A
3.10:	Class 2 and 3 buildings Concession	This concession may be applicable to the building due to the rise in storeys	Noted
SPECIFICATION C1.10 – FIRE HAZARD PROPERTIES			
1.	Scope	Informational	-
2.	Application	Informational	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 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.	CRA – Refer Annexure C
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.	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.	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;	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.	CRA – Refer Annexure C
SPECIFICATION C3.4 – FIRE DOORS, SMOKE DOORS, FIRE WINDOWS AND SHUTTERS			
1.	Scope	Informational	Noted
2.	Fire doors	Fire doorsets must comply with AS1905.1 and not fail by radiation through any glazed part during the period specified for integrity in the required FRL.	CRA – Refer Annexure C
3.	Smoke doors	The building is not provided with any smoke doors	N/A

SECTION C: FIRE RESISTANCE			
4.	Fire shutters	No fire shutters have been proposed within the building, should they be required for protection of openings they must be provided in accordance with this clause.	CRA – Refer Annexure C
5.	Fire windows	No fire windows have been proposed within the building, should they be required for protection of openings they must be provided in accordance with this clause.No fire windows have been provided within the builsing	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS			
PART D1 – PROVISION FOR ESCAPE			
D1.0:	Deemed-to-Satisfy Provisions	Informational	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
D1.2:	Number of exits required	The basement carpark is noted to be provided with access to two exits, while the residential levels are provided with access to at least one exit.	Complies
D1.3:	When fire-isolated stairways and ramps are required	Fire-isolated stairs are not required to be provided due to the number of storeys connected	Noted
D1.4:	Exit travel distances	Class 3 residential — • Each of the sole occupancy units are noted to have a travel of less than 6m to an exit and will comply. Class 7a carpark— • Throughout the carpark there is access provided to two exits; however these are not used as alternative exits instead complaint access is provided to each of these egress points.	CRA – Refer Annexure C
D1.5:	Distance between alternative exits	The two exits located within the carpark are not relied upon as alternative exits due to compliant egress travel distances being made available	Noted
D1.6:	Dimensions of exits and paths of travel to exits	In a required *exit* or path of travel to an *exit*– • 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.	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	• 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.	
D1.7: Travel via fire-isolated exits	There are no fire-isolated exits provided within the building	N/A
D1.8: External stairways or ramps in lieu of fire-isolated exits	There are no fire-isolated exits provided within the building	N/A
D1.9: Travel by non-fire-isolated stairways or ramps	Each of the non-fire-isolated stairs are noted to have a suitable travel distance to open space and complete travel distance in accordance with this clause	Complies
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*. • 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. • 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 It is considered that the egress points from within the carpark and on the outside of the carpark along the driveway may be impacted by vehicular parking in these locations, it would be required to install bollards in these locations to allow for egress at all times. This may be detailed at CC stage.	CRA – Refer Annexure C
D1.11: Horizontal exits	There are no horizontal exits proposed within the building	N/A
D1.12: Non-required stairways, ramps or escalators	There are no non-required stairs or the like proposed.	N/A
D1.13: Number of persons accommodated	The building is only provided with 11 units with a single bedroom in each, therefore it would be considered that a number of people in each storey would be no more than 100.	Noted
D1.14: Measurement of distances	Informational	Noted
D1.15: Method of Measurement	Informational	Noted

SECTION D: ACCESS AND EGRESS		
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	It is considered that there are no plants rooms which will required access in accordance with this clause	N/A
D1.17: Access to lift pits	There is no lift pit being proposed as there is no lift shaft	Noted
PART D2 – CONSTRUCTION OF EXITS		
D2.0: Deemed-to-Satisfy Provisions	Informational	Noted
D2.1: Application of Part	Informational– Except for D2.13, D2.14(a), D2.16, D2.17(d), D2.17(e), D2.21 and D2.24, the Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 3 building.	Noted
D2.2: Fire-isolated stairways and ramps	There are no fire-isolated exits provided within the building	N/A
D2.3: Non-fire-isolated stairways and ramps	Required stairs and ramps (including landings and any supporting building elements) must be constructed according to D2.2, or only of- (a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue".	CRA – Refer Annexure C
D2.4: Separation of rising and descending stair flights	There are no fire-isolated exits provided within the building.	N/A
D2.5: Open access ramps and balconies	There are no access ramps or the like used in accordance with this clause.	N/A
D2.6: Smoke lobbies	There are no smoke lobbies required in accordance with this clause	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	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	the like must be enclosed with *non-combustible* construction or a fire protective covering with doorways suitably sealed against smoke spread.	
D2.8: Enclosure of space under stairs and ramps	There are no enclosures which are provided under any of the non-fire-isolated stair	N/A
D2.9: Width of stairways and ramps	There are no stairs that are required to be wider than 2m	Noted
D2.10: Pedestrian ramps	It is considered that there are no ramps proposed, each of the walkways are considered to be a suitable gradient	Noted
D2.11: Fire-isolated passageways	There are no fire isolated passageways	N/A
D2.12: Roof as open space	Roof of the carpark is to achieve an FRL of 120/120/120 as *exits* discharge onto it.	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; • goings must be between 250 mm and 355 mm; • 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. • **In the case of a required stairway, no winders in lieu of a landing** • 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*	CRA – Refer Annexure C

