BCA LOGIC

Building Regulation, BCA,
Fire, Access and Energy Consultants

To:	Mono Constructions
Project:	56 Beane Street, Gosford
Report:	BCA Assessment Report
Reference No:	110903-BCA-r1
Date:	17 December 2019
Client Contact:	George Mourad
Email:	george.mourad@monoconstructions.com.au
From:	Sarita Ellison
Direct:	02 8484 4066
Email:	sellison@bcalogic.com.au

DOCUMENT CONTROL

Revision	Date	Description	
110903-BCA-r1	17/12/19	Preliminary BCA Assessment Report	
		Prepared by	Verified by
		Sarita Ellison Accredited Certifier Grade A1, No. BPB 0736 Senior Building Regulations Consultant	Matthew McNamara Accredited Certifier Grade A1, No. BPB 0263 Manager of Building Regulations
			

Table of Contents

1 BASIS OF ASSESSMENT

1.1 Location and Description

The building development, the subject of this report, is located at 56 Beane Street, Gosford and is on the corner of Beane Street and Gertrude Street. The development involves the construction of a residential flat building containing seven levels of residential units and one level of carpark.

Vehicular access to the building is from Gertrude Street.

1.2 Purpose

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

1.3 Building Code of Australia

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

1.4 Limitations

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

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

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

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

This report does not include, or imply compliance with:

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

(b) the deemed to satisfy provisions of Part D3 and F2.4 of BCA2019 – refer to report by separate Access Consultant;

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

(d) Work Health and Safety Act 2011;

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

(f) 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

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

1.5 Design Documentation

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

1.6 Definitions

Deemed-to-Satisfy Provisions

Deemed-to-Satisfy Provisions means provisions which are deemed to satisfy the Performance Requirements.

Designated bushfire prone area

Designated bushfire prone area means land which has been designated under a power of legislation as being subject, or likely to be subject, to bushfires.

Effective height

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

Exit

Exit means–

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

  (i) An internal or external stairway.

  (ii) A ramp.

  (iii) A fire-isolated passageway.

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

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

Fire compartment

Fire compartment means—

(a) the total space of a building; or

(b) when referred to in—

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

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

Fire-resistance level (FRL)

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

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order.

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

Fire-source feature

Fire-source feature means—

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

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

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

Non-combustible

Non-combustible means—

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

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

Performance Requirement

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

Performance Solution

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

Sole-occupancy unit

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

(a) a dwelling; or

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

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

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

2 BUILDING DESCRIPTION

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

2.1 Rise in Storeys (Clause C1.2)

The building has a rise in storeys of eight (8).

2.2 Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
2	Levels 1 to 7	Residential
7a	Lower ground level	Carpark

2.3 Effective Height (Clause A1.0)

The building has an effective height of more than 12 metres and less than 25 metres.

2.4 Type of Construction Required (Table C1.1)

The building is required to be of Type A Construction.

2.5 Fire Compartments

The following fire compartments have been assumed:

1. Each level of the building will be a separate fire compartment.

2.6 Exits

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

(a) Fire fire exit stair form the lower ground level carpark to ground level

(b) The swing door opening from the lower ground level carpark to the external

(c) The main doors of the entrance lobby at level 1

(d) The door from the ground floor storage room to the external at level 1

(e) The fire stair serving level 2 to 7

2.7 Climate Zone (Clause A1.0)

The building is located within Climate Zone 5.

2.8 Location of Fire-source features

The fire source features for the subject development are:

North: The rear allotment boundary (6m)

South: The far boundary of Beane Street (> 6m)

East: The far boundary of Gertrude Street (> 6m)

West: The side allotment boundary (7m)

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.	Fire doors	**BCA2019 C3.8** (Openings in Fire Isolated Exits) **BCA2019 C3.10** (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 **BCA2019 C3.11** (Bounding Construction) Spec C3.4 AS1905.1: 2015 & ***Fire Engineering Report****
2.	Fire seals protecting openings in fire resisting components of the building	**BCA2019 C3.15** (Openings for service installations) **BCA2019 Spec C3.15** AS1530.4:2014 & AS4072.1-2005
General		
3.	Portable fire extinguishers	**BCA2019 E1.6** AS2444–2001
General - Egress		
4.	Path of travel for stairways, passageway and ramps	EP&A Reg. 2000 Clauses 184-186
5.	Warning & operational signs	**BCA2019 D2.23** (Signs on Fire Doors) **BCA2019 D3.6** (Braille Exit Signs) (Note: E4.5 (Exit Signs)) **BCA2019 E3.3** (Lift Signs),
Lifts		
6.	Stretcher Lifts including • Fire Service Controls • Recall Operation • Drive control switch	**BCA2019 E3.2** **BCA2019 E3.7** (Fire Service Controls) **BCA2019 E3.9** (Fire Service Recall Operation Switch)

