



To: Garan Holdings Pty Limited
Project: 60 Binalong Avenue, Allambie Heights
Report: 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 60 Binalong Avenue, Allambie Heights. The development is bounded by three roads and two adjacent properties. The proposed building is two storey boarding house constructed on top of a basement carpark. There are several communal areas located throughout the building and a common laundry located in the basement.

Pedestrian access onto the site is provided by two footpaths on Binalong Avenue, whereas vehicular access is provided by Nargong Road.

1.2 Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA 2016, 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 2016. 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, 2016 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), (Note: The provision of disabled access to the subject development has been assessed against the deemed to satisfy provision of Part D.3 and F2.4 of BCA2016 only);
- (c) Demolition Standards not referred to by the BCA;
- (d) Work Healthy and Safety Act 2011;
- (e) 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
- (f) 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.

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 two (2).

2.2 Classification (Clause A3.2)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
7	Basement	Car parking and Laundry
3	Ground Floor – Level 1	Residential SOU's and Common Areas

2.3 Effective Height (clause A1.1)

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

2.4 Type of Construction Required (Table C1.1)

The building is required to be of Type C Construction.

Due to the concession available in Clause C1.5 of the BCA.

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	2,000m ²
	Maximum Volume	18,000m 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 basement carpark forms a single fire compartment.
2. The residential levels are their own fire compartment.

2.7 Exits

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

- (a) Each doorway leading to open space on the ground floor
- (b) The first tread of each non-fire-isolated stairs within the residential areas
- (c) The first treat of both non-fire-isolated stairs in the basement carpark

2.8 Climate Zone (Clause A1.1)

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 Nargong Road

South: The boundary of the adjoining property.

East: The far boundary of Jennifer Avenue and Binalong Avenue

West: The boundary of the adjoining property.

A *fire-source feature* is defined in Section A1.1 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.	Construction Joints	BCA2016 C1.1, Spec C1.1 BCA2016 C3.16 AS1530.4:2014 & AS4072.1-2005
2.	Fire doors	BCA2016 C3.4 (Methods of Protection) BCA2016 C3.5 (Doors in Fire Walls) AS1905.1: 2015
3.	Fire seals protecting openings in fire resisting components of the building	BCA2016 C3.15, BCA2016 C3.16, BCA2016 Spec C3.15 AS1530.4:2014 & AS4072.1-2005
4.	Lightweight construction	BCA2016 C1.1, Spec. C1.1 BCA2016 C1.8, Spec C1.8 BCA2016 C3.11 (Bounding Construction) BCA2016 C2.12 (Separation of Equipment) AS1530.4:2014
5.	Smoke Walls	BCA2016 C2.14 (Public Corridors Class 3)
6.	Smoke doors <ul style="list-style-type: none"> • Smoke Seals • Solid Core • Swing in direction of egress/or both ways • Connected to AS1670.1 if held open Smoke detectors within 1.5m both sides • Fail close on power failure 	BCA2016 C2.14 BCA2016 C2.5 Spec C2.5

Item	Essential Fire and Other Safety Measures	Standard of Performance
7.	Solid core doors <ul style="list-style-type: none"> Type 'C' Construction 	BCA2016 Spec. C3.4 C3.11 (Bounding Construction)
General - Egress		
8.	Automatic fail safe devices	BCA2016 D2.21 (Operation of Latches)
9.	Path of travel for stairways, passageway and ramps	EP&A Reg. 2000 Clauses 184-186
10.	Swing of Exit Doors	D2.20 (Swinging Doors)
11.	Warning & operational signs	BCA2016 D3.6 (Braille Exit Signs) (Note: E4.5 (Exit Signs)) BCA2016 E3.3 (Lift Signs),
Lifts		
12.	Access to Lift Pits <ul style="list-style-type: none"> Located at lowest level or if >3m provided through an access door 	BCA2016 D1.17 (Access to Lift Pits) 'DANGER LIFT WELL – ENTRY OF UNAUTHORISED PERSONS PROHIBITED – KEEP CLEAR AT ALL TIMES'
0Electrical Services		
13.	Automatic fire detection & alarm: <ul style="list-style-type: none"> Clause 3 - AS3786 Smoke Alarm systems powered from consumer mains to all residential SOU's, Clause 4 - AS1670.1-2015 system throughout the building/part connected to a BOWS @ 100dB(A) Incorporating a thermal detection system in the basement carpark 	BCA2016 E2.2 , NSW Table E2.2a, Table 2.2b, Spec E2.2a Spec E2.2a - Clause 3 (Smoke alarm system) Spec E2.2a - Clause 4 (Smoke detection system) AS3786:2014 (Amdt 1-4) AS1670.1:2015 (Fire) – Section 4 and 5 (Detectors)
14.	Emergency lighting	BCA2016 E4.2, E4.4 AS/NZS 2293.1 –2005
15.	Exit signs	BCA2016 E4.5 (Exit Signs) BCA2016 E4.6 (Direction Signs) BCA2016 E4.7 (Residential Concession) BCA2016 E4.8 (Design and Operation - Exits) AS/NZS 2293.1 –2005
Hydraulic Services		

Item	Essential Fire and Other Safety Measures	Standard of Performance
16.	Fire hydrant systems	BCA2016 E1.3 BCA2016 C2.12 (Separation of Equipment) AS2419.1–2005 FRNSW Technical Sheet D15/45534.V6 issued 11.04.17, 'Compatible Hose Connections'
17.	Hose reel systems (if required)	BCA2016 E1.4 AS2441–2005
Mechanical Services		
18.	Fire dampers	BCA2016 E2.2, Spec E2.2a, Spec E2.2b BCA2016 C3.15, Spec C3.15 AS/NZS1668.1:2015, AS1682.1:2015 & AS1682.2:2015

4 FIRE RESISTANCE LEVELS

The following fire resistance levels (FRL's) are required for the various structural elements of the building, 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 C Construction

Table 3. Type C Construction

Item	Class 3	Class 7a
External Walls <ul style="list-style-type: none"> • Less than 1.5m to a fire source feature • 1.5 – less 3m from fire source feature; • 3m or more from a fire source feature 	90/90/90 -/-/ -/-/	90/90/90 60/60/60 -/-/
External Column not incorporated in an external wall <ul style="list-style-type: none"> • Less than 1.5m to a fire source feature • 1.5 – less 3m from fire source feature; • 3m or more from a fire source feature 	90/-/ -/-/ -/-/	90/-/ 60/-/ -/-/
Common Walls and Fire Walls	90/90/90	90/90/90
Internal walls bounding sole occupancy units	60/60/60	-/-/
Internal walls bounding public corridors, hallways and the like:	60/60/60	-/-/
Internal walls bounding a stair if required to be fire rated	60/60/60	60/60/60

Note: An external wall that is required to have an FRL need only be tested from the outside to satisfy the FRL requirement.