<table>
<tr><th colspan="3">SECTION D: ACCESS AND EGRESS</th></tr>
<tr><td></td><td>4586-2013 Slip resistance classification of new pedestrian surface materials.</td><td></td></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.
<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>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; or
b) in other cases–
(i) the doorway opens to a road or open space, external stair landing or external balcony; and
(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.</td><td>CRA – Refer Annexure C</td></tr>
<tr><td>D2.16: Barriers to prevent falls</td><td>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</td><td>CRA – Refer Annexure C</td></tr>
</table>

SECTION D: ACCESS AND EGRESS		
	landing and does not exceed 500 mm in length; and • 1 m in all other locations. <u>Balustrade openings – 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</u> For floors more than 4m above the surface beneath, the balustrade must not incorporate any horizontal or near 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 (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 AS1428.1.	CRA – Refer Annexure C
D2.18: Fixed platforms, walkways stairways and ladders	There are no walkways being proposed in accordance with this clause	N/A
D2.19: Doorways and doors	• *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.	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
D2.20: Swinging doors	Each of the egress doors are noted to be swinging doors in accordance with this clause; however it is noted that the common area doorway does not swing in the direction of egress and must therefore be fitted with a device for holding it in the open position.	CRA – Refer Annexure C
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– (i) 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 less than 35mm and not more than 45mm; or (ii) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor. (iii) 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 200m^2; or (iii) are fitted with a fail-safe device which automatically unlocks the door upon the activation of an AS 1670.1 detection system	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	installed throughout the building and is readily openable when unlocked.	
D2.22: Re-entry from fire-isolated exits	Re-entry is not required to be provided due to the effective height	N/A
D2.23: Signs on doors	No doors are being provided which would require signage in accordance with this clause	N/A
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– 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	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	purposes, excluding external stairways and external ramps; must not permit a 300mm sphere to pass through it. 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.	
D2.25: Timber stairways: concession	Timber stairs are not being proposed in accordance with this clause.	N/A
PART D3 - ACCESS FOR PEOPLE WITH A DISABILITY		
An assessment of this part has not been undertaken. Refer to separate Access Assessment Report		