Item	Essential Fire and Other Safety Measures	Standard of Performance
		BCA2019 E3.10 (Lift Car Fire Service drive control switch) **BCA2019 Spec E3.1** AS1735.11-1986 (Fire rated landing doors)
Electrical Services		
7.	Automatic fire detection & alarm system	**BCA2019 E2.2**, NSW Table E2.2a, **Spec E2.2a** AS3786:2014 (Amdt 1-4) AS1670.1:2018
8.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1 –2018
9.	Exit signs	**BCA2019 E4.5** (Exit Signs) **BCA2019 E4.6** (Direction Signs) **BCA2019 E4.7** (Residential Concession) **BCA2019 E4.8** (Design and Operation - Exits) AS/NZS 2293.1 –2018
10.	System Monitoring	**BCA2019 E2.2 , Table E2.2a,Spec E2.2a** AS1670.3-2018 (Monitoring Required for Sprinkler System)
Hydraulic Services		
11.	Automatic fire suppression systems	**BCA2019 E1.5** **BCA2019 Spec. E1.5 & Spec. E1.5a** AS2118.1–2017 (Sprinklers)
12.	Fire hydrant system	**BCA2019 E1.3** AS2419.1–2005 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, ‘Compatible Hose Connections’
13.	Hose reel system (to carpark)	**BCA2019 E1.4** AS2441–2005
Performance Solutions		
***Fire Engineering Report to be prepared under separate cover**		

4 FIRE RESISTANCE LEVELS

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

Type A Construction

Table 3. Type A Construction

Item	Class 2	Class 7a*
Loadbearing External Walls (including columns and other building elements incorporated therein) • 3m or more from a *fire source feature*	90/60/30	120/60/30
External Columns • Loadbearing	90/-/-	120/-/-
Stair and Lift Shafts required to be fire-resisting • Loadbearing • Non-loadbearing	90/90/90 -/90/90	120/120/120 -/120/120
Internal walls bounding *sole occupancy units* • Loadbearing • Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: • Loadbearing • Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-
Ventilating, pipe, garbage and like shafts: • Loadbearing • Non-loadbearing	90/90/90 -/90/90	120/90/90 -/90/90
Other loadbearing internal walls, beams trusses and columns	90/-/-	120/-/-
Floors	90/90/90	120/120/120

N.B. The roof need not comply with any FRL's due to the concession provided by Clause 3.5 of Specification C1.1.

*Reduced FRLs in accordance with Table 3.9 of BCA Specification C1.1, may be applied within the lower ground floor parts used for car parking.

5 MATTERS FOR FURTHER CONSIDERATION

5.1 General

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

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

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

5.2 Dimensions and Tolerances

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

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

5.3 Performance Based Design – Performance Solutions

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

Table 4. Performance Solutions

Item	Description of Performance Solution	DTS Provision
1.	The fire stairs serving the residential levels will discharge into a fire-rated the lobby at ground level, provided with two alternative egress routes to open space.	D1.7
2.	The fire hydrant booster assembly will be located on the eastern side of the building facing Gertrude Street and will therefore not be within sight of the main entry to the building.	E1.3
3.	The construction of the roof and external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	No DtS Provisions – FP1.4 Performance Provisions Only

5.4 Vertical separation of openings in external walls – BCA Clause C2.6

BCA Clause C2.6 requires separation of openings in the external walls between consecutive storeys by either a fire-rated spandrel or slab projection, however will not be applicable if the building is provided with an AS 2118.1-2017 compliant sprinkler system throughout.

As separation of openings in external walls by fire-rated spandrels or slab protections in accordance with Clause C2.6 has not been provided in the design, it is recommended that an AS 2118.1-2017 compliant sprinkler system be provided throughout the building.

5.5 Fire hydrant locations – BCA Clause E1.3

The fire hydrants located on the mid landings of the stairway serving the residential levels are not required and should be removed from the plans. A fire hydrant is located at each level of the residential stair at the level the hydrant serves, as required by AS 2419.1-2005.