In a Class 3 building, a floor separating storeys or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, must—

- (i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or
- (ii) have an FRL of at least 30/30/30; or
- (iii) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal; and

5 STATEMENT OF COMPLIANCE

The architectural design documentation as referred to in this report has been assessed against the applicable provision of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying (as outlined in Annexure B) with that Code.

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.

5.1 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 matters such as access for people with disabilities, stair and corridor widths and balustrade heights.

ANNEXURE A - DESIGN DOCUMENTATION

This report has been based on the following design documentation.

Table 4. Architectural Plans

Architectural Plans Prepared by Walsh ² Architects			
Drawing Number	Revision	Date	Title
DA101	A	21.01.18	Basement Plan
DA102	A	15.01.18	Ground Plan
DA103	A	21.01.18	Level 1 Plan
DA200	A	21.01.18	Sections
DA201	A	21.01.18	Sections
DA300	A	21.01.18	Elevations
DA301	A	21.01.18	Elevations

ANNEXURE B - DETAILED BCA 2016 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 was not enough information included in the documentation to accurately determine strict compliance with the individual clause requirements. However, subject to noting the requirements of each clause, compliance can be readily achieved.
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 5. 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 building, 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 B Construction, however as noted in Clause C1.5, the building may be Type C 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 two (2).	Noted
C1.3: Buildings of multiple classification	Informational	Noted
C1.4: Mixed Types of construction	The building is all one type of construction	Noted
C1.5: Two Storey Class 2, 3 or 9c buildings	As each part of the Class 3 building has access to 2 exits, this concession allows the building to be Type C construction.	Noted
C1.6: Class 4 Parts of building	Not applicable due to the building classification.	N/A

SECTION C: FIRE RESISTANCE		
C1.7: Open spectator stands and indoor sports stadium	Not applicable due to the use of the building.	N/A
C1.8: Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8.	CRA – Refer Annexure C
C1.10: Fire hazard properties	Fire hazard properties of building materials 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	Concrete external walls that could collapse as complete panels (e.g. tilt-up and pre-cast concrete), in a building having a rise in storeys of not more than 2, must comply with Specification C1.11.	CRA – Refer Annexure C
C1.12: Non-combustible materials	<p>The following materials, though <i>combustible</i> or containing <i>combustible</i> fibres, may be used wherever a <i>non-combustible</i> material is <i>required</i>:</p> <p>(a) Plasterboard.</p> <p>(b) Perforated gypsum lath with a normal paper finish.</p> <p>(c) Fibrous-plaster sheet.</p> <p>(d) Fibre-reinforced cement sheeting.</p> <p>(e) Pre-finished metal sheeting having a <i>combustible</i> surface finish not exceeding 1 mm thickness and where the <i>Spread-of-Flame Index</i> of the product is not greater than 0.</p> <p>(f) Bonded laminated materials where—</p> <p>(i) each laminate is <i>non-combustible</i>; and</p> <p>(ii) each adhesive layer does not exceed 1 mm in thickness; and</p> <p>(iii) the total thickness of the adhesive layers does not exceed 2 mm; and</p> <p>(iv) the <i>Spread-of-Flame Index</i> and the <i>Smoke-Developed Index</i> of the laminated material as a whole does not exceed 0 and 3 respectively.</p>	Noted
C1.13: Fire-protected timber: Concession	It is considered that fire-protected timber is not proposed to be used.	N/A
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 size of fire compartments in the building are deemed to be compliant	Complies
C2.3: Large isolated buildings	The proposal is not a large isolated building	N/A

SECTION C: FIRE RESISTANCE		
C2.4: Requirements for open spaces and vehicular access	The proposal is not a large isolated building	N/A
C2.5: Class 9a and 9c Buildings	Not applicable due to the building classification.	CRA – Refer Annexure C
C2.6: Vertical separation of openings in external walls	Being Type C construction, vertical separation is not required.	N/A
C2.7: Separation by fire walls	There is a fire rated wall that will be used to separate the basement from the residential level.	CRA – Refer Annexure C
C2.8: Separation of classifications in the same storey	Each of the storeys are the one classification	Noted
C2.9: Separation of classifications in different storeys	The floor separating the Class 3 part from the storey below must: <ul style="list-style-type: none"> (i) be a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or (ii) have an FRL of at least 30/30/30; or (iii) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal. 	CRA – Refer Annexure C
C2.10: Separation of lift shafts	As the lift doesn't serve more than two storeys this is not applicable.	N/A
C2.11: Stairways and lifts in one shaft	The stairs and the lift are all in separate shafts	Complies
C2.12: Separation of equipment	Due to the size and use of the building, it is considered that there are no areas in accordance with this clause that will need to be separated.	Noted
C2.13: Electricity supply system	<ul style="list-style-type: none"> • 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. 	CRA – Refer Annexure C
C2.14: Public corridors in Class 2 and 3 Buildings	The public corridors have been divided by smoke doors on each level. This will achieve compliance.	CRA – Refer Annexure C
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–	Noted

SECTION C: FIRE RESISTANCE		
	<p>(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</p> <p>(ii) Non-combustible ventilators for subfloor or cavity ventilation, if each does not exceed 45 000 mm² in face area and is spaced not less than 2 m from any other ventilator in the same wall; and</p> <p>(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</p> <p>(iv) In a carpark–</p> <p style="margin-left: 40px;">(A) Service penetrations through; and</p> <p style="margin-left: 40px;">(B) Openings formed by a vehicle ramp in,</p> <p style="margin-left: 40px;">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.</p> <p>(b) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings in building elements required to be fire-resisting (including doorways, windows including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL.</p> <p>(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.</p>	
C3.2: Protection of openings in external walls	There are no openings within proximity to the side boundaries that will require protection in accordance with this clause	N/A
C3.3: Separation of external walls and associated openings in different fire compartments	There are no openings in separate fire compartments which need protection in accordance with this clause	N/A
C3.4: Acceptable methods of protection	Methods of protection are noted	Noted