SECTION E: SERVICES AND EQUIPMENT		
PART E1 – FIRE FIGHTING EQUIPMENT		
E1.0: Deemed-to-Satisfy Provisions	Informational	Noted
E1.3: Fire hydrants	As the building has a floor area greater than 500 m^2, 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: – be within 8m of a hardstand for fire brigade appliance; – be within sight of the main entry; – Assuming it is attached to the building, be separated from the building by construction achieving FRL 90/90/90 for 2m either side of and 3m above the upper hose connections • 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, issuing from 30 m hose length, extending not less than 1m into the room. Otherwise details must be provided to confirm that a street hydrant system would be capable of achieve compliance in accordance with AS 2419.1-2005	CRA – Refer Annexure C
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 carpark. 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.	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
E1.5:	Sprinklers	The building is not required to be provided with a sprinkler system	N/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. For the Class 3 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.	CRA – Refer Annexure C
E1.8:	Fire control centres	The building is not required to be provided with a fire control centre	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*;	Noted
E1.10:	Provision for special hazards	The building is not considered to be a special hazard	N/A
PART E2 – SMOKE HAZARD MANAGEMENT			
E2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E2.1:	Application of Part	Informational	Noted
E2.2:	General requirements (including Tables E2.2a and E2.2b)	**Class 3 parts** Class 3 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 must comply with clause 5.5 of AS 1668.1 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.	CRA – Refer Annexure C
E2.3:	Provisions for special hazards	The building is not considered to be a special hazard	N/A
SPECIFICATION E2.2a – SMOKE DETECTION AND ALARM SYSTEM			
1.	Scope	Informational	Noted
2.	Type of system	Due to the rise in storeys a smoke detection system in accordance with Clause 4 must be provided	Noted
3.	Smoke alarm system	Not applicable due to the building classification.	N/A
4.	Smoke detection system	The building must be provided with a smoke detection and alarm system in accordance with this clause. Smoke	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
		detectors must be provided out in accordance with AS1670.1 and activate a building occupant warning system in accordance with Clause 7.	
5.	Combined smoke alarm and smoke detection system	Not applicable due to the building classification.	N/A
6.	Smoke detection for smoke control system	The building is not provided with any smoke control systems	N/A
7.	Building occupant warning system	A building occupant warning system must be provided throughout the building	CRA – Refer Annexure C
8.	System Monitoring	System monitoring must be provided in accordance with this clause.	CRA – Refer Annexure C
PART E3 – LIFT INSTALLATIONS			
E3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E3.1:	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1.	CRA – Refer Annexure C
E3.2:	Stretcher facility in lifts	The building does not have an effective height of 12m	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 as per E3.3.	CRA – Refer Annexure C
E3.4:	Emergency lifts	An emergency lift is not required due to the height of the building	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.	CRA – Refer Annexure C
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. Refer to separate Access Report for a detailed review of this Clause.	Noted
E3.7:	Fire service controls	The lift does not serve a height of 12m	N/A
E3.8:	Aged care buildings	Not applicable due to the use of the building.	N/A
E3.9:	Fire service recall switch	The lift does not serve a height of 12m	N/A
E3.10:	Lift car service drive control switch	The lift does not serve a height of 12m	N/A
PART E4 – VISIBILITY IN AN EMERGENCY, EXIT SIGNS AND WARNING SYSTEMS			
E4.0:	Deemed-to-Satisfy Provisions	Informational	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 2293.1-2018.	CRA – Refer Annexure C
E4.3:	Measurement of distance	Informational	Noted

SECTION E: SERVICES AND EQUIPMENT			
E4.4:	Design and operation of emergency lighting	The emergency lighting system must comply with AS 2293.1-2018.	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.	CRA – Refer Annexure C
E4.6:	Direction signs	Where an *exit* is not readily apparent, directional signage is to be installed indicating the direction of egress.	CRA – Refer Annexure C
E4.7:	Class 2 and 3 buildings and Class 4 Parts: Exemptions	This clause may be applicable due to the classification of the building	Noted
E4.8:	Design and operation of exit signs	*Exit* signs must comply with AS 2293.1-2018 and be clearly visible at all times when the building is occupied.	CRA – Refer Annexure C
E4.9:	Emergency warning and intercom systems	Not applicable due to the use of the building.	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.	PS Required
F1.1:	Stormwater drainage	Stormwater drainage to comply with AS3500.3-2003.	CRA – Refer Annexure C
F1.4:	External above ground membranes	Waterproofing membranes for external above ground use to comply with AS4654 Parts 1 and 2-2012.	CRA – Refer Annexure C
F1.5:	Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	CRA – Refer Annexure C
F1.6:	Sarking	*Sarking-type materials* used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2-1994.	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.	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.	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).	CRA – Refer Annexure C
F1.11:	Provision of floor wastes	A bathroom and laundry is to have a floor waste where the floor is graded to the floor waste to permit the drainage of water.	CRA – Refer Annexure C
F1.12:	Sub-floor ventilation	The building is noted to be slab on ground and not provided with a sub-floor area	N/A