A fire hydrant is required within the fire stair at carpark level.

5.6 Sprinkler system – BCA Clause E1.5

The building must be provided with a sprinkler system complying with Table E1.5 and Specification E1.5 installed throughout. The sprinkler valve room or enclosure must be indicated on the plans. The room or enclosure must have direct egress to road or open space.

5.7 Stretcher facility in lifts – BCA Clause E3.2

A stretcher facility must be provided in at least one passenger lift as the lifts serve an effective height of more than 12m. A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above floor level. The current lifts appear to not be of sufficient depth to accommodate a 2m long stretcher.

5.8 Weatherproofing of doorways – BCA Clause F1.4

It is noted that the plans do not indicated a stepdown between internal areas and associated balconies. Further detail is to be provided of how compliance with AS4654.2 will be achieved to prevent water ingress.

Note: the lack of stepdown will also impact on the weatherproofing of the external wall and will need to be considered within the FP1.4 Performance Solution as listed in Part 5.3.1 of this report.

5.9 Construction on bushfire prone land – BCA NSW Clause G5.2

In a designated bushfire prone area (refer to Council maps) a Class 2 building must comply with the following—

(a) AS 3959 except—

(i) as amended by Planning for Bush Fire Protection; and

(ii) for Section 9 Construction for Bushfire Attack Level FZ (BAL-FZ). Buildings subject to BAL-FZ must comply with specific conditions of development consent for construction at this level; or

(b) the requirements of (a) above as modified by the development consent following consultation with the NSW Rural Fire Service under section 4.14 of the Environmental Planning and Assessment Act 1979 if required.

6 STATEMENT OF COMPLIANCE

The architectural design documentation as referred to in 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, subject to resolution of the matters identified in Part 5 above.

ANNEXURE A - DESIGN DOCUMENTATION

This report has been based on the following design documentation.

Table 5. Architectural Plans

Architectural Plans Prepared by Stanton Dahl Architects			
Drawing Number	**Revision**	**Date**	**Title**
A000	01	26/11/19	COVER SHEET
A001	01	26/11/19	PERSPECTIVE IMAGES (1 OF 2)
A002	01	26/11/19	PERSPECTIVE IMAGES (2 OF 2)
A003	01	26/11/19	SITE & BLOCK ANALYSIS
A004	01	26/11/19	BUILDING ENVELOPE DIAGRAM
A005	01	26/11/19	SITE & EXTERNAL WORKS PLAN
A006	01	26/11/19	DEVELOPMENT DATA
A007	01	26/11/19	LOWER GROUND CAR PARK PLAN
A008	01	26/11/19	FLOOR PLAN (LEVEL 1)
A009	01	26/11/19	TYPICAL FLOOR PLAN (LEVEL 2-4)
A010	01	26/11/19	TYPICAL FLOOR PLAN (LEVEL 5-7)
A011	01	26/11/19	ROOF PLAN
A012	01	26/11/19	ELEVATION (SHT 1 OF 4)
A013	01	26/11/19	ELEVATION (SHT 2 OF 4)
A014	01	26/11/19	ELEVATION (SHT 3 OF 4)
A015	01	26/11/19	ELEVATION (SHT 4 OF 4)
A016	01	26/11/19	SECTION (SHT 1 OF 2)
A017	01	26/11/19	SECTION (SHT 2 OF 2)

ANNEXURE B - DETAILED BCA 2019 ASSESSMENT

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

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

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

N/A	Not Applicable. The Deemed-to-Satisfy clause is not applicable to the proposed design.
Complies	The relevant provisions of the Deemed-to-Satisfy clause have been satisfied by the proposed design.
CRA	'COMPLIANCE READILY ACHIEVABLE'. It is considered that there 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 6. Deemed to Satisfy Clause Assessment