SECTION C: FIRE RESISTANCE		
C3.5: Doorways in fire walls	The doorway used to separate the fire compartments must be a fire door.	CRA – Refer Annexure C
C3.6: Sliding fire doors	No sliding fire doors are proposed	N/A
C3.7: Protection of doorways in horizontal exits	There are no horizontal exits proposed	N/A
C3.8: Openings in fire-isolated exits	There are no fire-isolated exits proposed	N/A
C3.9: Service penetrations in fire-isolated exits	There are no fire-isolated exits proposed	N/A
C3.10: Openings in fire-isolated lift shafts	The lift is not required to be separated and an FRL is not required	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 tight fitting, solid core door not less than 35 mm thick.	CRA – Refer Annexure C
C3.12: Openings in floors and ceilings for services	Where services pass through a floor which is required to achieve an FRL or a ceiling required to have a resistance 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	This clause is not applicable due to the type of construction	N/A
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.	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 bounded by 3 road and two side boundaries. Each of the setbacks from each respective boundary are enough to provide sufficient separation.	Noted

SECTION C: FIRE RESISTANCE		
2.2: Fire protection for a support of another part	Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL not less than that required by other provisions of this Specification; and if located within the same fire compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	CRA – Refer Annexure C
2.3: Lintels	A lintel must have the FRL required for the part of the building in which it is situated unless it does not contribute to the support of a fire door, fire window or fire shutter and meets the requirements of Spec C1.1 clause 2.3 (a) & (b).	CRA – Refer Annexure C
2.4: Attachments not to impair fire-resistance	<p>Where a combustible material is used as a finish or lining to a wall or roof, or sunscreen, or awning, to a building element required to have an FRL–</p> <ul style="list-style-type: none"> the material must be exempted under C1.10 or comply with the fire hazard properties prescribed under C1.10; and the material must not be located near or directly above a required exit so as to make the exit unusable in a fire; and the material must not otherwise constitute an undue risk of fire spread via the façade of the building or compromise egress from the building. <p>Note: The above includes any aluminium panels which, where containing plastic strengthening elements, would be considered combustible.</p> <p>Where aluminium composite panels are proposed as an attachment to a fire rated element, the panels and their location must comply with the above. Details, including fire hazard properties of the panels are to be provided for review. It is likely that Aluminium Composite Panels if used will need to be the subject of an Alternate Solution Report.</p>	CRA – Refer Annexure C
2.5: General concessions	There are no structure proposed on the roof that would use this concession	N/A
2.6: Mezzanine floors: Concession	There are no mezzanines requiring this concession	N/A
2.7: Enclosure of shafts	<p>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.</p> <p>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.</p>	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
2.8: Carparks in Class 2 and 3 Buildings	This concession may be applied to the carpark due to the layout of the building.	Noted
2.9: Residential Aged Care building: Concession	Not applicable due to the use of the building.	N/A
5.0: Type C fire-resisting construction	Noted	CRA – Refer Annexure C
5.1: Fire-resistance of building elements	<p>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.</p> <ul style="list-style-type: none"> • An external wall that is required to have an FRL need only be tested from the outside to satisfy the FRL requirement. • Internal walls in a Class 3 building are required to be fire rated must extend to– <ul style="list-style-type: none"> (i) to the underside of the floor next above if that floor has an FRL of at least 30/30/30 or a fire-protective covering on the underside of the floor; or (ii) the underside of a ceiling having a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes; or (iii) the underside of the roof covering if it is non-combustible and, except for roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements; or (iv) 450 mm above the roof covering if it is <i>combustible</i>; and • In a Class 3 building, except where within the one sole-occupancy unit, a floor separating storeys, or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, and any column supporting the floor, must— <ul style="list-style-type: none"> (i) have an FRL of at least 30/30/30; or (ii) have a fire-protective covering on the underside of the floor including beams incorporated in it and around the column, if the floor or column is combustible or of metal; 	CRA – Refer Annexure C
5.2: Carparks	The concession under Specification C1.1 Clause 2.8 is available to the carpark.	Noted
SPECIFICATION C1.10 – FIRE HAZARD PROPERTIES		
1. Scope	Informational	-
2. Application	Informational	Noted

SECTION C: FIRE RESISTANCE		
3. Floor linings and floor coverings	A floor lining or floor covering must have– <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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– <ul style="list-style-type: none"> (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 <i>fire hazard properties</i> set out in AS 4254 Parts 1 and 2.	CRA – Refer Annexure C
6. Lift cars	Materials used as– <ul style="list-style-type: none"> a) floor linings and floor coverings must have a <i>critical radiant flux</i> not less than 2.2; and b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1. 	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	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	Smoke doors must be constructed so that smoke will not pass from one side of the doorway to the other and, if they are glazed, there is minimal danger of a person being injured by accidentally walking into them. Refer to Clause 3.2 of BCA Specification C3.4.	CRA – Refer Annexure C
4. Fire shutters	No fire shutters are proposed	N/A
5. Fire windows	No fire windows are proposed	N/A

SECTION D: ACCESS AND EGRESS		
PART D1 – PROVISION FOR ESCAPE		
D1.0: Deemed-to-Satisfy Provisions	Informational	Noted
D1.1: Application of Part	The <i>Deemed-to-Satisfy Provisions</i> of this Part do not apply to the internal parts of a <i>sole-occupancy unit</i> in a Class 2 or 3 building or a Class 4 part of a building.	Noted
D1.2: Number of exits required	At least two exits have been made available from all points of the building and will achieve compliance.	Complies
D1.3: When fire-isolated stairways and ramps are required	None of the stairs are required to be fire-isolated	N/A
D1.4: Exit travel distances	The travel distances throughout the whole building are compliant due to the several egress options made available in the residential levels.	Complies
D1.5: Distance between alternative exits	The distance between alternative exits will achieve compliance due to the exits being the first tread of the non-fire-isolated stairways.	Complies
D1.6: Dimensions of exits and paths of travel to exits	Each of the egress paths throughout the building are found to maintain a 1000mm clear width. When the handrails are added to each of the stairs it is noted that compliance is still available.	CRA – Refer Annexure C
D1.7: Travel via fire-isolated exits	There are no fire-isolated exits proposed.	N/A
D1.8: External stairways or ramps in lieu of fire-isolated exits	There are no external ramps or the like used in accordance with this clause	N/A
D1.9: Travel by non-fire-isolated stairways or ramps	<p>Travel via the non-fire-isolated stairways are noted to be compliant as each will require less than 80m travel and are connected to the ground floor via their own flight.</p> <p>There are several other stairs within the storey, however these are considered to be stairs in a path of travel and not a non-fire-isolated stair.</p> <p>It is noted that smoke doors have been provided on each level and will provide separation to each exit.</p>	Complies
D1.10: Discharge from exits	<p>Each of the exits have a path which leads to the street and is shown to maintain a 1m clear width.</p> <p>The locations of each exit are suitable and would not require bollards as vehicular access would not be possible.</p>	CRA – Refer Annexure C
D1.11: Horizontal exits	There are no horizontal exits proposed	N/A
D1.12: Non-required stairways, ramps or escalators	There are no non-required stairways or the like proposed.	N/A