SECTION F: HEALTH AND AMENITY			
F1.13:	Glazed Assemblies	Glazed assemblies are to comply with AS2047 and AS1288.	CRA – Refer Annexure C
PART F2 – SANITARY AND OTHER FACILITIES			
F2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F2.1:	Facilities in residential buildings (including Table F2.1)	Each SOU has been provided with a bath or shower; a closet pan; wash basin;	Complies
F2.2:	Calculation of number of occupants and facilities	Noted	Noted
F2.3:	Facilities in Class 3 to 9 buildings (including Table F2.3)	It is required that a sanitary facility is provided for the use of the employees. There are no common area facilities proposed, only the sanitary compartment provided within the managers room. It is considered that for this to be adopted as the employee facility it would be required for the manager to offer this bathroom to all other employees within the building. Otherwise it would be required to provide a secondary sanitary compartment for employee access	Noted
F2.4:	Accessible sanitary facilities (including Table F2.4)	Refer to separate Access Assessment Report for review of this clause	Noted
F2.5:	Construction of sanitary compartments	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 closet pan within the sanitary compartment and the doorway.	CRA – Refer Annexure C
F2.6:	Interpretation: urinals and washbasins	Informational	Noted
F2.8:	Waste Management	Not applicable due to the building classification.	N/A
F2.9:	Accessible adult change facilities	Not applicable due to the use of the building.	N/A
PART F3 – ROOM SIZES			
F3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F3.1:	Height of rooms and other spaces	Based on the sections provided, it is considered that each residential storey is capable of complying with the required 2400mm within habitable rooms and 2100mm within the carpark in accordance with this clause.	CRA – Refer Annexure C
PART F4 – LIGHT AND VENTILATION			
F4.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F4.1:	Provision of natural light	Natural light must be provided to all bedrooms and dormitories.	Noted
F4.2:	Methods and extent of natural lighting	Each of the rooms throughout the building are provided with direct natural lighting via openings.	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY			
		It is considered that each of the openings would be capable of maintain 10% of the floor area in accordance with this clause.	
F4.3:	Natural light borrowed from adjoining room	Each of the sole occupancy units are noted to be single rooms where requiring natural light and therefore borrowing light would not be required	Noted
F4.4:	Artificial Lighting	Lighting to the all areas is to comply with AS 1680.0.	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.	CRA – Refer Annexure C
F4.6:	Natural ventilation	Each of the rooms throughout the building are provided with direct nature ventilation via openings. It is considered that each of the openings would be capable of maintain 5% of the floor area in accordance with this clause.	CRA – Refer Annexure C
F4.7:	Ventilation borrowed from adjoining room	Each of the sole occupancy units are noted to be a single room where requiring natural ventilation and therefore borrowing ventilation would not be required	Noted
F4.8:	Restriction on position of water closets and urinals	Sanitary compartments are considered to be mechanically ventilated and therefore suitably located in accordance with this clause when considering Clause F4.9	Noted
F4.9:	Airlocks	Sanitary compartments are considered to be mechanically ventilated	CRA – Refer Annexure C
F4.11:	Carparks	Every storey of a carpark must have: • a system of mechanical ventilation complying with AS1668.2-2012; or • a system of natural ventilation complying with Section 4 of AS 1668.4-2012.	CRA – Refer Annexure C
F4.12:	Kitchen local exhaust ventilation	The building is not provided with a commercial kitchen	Noted
PART F5 – SOUND TRANSMISSION AND INSULATION			
F5.0:	Deemed-to-Satisfy Provisions	Informational	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
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 (Rw) or weighted sound reduction index with spectrum adaptation term (Rw + Ctr) determined in accordance with AS/NZS 1276.1 or ISO 717.1 using results from laboratory measurements; or (b) comply with Specification F5.2.	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	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY			
		term (Ln,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 (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 3 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.	CRA – Refer Annexure C
F5.5:	Sound insulation rating of walls	• A wall in a Class 3 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 B. a *sole-occupancy unit* from a plant room or lift shaft. • 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. • 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. • Doorways in walls separating the Class 3 *sole-occupancy units* from a stairway, public corridor, public lobby or the like must be provided with a door assembly that has an Rw not less than 30.	CRA – Refer Annexure C
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	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY			
		from the rooms of any sole occupancy unit by construction with an Rw + Ctr (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).	
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.	CRA – Refer Annexure C
SPECIFICATION F5.2 – SOUND INSULATION FOR BUILDING ELEMENTS			
1.	Scope	Informational	Noted
2.	Construction Deemed-to-Satisfy	Information only.	Noted
SPECIFICATION F5.5 – IMPACT SOUND – TEST OF EQUIVALENCE			
1.	Scope	Noted	-
2.	Construction to be Tested	Information only.	Noted
3.	Method	Information only.	Noted
PART F6 – CONDENSATION MANAGEMENT			
F6.0:	Deemed-to-satisfy provisions	Informational	Noted
F6.1:	Application of Part	Not applicable due to the building classification.	N/A

SECTION I: MAINTENANCE
PART I1 – EQUIPMENT AND SAFETY INSTALLATIONS
This Part has been deleted in BCA2019.