Clause	Comment	Status
SECTION B: STRUCTURE		
PART B1 – STRUCTURAL PROVISIONS		
B1.0: Deemed-to-Satisfy Provisions	Informational	Noted
B1.1: Resistance to actions	The resistance of the building must be greater than the most critical action effect resulting from different combinations of actions, where the most critical action has been determined in accordance with this Part – Structural Engineer to certify at CC stage.	CRA – Refer Annexure C
B1.2: Determination of individual actions	The magnitude of actions must be determined in accordance with this Clause – Structural Engineer to certify at CC stage.	CRA – Refer Annexure C
B1.4: Determination of structural resistance of materials and forms of construction	The structural resistance of materials and forms of construction must be determined in accordance with this Clause – Structural Engineer, Architect and Manufacturers to certify at CC stage.	CRA – Refer Annexure C
B1.5 Structural software	Structural software used in computer aided design of a building or structure within the geometrical limits of (b) of this Clause must comply with the ABCB Protocol for Structural Software. Structural Engineer to certify.	CRA – Refer Annexure C
B1.6 Construction of buildings in flood hazard areas	Not applicable	NA
SECTION C: FIRE RESISTANCE		
PART C1 – FIRE RESISTANCE AND STABILITY		
C1.0: Deemed-to-Satisfy Provisions	Informational	Noted
C1.1: Type of construction required	The building is required to be of Type A Construction. Refer to Specification C1.1 requirements at the end of this Section.	CRA – Refer Annexure C
C1.2: Calculation of rise in storeys	The building has a rise in storeys of eight (8).	Noted
C1.3: Buildings of multiple classification	Informational	Noted
C1.4: Mixed Types of construction	Not applicable	NA
C1.5: Two Storey Class 2, 3 or 9c buildings	Not applicable	NA
C1.6: Class 4 Parts of building	Not applicable	NA
C1.7: Open spectator stands and indoor sports stadium	Not applicable	NA
C1.8: Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8.	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
C1.9: Non-combustible building elements	(a) The following building elements and their components must be non-combustible: (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (ii) The flooring and floor framing of lift pits. (iii)Non-loadbearing internal walls where they are required to be fire-resisting. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction. (c) A loadbearing internal wall including those that are part of a loadbearing shaft, must comply with Specification C1.1. (d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants, termite management systems, Glass including laminated glass, thermal breaks associated with glazing systems and damp-proof courses. (e) The following materials, may be used wherever a non-combustible material is required: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet. (iv) Fibre-reinforced cement sheeting. (v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. (vi) Sarking-type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5. (vii) Bonded laminated materials where— (A) each lamina, including any core, is non-combustible; and (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and (C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively. This clause also prohibits the use of in situ formwork containing combustible elements including PVC lined	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	formwork products where the PVC lining remains in place for the life of the building. Where the use of such products is proposed – in all instances the material must be the subject of a site specific Performance Assessment Report.	
C1.10: Fire hazard properties	Fire hazard properties of internal linings, materials and assemblies must comply with C1.10 of the BCA and Specification C1.10, including floor, wall and ceiling linings, air-handling ductwork, lift cars, insulation, sarking-type materials and attachments, or be considered non-combustible.	CRA – Refer Annexure C
C1.11: Performance of external walls in fire	Not applicable	NA
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.	Noted
C1.13: Fire-protected timber: Concession	Not applicable	NA
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following: (a) An ancillary element that is non-combustible. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grille not more than 2 m² in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and (iii) does not extend beyond one fire compartment; and (iv) is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that— (i) meets the relevant requirements of Table 4 of Specification C1.10 as for an internal element; and (ii) serves a storey— (A) at ground level; or	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	(B) immediately above a storey at ground level; and (iii) does not serve an exit, where it would render the exit unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) A paint, lacquer or a similar finish. (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k).	
PART C2 – COMPARTMENT AND SEPARATION		
C2.0: Deemed-to-Satisfy Provisions	Informational	Noted
C2.1: Application of Part	Informational	Noted
C2.2: General floor area and volume limitations	The size of fire compartments in the building must not exceed that specified in Table C2.2.	Complies
C2.3: Large isolated buildings	Not applicable	NA
C2.4: Requirements for open spaces and vehicular access	Not applicable	NA
C2.5: Class 9a and 9c Buildings	Not applicable	NA
C2.6: Vertical separation of openings in external walls	Note: The following applies to buildings that are not provided with an AS2118.1 sprinkler system installed throughout. Where the vertical projection of an opening in an external wall falls no further than 450 mm outside an opening in the storey next below, the openings must be provided with vertical separation complying with Clause C2.6, that is: • They must be protected with a 900mm high (FRL 60/60/60) spandrel extending at least 600mm above the separating slab, or • They must be provided with a 1.1m horizontal projection (FRL 60/60/60) also extending at least 450mm either side of the openings. The above does not apply to openings within the same stairway. For the purposes of this clause, opening means that part of the external wall of a building that does not have an FRL of 60/60/60 or greater. As separation of openings in external walls by fire-rated spandrels or slab protections has not been provided, it is recommended that the required sprinkler system be an AS 2118.1-2017 compliant system so that compliance with the Clause C2.6 requirements for vertical separation of openings in external walls is not required.	FI Refer to Part 5 of Report
C2.7: Separation by fire walls	Not applicable	NA