SECTION D: ACCESS AND EGRESS		
D1.13: Number of persons accommodated	<p>Each of the storeys in this building are for residential use, with each room only allow for 2 occupants, due to the number of units proposed, it is considered there would be no more than 100 people within the entire building.</p> <p>The carpark is used in association with the residential levels and is of a limited size with no more than 100 required to be within the space.</p>	Noted
D1.14: Measurement of distances	Informational	Noted
D1.15: Method of Measurement	Informational	Noted
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	There are no plant rooms proposed on any of the floor plans.	N/A
D1.17: Access to lift pits	Access to the lift pit is assumed to be through the bottom landing doors as the pit is assumed to be less than 3m deep.	CRA – Refer Annexure C
PART D2 – CONSTRUCTION OF EXITS		
D2.0: Deemed-to-Satisfy Provisions	Informational	Noted
D2.1: Application of Part	<p>Informational–</p> <p>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.</p>	Noted
D2.2: Fire-isolated stairways and ramps	There are no fire-isolated stairs or the like	N/A
D2.3: Non-fire-isolated stairways and ramps	As the building is not more than 2 storeys, there are no requirements in accordance with this clause.	N/A
D2.4: Separation of rising and descending stair flights	There are no rising and descending stairs	N/A
D2.5: Open access ramps and balconies	There are no open access ramps or the like proposed	N/A
D2.6: Smoke lobbies	There are no smoke lobbies required	N/A
D2.7: Installations in exits and paths of travel	No installations have been details at this stage, however any electrical services will need to be within a smoke sealed enclosure and a door with a non-combustible lining	CRA – Refer Annexure C
D2.8: Enclosure of space under stairs and ramps	There are no enclosure shown to be located under any stair	Noted
D2.9: Width of stairways and ramps	There are no stairs required to be wider than 2m	Noted
D2.10: Pedestrian ramps	There are no ramps proposed within the development	N/A
D2.11: Fire-isolated passageways	There are no fire-isolated passageways proposed	N/A

SECTION D: ACCESS AND EGRESS		
D2.12: Roof as open space	There is no part of the roof used as open space	N/A
D2.13: Goings and risers	<p>Stairways must comply with the following:</p> <ul style="list-style-type: none"> 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– <ul style="list-style-type: none"> (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm. Risers must not contain any openings that would permit a 125 mm sphere to pass through. each tread must have a non-slip finish or an adequate non-skid strip near the edge of the nosings; treads must be of solid construction (not mesh or perforated) if the stairway is more than 10 m high or connects more than 3 storeys. Treads must have a surface or nosing strip with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with <i>AS 4586-2013 Slip resistance classification of new pedestrian surface materials</i>. 	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS																				
D2.14: Landings	<p>Landings must 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.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="3" style="background-color: black; color: white; padding: 5px;">Surface Condition</th> </tr> <tr> <th style="background-color: black; color: white; padding: 5px;">Application</th> <th style="background-color: black; color: white; padding: 5px;">Dry</th> <th style="background-color: black; color: white; padding: 5px;">Wet</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Ramp steeper than 1:14</td> <td style="padding: 5px;">P4 or R11</td> <td style="padding: 5px;">P5 or R12</td> </tr> <tr> <td style="padding: 5px;">Ramp steeper than 1:20 but not steeper than 1:14</td> <td style="padding: 5px;">P3 or R10</td> <td style="padding: 5px;">P4 or R11</td> </tr> <tr> <td style="padding: 5px;">Tread or landing surface</td> <td style="padding: 5px;">P3 or R10</td> <td style="padding: 5px;">P4 or R11</td> </tr> <tr> <td style="padding: 5px;">Nosing or landing edge strip</td> <td style="padding: 5px;">P3</td> <td style="padding: 5px;">P4</td> </tr> </tbody> </table>	Surface Condition			Application	Dry	Wet	Ramp steeper than 1:14	P4 or R11	P5 or R12	Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11	Tread or landing surface	P3 or R10	P4 or R11	Nosing or landing edge strip	P3	P4	CRA – Refer Annexure C
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D2.15: Thresholds	<p>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–</p> <ul style="list-style-type: none"> a) in a building required to be accessible, the doorway– <ul style="list-style-type: none"> (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– <ul style="list-style-type: none"> (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. 	CRA – Refer Annexure C																		
D2.16: Barriers to prevent falls	<p>Balustrades must be provided to stairs and balconies, where there is a fall of more than 1m. Balustrades must comply with the following:</p> <p><u>Balustrade minimum heights</u></p> <ul style="list-style-type: none"> • 865 mm above stair nosings; • 865 mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length; and 	CRA – Refer Annexure C																		