SECTION J: ENERGY EFFICIENCY (Class 3)			
PART J0 – ENERGY EFFICIENCY			
J0.1:	Application of Section J	Informational	Noted
J0.2:	Heating & cooling loads of Sole Occupancy Units to Class 2 & 4 parts	Not applicable, clause relevant to class 2 & 4 only	NA
J0.3:	Ceiling fans	Not applicable	NA
J0.4:	Roof thermal breaks	Not applicable, clause relevant to J0.2 only	NA
J0.5:	Wall thermal breaks	Not applicable, clause relevant to J0.2 only	NA
PART J1 – BUILDING FABRIC			
J1.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J1.1:	Application of Part	The provisions of Part J1 apply to building elements forming part of the *envelope* of the building.	CRA – Refer Annexure C
J1.2:	Thermal construction general	Where required insulation is to comply with AS4859.1 and be installed in accordance with this clause.	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 3)			
		The required Total R-Value and Total System U-Value, must be determined in accordance with J1.2 (e) clause.	
J1.3:	Roof and ceiling construction	(a) A roof or ceiling must achieve a Total R-Value greater than or equal to— (i) in climate zones 1, 2, 3, 4 and 5, R3.7 for a downward direction of heat flow; and (ii) in climate zone 6, R3.2 for a downward direction of heat flow; and (iii) in climate zone 7, R3.7 for an upward direction of heat flow; and (iv) in climate zone 8, R4.8 for an upward direction of heat flow. (b) In climate zones 1, 2, 3, 4, 5, 6 and 7, the solar absorptance of the upper surface of a roof must be not more than 0.45.	CRA – Refer Annexure C
J1.4:	Roof lights	Any roof lights must have – (a) a total area of not more than 5% of the floor area of the room & space served; and (b) transparent and translucent elements with performance of – (i) Total system SHGC, in accordance with table J1.4, and (ii) Total system U-value, not more than U3.9	CRA – Refer Annexure C
J1.5:	Walls	(a) The Total System U-Value of wall-glazing construction must not be greater than— (i) for a Class 2 common area, a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a ward area, U2.0; and (ii) for a Class 3 or 9c building or a Class 9a ward area— (A) in climate zones 1, 3, 4, 6 or 7, U1.1; or (B) in climate zones 2 or 5, U2.0; or (C) in climate zone 8, U0.9. (b) The Total System U-Value of display glazing must not be greater than U5.8. (c) The Total System U-Value of wall-glazing construction must be calculated in accordance with Specification J1.5a. (d) Wall components of a wall-glazing construction must achieve a minimum Total R-Value of— (i) where the wall is less than 80% of the area of the wall-glazing construction, R1.0; or (ii) where the wall is 80% or more of the area of the wall-glazing construction, the value specified in Table J1.5a. (e) The solar admittance of externally facing wall-glazing construction must not be greater than— (i) for a Class 2 common area, a Class5, 6, 7, 8 or 9b building or a Class 9a building other than a ward area, the values specified in Table J1.5b; and	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 3)			
		(ii) for a Class 3 or 9c building or a Class 9a ward area, the values specified in Table J1.5c. (f) The solar admittance of a wall-glazing construction must be calculated in accordance with Specification J1.5a. (g) The Total system SHGC of display glazing must not be greater than 0.81 divided by the applicable shading factor specified in Clause 7 of Specification J1.5a. a)	
J1.6:	Floors	(a) A floor must achieve the Total R-Value specified in Table J1.6. (b) A floor must be insulated around the vertical edge of its perimeter with insulation having an R-Value greater than or equal to 1.0 when the floor— (i) is a concrete slab-on-ground in climate zone 8; or (ii) has an in-slab or in-screed heating or cooling system, except where used solely in a bathroom, amenity area or the like. (c) Insulation required by (b) for a concrete slab-on-ground must— (i) be water resistant; and (ii) be continuous from the adjacent finished ground level— (A) to a depth not less than 300 mm; or (B) for the full depth of the vertical edge of the concrete slab-on-ground.	CRA – Refer Annexure C
PART J2 – GLAZING			
J2.0:	Deemed-to-Satisfy Provisions	Part J2 has deliberately been left blank from the BCA2019	Noted
J2.1:	Application of Part	N/A	Noted
J2.4:	Glazing	N/A	Noted
J2.5:	Shading	N/A	Noted
PART J3 – BUILDING SEALING			
J3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J3.1:	Application of Part	The requirements of this Part apply to elements forming the *envelope* of the building other than: • a building in a climate zones 1, 2, 3 and 5 where the only means of air-conditioning is by using an evaporative cooler; or • a permanent building opening necessary for the safe operation of a gas appliance; • a building or space where mechanical ventilation required by Part F4 provides sufficient pressurisation to prevent infiltration; • parts of building that cannot be fully enclosed.	Noted
J3.2:	Chimneys and flues	The chimney or flue of an open solid-fuel burning appliance must be provided with a damper or flap that can be closed to seal the chimney or flue.	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 3)		
J3.3: Roof lights	Roof lights serving conditioned spaces, or habitable rooms in climate zone 4-8, must be sealed or be capable of being sealed and must be constructed with– (i) an imperforate ceiling diffuser or the like installed at the ceiling or lining level; or (ii) a weatherproof seal; or (iii) a shutter system readily operated either manually, mechanically or electronically by the occupant.	CRA – Refer Annexure C
J3.4: Windows and doors	(a) A door, openable window or the like must be sealed— (i) when forming part of the envelope; or (ii) in climate zones 4, 5, 6, 7 or 8. (b) The above does not apply to: (i) a window complying with AS 2047; or (ii) a fire door or smoke door; or (iii) roller shutter door, roller shutter grille or other security device or device installed only for out-of-hours security. (c) A seal to restrict air infiltration— (i) for the bottom edge of a door, must be a draft protection device; and (ii) for the other edges of a door or the edges of an openable window or other such opening, may be a foam or rubber compression strip, fibrous seal or the like. (d) An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, revolving door or the like, other than– (i) where the conditioned space has a floor area of not more than $50m^2$; or (ii) where a café, restaurant, open front shop or the like has– A. a 3m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and B. at all other entrances to the café, restaurant, open from shop of the like, self-closing doors	CRA – Refer Annexure C
J3.5: Exhaust fans	The exhaust fans serving conditioned spaces or habitable room in climate 4 - 8, must be fitted with a sealing device, such as a self-closing damper of the like.	CRA – Refer Annexure C
J3.6: Construction of ceilings, walls and floors	The roof, walls, floors and any other openings, such as window or doors, are to be constructed to minimise air leakage by being enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or are sealed by expanding architraves, skirting, cornices; or expanding foam, rubber compressible strip, caulking or the like.	CRA – Refer Annexure C
J3.7: Evaporative Coolers	The evaporative cooler must be fitted with a self-closing damper or like when serving heated space OR in climate zones 4 - 8.	CRA – Refer Annexure C
PART J4		
J4.0:	This part has deliberately been left blank in the BCA2019	N/A