SECTION C: FIRE RESISTANCE		
C2.8: Separation of classifications in the same storey	Not applicable	NA
C2.9: Separation of classifications in different storeys	Floors separating storeys of different classifications must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey. The floor slab separating the lower ground floor from level one must achieve an FRL of not less than 120/120/120. The floor slabs separating residential levels must achieve an FRL of not less than 90/90/90.	CRA – Refer Annexure C
C2.10: Separation of lift shafts	Passenger lifts must be separated from the remainder of the building by enclosure in a fire rated shaft achieving an FRL prescribed by Table 3 of Specification C1.1.	CRA – Refer Annexure C
C2.11: Stairways and lifts in one shaft	A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft.	CRA – Refer Annexure C
C2.12: Separation of equipment	Not applicable	NA
C2.13: Electricity supply system	• A main switchboard which sustains emergency equipment operating in the emergency mode must be fire separated from any other part of the building by construction having an FRL of not less than 120/120/120 and have the doorway fitted with self-closing fire door having an FRL of not less than –/120/30. • Any electrical conductors located within the building that supply a substation or main switchboard for emergency equipment must comply with BCA clause C2.13. • Emergency equipment switchgear must be separated from non-emergency equipment switchgear by metal partitions designed to minimize the spread of a fault from the non-emergency equipment switchgear. Emergency equipment includes but is not limited to the following: – fire hydrant booster pumps; – sprinkler pumps; – hose reel pumps; and – control and indicating equipment.	CRA – Refer Annexure C
C2.14: Public corridors in Class 2 and 3 Buildings	Not applicable	NA
PART C3 – PROTECTION OF OPENINGS		
C3.0: Deemed-to-Satisfy Provisions	Informational	Noted
C3.1: Application of Part	Informational –	Note

SECTION C: FIRE RESISTANCE		
	(a) The Deemed-to-Satisfy Provisions of this Part do not apply to– (i) Control joints, weep holes and the like in external walls of masonry construction if they are not larger than necessary for the purpose; and (ii) Non-combustible ventilators for cavity ventilation, if each does not exceed 45 000 mm^2 in face area and is spaced not less than 2 m from any other ventilator in the same wall; and (iii) Openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like; and (b) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings in building elements required to be fire-resisting include doorways, windows (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL. (c) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings, other than those covered under (a)(iii), between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the building, are deemed to be openings in an external wall.	
C3.2: Protection of openings in external walls	Not applicable	NA
C3.3: Separation of external walls and associated openings in different fire compartments	Not applicable	NA
C3.4: Acceptable methods of protection	Fire doors must comply with BCA Specification C3.4.	CRA – Refer Annexure C
C3.5: Doorways in fire walls	Not applicable	NA
C3.6: Sliding fire doors	Not applicable	NA
C3.7: Protection of doorways in horizontal exits	Not applicable	NA
C3.8: Openings in fire-isolated exits	Doorways that open to fire-isolated stairways that are not doorways opening to a road or open space, must be protected by –/60/30 fire doors that are self-closing, or automatic-closing in accordance with (ii) and (iii) of Clause C3.8.	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
C3.9: Service penetrations in fire-isolated exits	The fire-isolated exits are not to be penetrated by any services **other** than: • electrical wiring associated with: – a lighting or detection system serving the exit; or – a security, surveillance or management system serving the exit; or – the monitoring of hydrant or sprinkler isolating valves. • water supply pipes for fire services.	CRA – Refer Annexure C
C3.10: Openings in fire-isolated lift shafts	• Lift landing doors are required to be fire doors with an FRL of -/60/- that comply with AS 1735.11-1986, and be set to remain closed except when discharging or receiving, passengers, goods or vehicles. • Panels in the wall of the lift shaft must be backed by construction having an FRL of not less than –/60/60 if it exceeds 35 000 mm^2 in area.	CRA – Refer Annexure C
C3.11: Bounding Construction: Class 2, 3 and 4 Buildings	The doorways between sole occupancy units and the public lobbies and any common / service rooms and the public lobbies (class 2 parts) must be protected by self–closing -/60/30 fire doors.	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	Openings in shafts must be protected by: a) if it is in a sanitary compartment – a door or panel which together with its frame, is non-combustible or has an FRL of not less than –/30/30; or b) a self-closing –/60/30 fire door or hopper; or c) an access panel having an FRL of not less than –/60/30; or d) if the shaft is a garbage shaft – a door or hopper of non-combustible construction.	CRA – Refer Annexure C
C3.15: Openings for service installations	Where services pass through an element which is required to achieve an FRL (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15.	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