SECTION D: ACCESS AND EGRESS		
	<ul style="list-style-type: none"> 1 m in all other locations. <p><u>Balustrade openings</u></p> <p>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.</p> <p><u>Climbability – other than fire-isolated stairs</u></p> <p>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.</p>	
D2.17: Handrails	<p>Handrails to stairways must:</p> <ul style="list-style-type: none"> 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 where the stairs are serving accessible areas of the building. Handrails in common areas must also accord with D3.3, when serving the accessible areas of the building. <p>The double stair in Building C is provided with two continuous handrails and an offset riser to allow for the handrail height to be maintained.</p>	CRA – Refer Annexure C
D2.18: Fixed platforms, walkways stairways and ladders	<p>There are no plant rooms or the like proposed at this stage, however it is considered that any such room would be provided with level access from the floor it is located on.</p>	Noted
D2.19: Doorways and doors	<p>Each of the exit doors are noted to be swinging doors.</p>	Complies
D2.20: Swinging doors	<p>Each of the exit doors swing in the direction of egress and will comply</p>	Complies
D2.21: Operation of latch	<p>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–</p> <ul style="list-style-type: none"> (i) a single hand downward action or pushing action on a single device which is located between 900mm 	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	<p>and 1.1 m from the floor and if serving an area required to be accessible by Part D3 –</p> <p>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</p> <p>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</p> <p>(ii) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor.</p>	
D2.22: Re-entry from fire-isolated exits	Re-entry is not required.	N/A
D2.23: Signs on doors	Signage is required to be provided to smoke doors and fire doors in accordance with this clause	CRA – Refer Annexure C
D2.24: Protection of openable windows	<p>There are several units which have been provided with a Juliet balcony that have a balustrade provided as the doors open. Although these rooms represent studio apartment it is considered that the openings are located in the living room portion of the unit and not the bedroom. It is considered that these door openings protected with balustrades would be sufficient as long as the balustrade is provided in accordance with Clause D2.16 of the BCA.</p> <p>a) Bedroom windows must be provided with protection if the floor below the window is 2m or more above the surface beneath.</p> <p>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:</p> <p>(i) The openable portion of the window must be protected with–</p> <p>A. a device to restrict the window opening; or</p> <p>B. a screen with secure fittings.</p> <p>(ii) A device or screen required by (i) must–</p> <p>A. not permit a 125 mm sphere to pass through the window opening or screen; and</p> <p>B. resist an outward horizontal action of 250 N against the–</p> <p>aa. window restrained by a device; or</p> <p>bb. screen protecting the opening; and</p> <p>C. have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.</p>	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	<p>c) A barrier with a height not less than 865 mm above the floor is required to an openable window–</p> <ul style="list-style-type: none"> (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). <p>d) A barrier covered by (c) except for (e) must not–</p> <ul style="list-style-type: none"> (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. <p>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.</p>	
D2.25: Timber stairways: concession	It is considered that timber stairs are not being used	N/A
PART D3 - ACCESS FOR PEOPLE WITH A DISABILITY		
Refer to separate Access Report for an assessment on this part.		

SECTION E: SERVICES AND EQUIPMENT		
PART E1 – FIRE FIGHTING EQUIPMENT		
E1.0: Deemed-to-Satisfy Provisions	Informational	Noted
E1.3: Fire hydrants	<p>As the building has a floor area greater than 500 m², a fire hydrant system complying with AS 2419.1-2005 must be provided to serve the building.</p> <p>Due to the smaller size of the building it may be possible to provide coverage via the street hydrant system (pending the location of the street hydrant). This will need to be reviewed based on the closest street hydrant and the furthest room. Should compliance not be available, it would be required to install and booster and possible internal hydrants throughout the building in accordance with AS2419.1.</p>	CRA – Refer Annexure C
E1.4: Fire hose reels	<p>A fire hose reel system is not required to be provided unless internal fire hydrants are installed within the building.</p> <p>Should internal hydrants be required, fire hose reels must be provided to the basement in accordance with AS2441.</p>	Noted
E1.5: Sprinklers	A sprinkler system is not required to be provided	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.	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
		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.	
E1.8:	Fire control centres	A fire control centre is not required to be provided	N/A
E1.9:	Fire precautions during construction	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.	CRA – Refer Annexure C
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)	<u>Class 3 parts</u> 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. <u>Class 7a buildings</u> 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/NZS 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 a special hazard	N/A
SPECIFICATION E2.2a – SMOKE DETECTION AND ALARM SYSTEM			
1.	Scope	Noted	-
2.	Type of system	As the Class 3 is less than 2 storeys above the ground it is noted that the building can be provided with a combined Clause 3 and 4 system.	Noted
3.	Smoke alarm system	Smoke alarms are required to be installed within each of the tenancies in accordance with this clause. The smoke alarms must be hardwired and comply with AS3786.	CRA – Refer Annexure C
4.	Smoke detection system	Smoke detectors are required to be installed throughout the common area in accordance with this clause. The detectors must be installed in accordance with AS1670.1 and must activate the building occupant warning system in accordance with Clause 6.	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
5.	Smoke detection for smoke control system	There are no other smoke control systems proposed or required within the building	N/A
6.	Building occupant warning system	The building is required to be provided with a building occupant warning system in accordance with this clause.	CRA – Refer Annexure C
7.	System Monitoring	As the Class 3 is less than 2 storeys above the ground it is noted that system monitoring is not required to be provided.	N/A
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	A stretcher facility is not required to be provided due to the lift serving two storeys	N/A
E3.3:	Warning against use of lifts in fire	Warning signs indicating “DO NOT USE LIFTS IF THERE IS A FIRE” shall be displayed near every call button for a passenger lift or group of lifts throughout a building as per E3.3.	CRA – Refer Annexure C
E3.4:	Emergency lifts	An emergency lift is not required to be provided	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.	CRA – Refer Annexure C
E3.7:	Fire service controls	The building does not have an effective height over 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 building does not have an effective height over 12m	N/A
E3.10:	Lift car service drive control switch	The building does not have an effective height over 12m	N/A
SPECIFICATION E3.1 – LIFT INSTALLATIONS			
1.	Scope	Noted	-
2.	Lift cars exposed	The lift is required to be provided in accordance with this clause.	CRA – Refer Annexure C
3.	Lift car emergency lighting	Emergency lighting is required to be provided in accordance with this clause	CRA – Refer Annexure C
4.	Cooling of lift shaft	The lift shaft must be cooled in accordance with this clause	CRA – Refer Annexure C
5.	Lift foyer access	Lift access must be provided in accordance with this clause	CRA – Refer Annexure C
6.	Emergency access doors in a single enclosed lift shaft	Emergency access doors are required to be provide in accordance with this clause	CRA – Refer Annexure C
PART E4 – VISIBILITY IN AN EMERGENCY, EXIT SIGNS AND WARNING SYSTEMS			