SECTION J: ENERGY EFFICIENCY (Class 3)			
PART J5 – AIR CONDITIONING AND VENTILATION SYSTEMS			
J5.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J5.1:	Application of Part	Informational	Noted
J5.2:	Air-conditioning systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.3:	Mechanical ventilation system control	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.4:	Fan systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.5:	Ductwork Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.6:	Ductwork Sealing	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.7:	Pump Systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.8:	Pipework Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.9:	Space Heating	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.10:	Refrigerant Chillers	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.11:	Unitary Air-Conditioning Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.12:	Heat Rejection Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
PART J6 – ARTIFICIAL LIGHTING AND POWER			
J6.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J6.1:	Application of Part	Informational	Noted
J6.2:	Artificial lighting	Artificial lighting must comply with BCA Clause J6.2. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.3:	Interior artificial lighting and power control	Lighting switches and control devices must comply with BCA Clause J6.3. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.4:	Interior decorative and display lighting	Lighting falling under this clause is to be separately switched from other lighting, be under a manual switch and controlled with a time switch. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.5:	Exterior artificial lighting	Exterior lighting attached to or directed at the façade of the building must be controlled by daylight sensors or time switches in accordance with the specific requirements of this clause. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.6:	Boiling water and chilled water storage units	The power supply to a fixed boiling water or chilled water storage unit must be controlled by a time switch in accordance with BCA Specification J6. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.7:	Lifts	There are no lift cars proposed, only an exposed platform	N/A