SECTION C: FIRE RESISTANCE		
C3.17: Columns protected with lightweight construction to achieve an FRL	Not applicable	NA
SPECIFICATION C.1.1 – FIRE-RESISTING CONSTRUCTION		
2.0: General Requirements	Informational	Noted
2.1: Exposure to fire-source features	Informational – 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.	Noted
2.2: Fire protection for a support of another part	Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL not less than that required by other provisions of this Specification; and if located within the same fire compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	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	The method of attaching or installing a finish, lining, ancillary element or service installation to a building element must not reduce the fire-resistance of that element to below that required.	CRA – Refer Annexure C
2.5: General concessions	Structures on roofs — A non-combustible structure situated on a roof need not comply with the other provisions of this Specification if it only contains— (i) lift motor equipment; or (ii) one or more of the following: (A) Hot water or other water tanks. (B) Ventilating ductwork, ventilating fans and their motors. (C) Air-conditioning chillers. (D) Window cleaning equipment. (E) Other service units that are non-combustible and do not contain flammable or combustible liquids or gases.	CRA – Refer Annexure C
2.6: Mezzanine floors: Concession	Not applicable	NA

SECTION C: FIRE RESISTANCE			
2.7:	Enclosure of shafts	Fire-isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction having an FRL required for the walls of a non-load-bearing shaft in the same building, as per specification C1.1. This fire rating is required in two directions. The above does not apply to shafts extending beyond the roof covering, other than fire isolated stair and lift shafts and the bottom of non-combustible shafts laid directly on the ground.	CRA – Refer Annexure C
2.8:	Carparks in Class 2 and 3 Buildings	Not applicable	NA
2.9:	Residential Aged Care building: Concession	Not applicable	NA
3.0:	Type A fire-resisting construction	Refer to section 3 clauses below for Type A Construction requirements.	-
3.1:	Fire-resistance of building elements	• The FRL's of all elements are to be in accordance with the FRL's detailed in the Table contained within Part 4.0 of this report. • External walls, common walls and the flooring and floor framing of lift pits must be non-combustible. (Note: insulation and sarking used must be non-combustible) • Internal walls required to be fire rated must extend to– (i) to the underside of the floor next above; or (ii) the underside of a roof complying with Table 3; or (iii) the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements; or (iv) a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes. • Load bearing internal walls (including those part of a loadbearing shaft) and fire walls must be of concrete or masonry. • Non-loadbearing internal walls required to be fire rated, as well as non-load bearing lift, ventilating, pipe, garbage or similar shaft wall must be of non-combustible construction. **Note:** This includes non-combustible insulation. When an insulation material is not certified as non-combustible, this material will need to be the subject of a Fire Engineering Assessment at the CC stage.	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE			
3.2:	Concessions for floors	A floor need not comply with Table 3 if it is laid directly on the ground.	Noted
3.3:	Floor Loading of Class 5 and 9b buildings: Concession	Not applicable	NA
3.4:	Roof superimposed on concrete slab: Concession	Not applicable	NA
3.5:	Roof: Concession	In accordance with this clause, the roof of the Class 2 part need not comply with Table 3 as its covering is non-combustible.	Noted
3.6:	Roof lights	Not applicable – no roof lights are proposed	NA
3.7:	Internal columns and walls: Concession	In the storey immediately below the roof, internal columns and internal walls other than shaft walls may have an FRL of not less than 60/60/60.	Note
3.8:	Open spectator stands and indoor sports stadiums concession	Not applicable	NA
3.9:	Carparks	Reduced FRLs in accordance with BCA Table 3.9 of Specification C1.1, may be applied within the lower ground floor parts used for carparking in accordance with this clause.	CRA – Refer Annexure C
3.10:	Class 2 and 3 buildings Concession	Not applicable	NA