SECTION E: SERVICES AND EQUIPMENT			
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 2293.1-2005.	CRA – Refer Annexure C
E4.3:	Measurement of distance	Informational	Noted
E4.4:	Design and operation of emergency lighting	The emergency lighting system must comply with AS 2293.1-2005.	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	Informational	Noted
E4.8:	Design and operation of exit signs	Exit signs must comply with AS 2293.1-2005 and be clearly visible at all times when the building is occupied.	CRA – Refer Annexure C
E4.9:	Sound systems and intercom systems for emergency purposes	Not applicable due to the rise in storeys.	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.	Noted
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

SECTION F: HEALTH AND AMENITY			
F1.11:	Provision of floor wastes	The 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 will be a slab on the ground.	CRA – Refer Annexure C
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 is provided with sanitary facilities; a kitchen sink and facility for the preparation and cooking of food.	Complies
F2.2:	Calculation of number of occupants and facilities	Informational	Noted
F2.3:	Facilities in Class 3 to 9 buildings (including Table F2.3)	It has been advised that the building will have a manager who lives on the site within Unit 17. The manager will be in charge of the maintained, cleaning and the managing of the site. This will then allow the Manager to use their own facility. In addition there is a standalone sanitary facility located in the basement for the use of other employees and contractors.	Complies
F2.4:	Accessible sanitary facilities (including Table F2.4)	The accessible sanitary facilities have been assessed under the separate access assessment report	Noted
F2.5:	Construction of sanitary compartments	a) 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
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 noted that there is 3000mm provided between the top of the slabs on the residential levels. It is considered that this would be enough room to allow for compliance to be achieved. Within the car park, it is measured that 2400mm is provided between the slabs, this will allow for compliant head clearance to be maintained.	CRA – Refer Annexure C
PART F4 – LIGHT AND VENTILATION			
F4.0:	Deemed-to-Satisfy Provisions	Informational	Noted

SECTION F: HEALTH AND AMENITY			
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 sole occupancy unit is provided with a single opening at one end of the room to provide the natural lighting. 10% of the floor area is provided in lighting due to the large glazed openings at the end of the unit. It is considered that sufficient lighting will be made available via these openings.	CRA – Refer Annexure C
F4.3:	Natural light borrowed from adjoining room	As the sole occupancy unit is one larger room it is noted that the light will be borrowed throughout the entire unit.	CRA – Refer Annexure C
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 sole occupancy unit is provided with a single opening at one end of the room to provide the natural ventilation. 5% of the floor area is provided in ventilation due to the large glazed openings at the end of the unit. It is considered that sufficient ventilation will be made available via these openings. However it is noted that natural ventilation would not be made available to the sanitary facilities.	CRA – Refer Annexure C
F4.7:	Ventilation borrowed from adjoining room	As the sole occupancy unit is one larger room it is noted that the ventilation will be borrowed throughout the entire unit.	CRA – Refer Annexure C
F4.8:	Restriction on position of water closets and urinals	Due to the location, it is noted that the sanitary compartments will be provided with mechanical ventilation	Noted
F4.9:	Airlocks	Due to the location, it is noted that the sanitary compartments will be provided with mechanical ventilation	Noted
F4.11:	Carparks	The carpark must have: <ul style="list-style-type: none"> 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	There are no commercial kitchens proposed	N/A
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	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY		
	(b) comply with Specification F5.2.	
F5.3: Determination of impact sound insulation ratings	<p>(a) A floor in a building required to have an impact sound insulation rating must—</p> <ul style="list-style-type: none"> (i) have the required value for weighted normalised impact sound pressure level with spectrum adaptation term ($L_{n,w} + C_1$) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or (ii) comply with Specification F5.2. <p>(b) A wall in a building required to have an impact sound insulation rating must be of discontinuous construction; and</p> <p>(c) For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and</p> <ul style="list-style-type: none"> (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. 	CRA – Refer Annexure C
F5.4: Sound insulation rating of floors	<p>A floor in a Class 3 building must achieve an $R_w + C_{tr}$ (airborne) not less than 50, and an $L_{n,w} + C_1$ (impact) not more than 62, if separating:</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • A wall in a Class 3 building must: <ul style="list-style-type: none"> (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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> (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: <ul style="list-style-type: none"> (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, 	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY		
		public lobby or the like must be provided with a door assembly that has an Rw not less than 30.
F5.6:	Sound insulation rating of services	If a soil or waste pipe passes through more than one unit the pipe must be separated from the rooms with construction that has a Rw + Ctr (airborne) not less than 40 if adjacent to a habitable room (other than a kitchen), or 25 if adjacent to a kitchen or other room.
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.
SPECIFICATION F5.2 – SOUND INSULATION FOR BUILDING ELEMENTS		
1.	Scope	Noted
2.	Construction Deemed-to-Satisfy	Information only.
SPECIFICATION F5.5 – IMPACT SOUND – TEST OF EQUIVALENCE		
1.	Scope	Noted
2.	Construction to be Tested	Information only.
3.	Method	Information only.

SECTION G: ANCILLARY PROVISIONS		
PART G5 – CONSTRUCTION IN BUSHFIRE PRONE AREAS		
G5.0:	Deemed-to-Satisfy Provisions	Noted
G5.1:	Application of Part	Noted
NSW G5.2:	Protection	This building is required to be protected in accordance with AS3959 and the Bushfire Report prepared by Bushfire Consultancy Australia Report No. 60Bin-02 dated 25/1/2018.

SECTION I: MAINTENANCE		
PART I1 – EQUIPMENT AND SAFETY INSTALLATIONS		
This Part has been deleted in BCA2016.		

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)		
PART J0 – ENERGY EFFICIENCY		
J0.1:	Application of Section J	Informational
J0.2:	Heating & cooling loads of SOU's to Class 2 & 4 parts	Not applicable
J0.3:	Ceiling fans	Not applicable
PART J1 – BUILDING FABRIC		
J1.0:	Deemed-to-Satisfy Provisions	Informational
J1.1:	Application of Part	This part is not applicable to the carpark.