SECTION J: ENERGY EFFICIENCY (Class 3)			
J6.8:	Escalators and moving walkways	There are no escalators proposed	N/A
PART J7 – HEATED WATER SUPPLY			
J7.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J7.2:	Heated water supply system	The hot water supply systems must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.	CRA – Refer Annexure C
J7.3:	Swimming pool heating and pumping	There is no swimming pool proposed	N/A
J7.4:	Spa pool heating and pumping	There is no spa pool proposed	N/A
PART J8 – FACILITIES FOR ENERGY MONITORING			
J8.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J8.1	Application of Part	Informational	Noted
J8.3	Facilities for energy monitoring	• A building or *sole-occupancy unit* with a floor area of more than 500m^2 must have an energy meter configured to record the time-of-use consumption of gas and electricity. • A building with a floor area of more than 2,500m^2 must have the energy meters configured to enable individual time-of-use energy consumption data recording, in accordance with (c), of the energy consumption of –: – air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and – artificial lighting; and – appliance power; and – central hot water supply; and – internal transport devices including lifts, escalators and moving walkways where there is more than one serving the building; and – other ancillary plant. • Energy meters required by (b) must be interlinked by a communication system that collates the time-of-use energy consumption data to a single interface monitoring system where it can be stored, analysed and reviewed. • The provisions of (b) do not apply to a Class 2 building with a floor area of more than 2500 m^2 where the total area of the common areas is less than 500 m^2.	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)			
PART J0 – ENERGY EFFICIENCY			
J0.1:	Application of Section J	Informational	Noted
J0.2:	Heating & cooling loads of SOU's to Class 2 & 4 parts	Not applicable	NA
J0.3:	Ceiling fans	Not applicable	NA

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)			
J0.4:	Roof thermal breaks	Not applicable	NA
J0.5:	Wall thermal breaks	Not applicable	NA
PART J1 – BUILDING FABRIC			
J1.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J1.1:	Application of Part	This part is not applicable to the carpark (unconditioned)	NA
J1.1 – J1.6		Not applicable	NA
PART J2 – GLAZING			
J2.0:	Deemed-to-Satisfy Provisions	Part J2 provisions are now in Part J1	Noted
J2.1:	Application of Part	This part is not applicable to the carpark.	NA
J2.4 – J2.5		This part is not applicable to the carpark.	NA
PART J3 – BUILDING SEALING			
J3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J3.1:	Application of Part	This part is not applicable to the carpark.	NA
J3.2 – J3.7		Not applicable	NA
PART J4 – AIR MOVEMENT			
Deleted		Part J4 deleted in BCA2016	-
PART J5 – AIR CONDITIONING AND VENTILATION SYSTEMS			
J5.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J5.2:	Air-conditioning system control	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.3:	Mechanical ventilation system control	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.4:	Fan systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.5:	Ductwork Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.6:	Ductwork Sealing	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.7:	Pump Systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.8:	Pipework Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.9:	Space Heating	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.10:	Refrigerant Chillers	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.11:	Unitary Air-Conditioning Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.12:	Heat Rejection Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
PART J6 – ARTIFICIAL LIGHTING AND POWER			
J6.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J6.1:	Application of Part	Applies to all buildings except a Class 8 electricity network substation.	Noted

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)			
J6.2:	Artificial lighting	Artificial lighting must comply with J6.2(a), J6.2(b) and J6.2(c), relevant to maximum permitted illumination power loads. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.3:	Interior artificial lighting and power control	Lighting switches and control devices must comply with BCA Clause J6.3. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.4:	Interior decorative and display lighting	Lighting falling under this clause is to be separately switched from other lighting, be under a manual switch and controlled with a time switch. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.5:	Exterior artificial lighting	Exterior lighting attached to or directed at the façade of the building must be controlled by daylight sensors or time switches in accordance with the specific requirements of this clause. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.6:	Boiling water and chilled water storage units	The power supply to a fixed boiling water or chilled water storage unit must be controlled by a time switch in accordance with BCA Specification J6. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.7:	Lifts	There is no lift proposed within the carpark	N/A
J6.8:	Escalators and moving walkways	There are no escalator proposed	N/A
PART J7 – HEATED WATER SUPPLY			
J7.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J7.2:	Heated water supply system	A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.	CRA – Refer Annexure C
PART J8 – FACILITIES FOR ENERGY MONITORING			
J8.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J8.1:	Application of Part	Informational	Noted
J8.3:	Facilities for energy monitoring	• A building with a floor area of more than 500m^2 must have an energy meter configured to record the time-of-use consumption of gas and electricity. • A building with a floor area of more than 2,500m^2 must have the energy meters configured to enable individual time-of-use energy consumption data recording, in accordance with (c), of the energy consumption of –: – air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and – artificial lighting; and – appliance power; and – central hot water supply; and – internal transport devices including lifts, escalators and moving walkways where there is more than one serving the building; and	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)		
	– other ancillary plant. • Energy meters required by (b) must be interlinked by a communication system that collates the time-of-use energy consumption data to a single interface monitoring system where it can be stored, analysed and reviewed. • The provisions of (b) do not apply to a Class 2 building with a floor area of more than 2500 m^2 where the total area of the common areas is less than 500 m^2. –	