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)			
PART J2 – GLAZING			
J2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J2.1:	Application of Part	This part is not applicable to the carpark.	NA
PART J3 – BUILDING SEALING			
J3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J3.0:	Application of Part	This part is not applicable to the carpark.	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 systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.3:	Mechanical ventilation systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.4:	Miscellaneous exhaust systems	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 to comply with this clause, design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.3:	Interior artificial lighting and power control	Lighting controls are to be in accordance with this clause, which sets requirements on location of switching and sets limits on floor areas controlled by a switch.	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.	CRA – Refer Annexure C
J6.5:	Artificial lighting around the perimeter of a building	Perimeter lighting is to be controlled by a daylight sensor or time switch and where it exceeds 100W have an average light source density of 60 Lumens/W or be controlled by a motion sensor complying with Specification J6.	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 Specification J6.	CRA – Refer Annexure C
PART J7 – HEATED WATER SUPPLY			
J7.0:	Deemed-to-Satisfy Provisions	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			

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)			
J8.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J8.1:	Application of Part	Informational	Noted
J8.3:	Facilities for energy monitoring	<ul style="list-style-type: none"> • A building with a floor area of more than 500m² must have an energy monitoring facility to record the consumption of gas and electricity. • A building with a floor area of more than 2,500m² must have the facility to record, individually the energy consumption of: <ul style="list-style-type: none"> – 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 travelators where there is more than one serving the building; and – other ancillary plant. 	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 3)			
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
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 <i>envelope</i> 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
J1.3:	Roof and ceiling construction	<ol style="list-style-type: none"> a) Roof and ceiling construction must achieve the Total R-Value specified in BCA Table J1.3a for the direction of heat flow. b) For compliance with Table J1.3a, roof and ceiling construction is deemed to have the thermal properties listed in Specification J1.3. c) Where, for operational or safety reasons associated with exhaust fans, flues or recessed down lights, the area of required ceiling insulation is reduced, the loss of insulation must be compensated for by increasing the R-Value of the insulation in the remainder of the ceiling in accordance with Table J1.3b. d) A roof that: 	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 3)		
	<ul style="list-style-type: none"> (i) is required to achieve a minimum Total R-Value; and (ii) has metal sheet roofing fixed to metal purlins, metal rafters or metal battens; and (iii) does not have a ceiling lining or has a ceiling lining fixed directly to those metal purlins, metal rafters or metal battens (see Specification J1.3 Figure 2(c) and (f)), <p>must have a thermal break, consisting of a material with an R-Value of not less than R0.2, installed between the metal sheet roofing and its supporting metal purlins, metal rafters or metal battens.</p>	
J1.4: Roof lights	No roof lights have been proposed	N/A
J1.5: Walls	<ul style="list-style-type: none"> a) Each part of an external wall that is part of the <i>envelope</i> must satisfy one of the options in Table J1.5a except for: <ul style="list-style-type: none"> (i) opaque non-glazed openings in external walls such as doors, vents, penetrations, shutters and the like; and (ii) glazing. b) Any wall other than an external wall that is part of the <i>envelope</i> must achieve the Total R-Value in Table J1.5b. c) A wall that: <ul style="list-style-type: none"> (i) is required to achieve a minimum Total R-Value; and (ii) has lightweight external cladding such as weatherboards, fibre cement or metal sheeting fixed to a metal frame; and (iii) does not have a wall lining or has a wall lining fixed directly to the same metal frame, <p>must have a thermal break, consisting of a material with an R-Value of not less than R0.2, installed between the external cladding and the metal frame.</p> d) For compliance with Table J1.5a and Table J1.5b, wall construction is deemed to have the thermal properties listed in Specification J1.5. 	CRA – Refer Annexure C
J1.6: Floors	<ul style="list-style-type: none"> a) A floor that is part of the <i>envelope</i> of a building, including a floor above or below a carpark or plant room: <ul style="list-style-type: none"> (i) must achieve the Total R-Value specified in Table J1.6; and (ii) with an in-slab heating or cooling system, must be insulated around the vertical edge of its perimeter with insulation having an R-Value of not less than 1.0. b) The minimum Total R-Value required in (a) may be reduced by R0.5 provided R0.75 is added to the Total R-Value required for the roof and ceiling construction. 	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 3)			
		<p>c) A concrete slab-on-ground with an in-slab heating or cooling system must have insulation installed around the vertical edge of its perimeter.</p> <p>d) Insulation required by (c) must–</p> <ul style="list-style-type: none"> (i) have an R-Value of not less than 1.0; and (ii) be water resistant; and (iii) be continuous from the adjacent finished ground level– <ul style="list-style-type: none"> A. to a depth of not less than 300 mm; or B. for the full depth of the vertical edge of the concrete slab-on-ground. <p>e) Floor construction is deemed to have the thermal properties listed in Specification J1.6.</p>	
PART J2 – GLAZING			
J2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J2.1:	Application of Part	This part applies to all glazing located in the <i>envelope</i> of the building.	Noted
J2.4:	Glazing	Glazing to comply with this clause, it is noted that this assessment does not include an assessment with the glazing calculator.	CRA – Refer Annexure C
J2.5:	Shading	Shading where required by Clause J2.4, must comply with BCA Clause J2.5.	CRA – Refer Annexure C
PART J3 – BUILDING SEALING			
J3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J3.1:	Application of Part	<p>The requirements of this Part apply to elements forming the <i>envelope</i> of the building other than:</p> <ul style="list-style-type: none"> • a building in a climate zones 1, 2, 3 and 5 where the only means of air-conditioning is by using an evaporative cooler; • a permanent building opening necessary for the safe operation of a gas appliance; • a building or part where mechanical ventilation required by part f4 provides sufficient pressurization to prevent infiltration; • parts of buildings 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
J3.3:	Roof lights	No roof lights have been proposed	N/A
J3.4:	External windows and doors	<ul style="list-style-type: none"> • A seal to restrict air infiltration must be fitted to each edge of a door, openable window or the like forming part of: <ul style="list-style-type: none"> – the <i>envelope</i> of a conditioned space; or – the external fabric of a habitable room or public area. 	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 3)			
	<ul style="list-style-type: none"> • The above does not apply to: <ul style="list-style-type: none"> – a window complying with AS 2047; or – a fire door or smoke door; or – a roller shutter door, roller shutter grille or other security device. • For the bottom edge of external swing doors, the seal must be a draft protection device and may otherwise be a foam or rubber compression strip, fibrous seal or the like. • 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– <ul style="list-style-type: none"> (i) where the conditioned space has a floor area of not more than 50m²; or (ii) where a café, restaurant, open front shop or the like has– <ul style="list-style-type: none"> 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 front shop or the like, self-closing doors. 		
J3.5:	Exhaust fans	The exhaust fans to the sanitary facilities and any other miscellaneous exhaust fans to other conditioned spaces, are to be pre-fitted with a sealing device, such as a self-closing damper of the like.	CRA – Refer Annexure C
J3.6:	Construction of roofs, 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 caulking, skirting, architraves, cornices or the like.	CRA – Refer Annexure C
J3.7:	Evaporative Coolers	Where provided an evaporative cooler is to be fitted with a self-closing damper in accordance with this clause.	CRA – Refer Annexure C
PART J5 – AIR CONDITIONING AND VENTILATION SYSTEMS			
J5.0:	Deemed-to-Satisfy Provisions	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 systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.4:	Miscellaneous exhaust systems	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 3)		
J6.2: Artificial lighting	Artificial lighting must comply with 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: Artificial lighting around the perimeter of a building	Artificial lighting around the perimeter of a building must be controlled by 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
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	No swimming pool is proposed	N/A
J7.4: Spa pool heating and pumping	No spa pool is 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	<ul style="list-style-type: none"> A building with a floor area of more than 500m² must have an energy monitoring facility to record the consumption of gas and electricity 	CRA – Refer Annexure C