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. 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. Floors separating storeys of different classifications will comply with BCA Clause C2.9 of BCA2019.
8. Equipment will be separated in accordance with Clause C2.12 of BCA2019.
9. The 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.
10. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C3.2 and C3.3 of BCA2019 or protected in accordance with Clause C3.4 of BCA2019.
11. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C3.5 of BCA2019.
12. 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.
13. 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.
14. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C3.11 of BCA2019.
15. 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.
16. 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.

17. 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.
18. 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.
19. Fire doors will comply with AS1905.1 and Specification C3.4 of BCA2019.
20. Fire shutters and fire windows will be in accordance with Specification C3.4 of BCA2019.
21. The required exits will be fire-isolated in accordance with Clause D1.3 of BCA2019.
22. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
23. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
24. Horizontal exits will be in accordance with Clause D1.11 of BCA2019.
25. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
26. The non-fire isolated stairs will be constructed in accordance with Clause D2.3 of BCA2019.
27. 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.
28. New pedestrian ramps will comply with AS1428.1-2009, 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 AS4586.
29. The roof of the building where the exit discharges will have an FRL of 120/120/120, and will not have roof lights or openings within 3m of the path of travel in accordance with Clause D2.12 of BCA2019.
30. 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 AS4586.
31. 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 AS4586 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 where the edge ledge to a flight below.
32. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
33. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
34. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 of BCA2019.
35. The openable portion of a window in a bedroom 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.
36. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.

37. Non-illuminated exit signage will be installed in accordance with Clause E4.7, and of BCA2019.
38. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2.
39. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
40. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
41. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS3740.
42. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
43. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F1.11 of BCA2019.
44. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS1288 / AS2047.
45. 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.
46. Accessible sanitary facilities will be provided in the building in accordance with Clause F2.4, Table F2.4 (a) of BCA2019 and AS1428.1-2009.
47. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.
48. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
49. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.
50. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.
51. Water closets and urinals will be located in accordance with Clause F4.8 of BCA2019.
52. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
53. 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.
54. 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.
55. 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.
56. 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.
57. Building Fabric and Thermal Construction will be in accordance with Part J1 of BCA2019.
58. Glazing will be in accordance with Part J1 of BCA2019.
59. Building sealing will be in accordance with Part J3 of BCA2019.
60. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2019.

Electrical Services Design Certification:

61. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019.

62. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS2293.1.

63. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS2293.1.

64. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0.

65. Lighting power and controls will be installed in accordance with Part J6 of BCA2019.

Hydraulic Services Design Certification:

66. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and ASNZS3500.3

67. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS2419.1 as required.

68. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2019 and AS2441.

69. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS2444.

70. 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:

71. 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.

72. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS1668.2.

73. 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 AS1668.2 as applicable.

74. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J5 of BCA2019.

Structural Engineers Design Certification:

75. 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:

- Dead and Live Loads – AS1170.1
- Wind Loads – AS1170.2
- Earthquake actions – AS1170.4
- Masonry – AS3700
- Concrete Construction – AS3600
- Steel Construction AS4100
- Aluminium Construction – AS/NZS1664.1 or 2
- Timber Construction – AS 1720.1
- ABCB Standard for Construction of Buildings in Flood Hazard Areas.

76. The FRL's of the structural 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.

77. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.

78. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2019 to reinstate the FRL of the element concerned.

79. 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:

80. 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.

81. 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.

82. 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.

83. The lifts will comply with AS1735.12 in accordance with Clause E3.6 of BCA2019.

84. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification E3.1 of BCA2019.

Acoustic Services Design Certification:

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