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 the structural elements for the proposed works have been designed in accordance with Table 5 of Specification C1.1 of BCA2016 for a building of Type C Construction.
2. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2016.
3. Materials, floor and wall linings/coverings, surface finished and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C1.10 and Specification C1.10 of BCA2016.
4. Floors separating storeys of different classifications will comply with BCA Clause C2.9 of BCA2016.
5. Equipment will be separated in accordance with Clause C2.12 of BCA2016.
6. 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 BCA2016.
7. The public corridors will be divided into intervals of not more than 40m in length with smoke proof walls in accordance with Clause C2.14, and Clause 2 of Specification C2.5 of BCA2016.
8. 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 BCA2016.
9. 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.
10. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C3.11 of BCA2016.
11. 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 BCA2016.
12. 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 BCA2016.
13. All attachments to the external façade of the building will be of anon-combustible material, or a combustible material in accordance with Clause 2.4 of Specification C1.1 of BCA2016.
14. 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 BCA2016.
15. Smoke doors will be constructed so smoke will not pass from one side of the doorway to the other in accordance with Specification C3.4 of BCA2016.

16. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2016.
17. Discharge from exits will be in accordance with Clause D1.10 of BCA2016.
18. Access to the lift pit will be in accordance with Clause D1.17 of BCA2016.
19. The stairway within the fire-isolated shaft is to be non-combustible, and if there is a local failure not cause structural damage or impair the fire resistance of the shaft, in accordance with Clause D2.2 of BCA2016.
20. The non-fire isolated stairs will be constructed in accordance with Clause D2.3 of BCA2016.
21. The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2016 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.
22. New pedestrian ramps will comply with AS1428.1-2009, Clause D2.10 and Part D3 of BCA2016. The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.
23. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2016. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.
24. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2016. 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.
25. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2016.
26. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2016.
27. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 of BCA2016.
28. Signage will be provided on fire and smoke doors in accordance with Clause D2.23 of BCA2016.
29. The openable portion of a window in a 9b early childhood centre or a bedroom of a Class 3 building must 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 BCA2016. 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 must be installed to the openable window.
30. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2016.
31. Non-illuminated exit signage will be installed in accordance with Clause E4.7, and of BCA2016.
32. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2016 and AS 4654 Parts 1 & 2.
33. The new roof covering will be in accordance with Clause F1.5 of BCA2016.
34. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2016.
35. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2016 and AS3740.

36. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2016.
37. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F1.11 of BCA2016.
38. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2016 and AS1288 / AS2047.
39. 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 BCA2016.
40. Accessible sanitary facilities will be provided in the building in accordance with Clause F2.4, Table F2.4 (a) of BCA2016 and AS1428.1-2009.
41. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2016.
42. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2016.
43. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2016.
44. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2016.
45. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2016.
46. The carpark will be provided with an adequate system of permanent natural or mechanical ventilation in accordance with Clause F4.11 of BCA2016.
47. The construction of the residential portions of the development will be undertaken in accordance with the relevant BASIX commitments that form part of the Development Consent approval.
48. 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.
49. Building Fabric and Thermal Construction will be in accordance with Part J1 of BCA2016.
50. Glazing will be in accordance with Part J2 of BCA2016.
51. Building sealing will be in accordance with Part J3 of BCA2016.
52. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2016.
53. Compliance with the recommendations of the Bushfire Report prepared by Bushfire Consultancy Australia Report No. 60Bin-02 dated 25/1/2018.

Electrical Services Design Certification:

54. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2016.
55. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2016 and AS2293.1.
56. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2016 and AS2293.1.
57. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2016 and AS/NZS 1680.0.
58. Lighting power and controls will be installed in accordance with Part J6 of BCA2016.

Hydraulic Services Design Certification:

59. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2016 and ASNZS3500.3

60. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2016 and AS2419.1 as required.
61. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2016 and AS2441.
62. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2016 and AS2444.
63. The heated water supply systems will be designed and installed to NCC Volume 3 – Plumbing code and Clause J7.2 of BCA2016.

Mechanical Services Design Certification:

64. 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 BCA2016, and AS/NZS 1668.1.
65. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2016 and AS1668.2.
66. The car park will be ventilated in accordance with Clause F4.11 of BCA2016 and where not naturally ventilated it will be mechanically ventilated in accordance with AS1668.2 as applicable.
67. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J5 of BCA2016.

Structural Engineers Design Certification:

68. The material and forms of construction for the proposed works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2016 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.
69. The FRL's of the structural elements for the proposed works have been designed in accordance with Table 5 of Specification C1.1 of BCA2016 for a building of Type C Construction.
70. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2016.
71. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2016 to reinstate the FRL of the element concerned.
72. The concrete panel external walls will be in accordance with Specification C1.11 of BCA2016.
73. 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 BCA2016 for the fire isolated stairs.

Lift Services Design Certification:

74. Warning signage in accordance with Clause E3.3 of BCA2016 will be provided to the lifts to advise not to use the lifts in a fire.
75. Access and egress to the lift well landings will comply with the Deemed-to-Satisfy Provisions of D3 of the BCA2016, and will be suitable to accommodate disabled persons.

76. 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 BCA2016.
77. The lifts will comply with AS1735.12 in accordance with Clause E3.6 of BCA2016.
78. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification E3.1 of BCA2016.

Acoustic Services Design Certification:

79. The sound transmission and insulation of the residential portions of the development will comply with Part F5 of BCA2016.