SECTION D: ACCESS AND EGRESS			
PART D1 – PROVISION FOR ESCAPE			
D1.0:	Deemed-to-Satisfy Provisions	Informational	Noted
D1.1:	Application of Part	The *Deemed-to-Satisfy Provisions* of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 building.	Noted
D1.2:	Number of exits required	Without passing through another sole-occupancy unit, every occupant of a storey or part of a storey must have access to an exit or at least 2 exit, if 2 or more are required.	Complies
D1.3:	When fire-isolated stairways and ramps are required	The exit stair connecting lower ground floor and level 1 must be fire-isolated as it serves the hydrant pump room. The exit stair serving the residential levels must be fire-isolated as it connects more than 3 consecutive storeys.	CRA – Refer Annexure C
D1.4:	Exit travel distances	<u>Class 2 residential —</u> • The entrance doorway of each sole-occupancy unit must be not more than – – 6 m from an exit or from a point from which travel in different directions to 2 exits is available; and	Refer to Spec. E1.5

SECTION D: ACCESS AND EGRESS		
	– 20 m from a single exit serving the storey at the level of egress to a road or open space; and • No point on the floor of a room which is not in a sole-occupancy unit must be more than 20 m from an exit or from a point at which travel in different directions to 2 exits is available. - Complies Note: Due to the provision of a sprinkler system, a concession is provided in BCA Specification E1.5 which permits an extended travel distance of up to 12m from the door of each sole-occupancy unit to the exit. Class 7a carpark— No point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m. - Complies	
D1.5: Distance between alternative exits	Exits that are required as alternative means of egress must be– (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than 60m apart in the Class 7a part.	Complies
D1.6: Dimensions of exits and paths of travel to exits	In a required exit or path of travel to an exit– • the unobstructed height throughout exits and paths of travel to exits must not be less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and • the unobstructed width of each exit or path of travel to an exit, except for doorways must be not less than 1m; • the unobstructed width of doorways must be not less than 750 mm, unless providing access for people with disabilities in which case the unobstructed width must be not less than 850 mm. • the required width of a stairway or ramp must be measured clear of all obstructions such as handrails. • the unobstructed width of a required exit must not diminish in the direction of travel to a road or open space.	CRA – Refer Annexure C
D1.7: Travel via fire-isolated exits	• D1.7 (a) - A doorway from a room must not open directly into a stairway that is required to be fire-isolated unless it is from –	PS Refer to Part 5 of Report

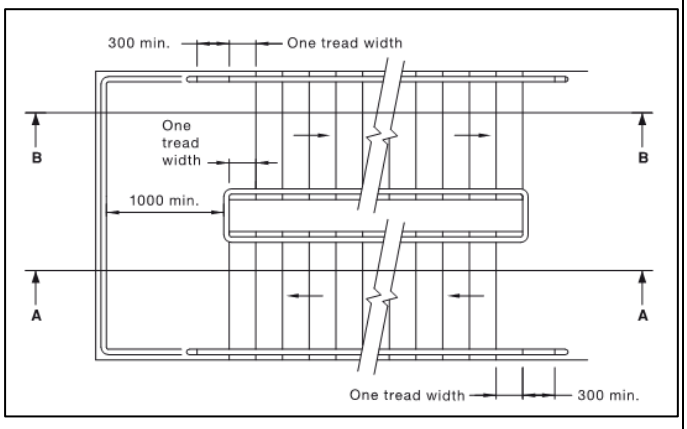
SECTION D: ACCESS AND EGRESS		
	(i) a public corridor, public lobby or the like; or (ii) a sole-occupancy unit occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. • D1.7 (b) - Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (i) to a road or open space; or (ii) to a point— (A) in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and (B) from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or (iii) into a covered area that— (A) adjoins a road or open space; (B) and is open for at least 1/3 of its perimeter; and (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and (D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m. • D1.7 (c) - Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4, for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. The following matter has been identified in relation to compliance with Clause D1.7: • The fire stairs serving the residential levels discharge into the lobby at ground level in lieu of to the external of the building or an open area. It is understood that BCA compliance is proposed to be achieved via a Performance Solution incorporating	

SECTION D: ACCESS AND EGRESS		
	a fire rated lobby at ground level with the provision of two alternative egress routes from the lobby to open space.	
D1.8: External stairways or ramps in lieu of fire-isolated exits	Not applicable	NA
D1.9: Travel by non-fire-isolated stairways or ramps	Not applicable	NA
D1.10: Discharge from exits	• If a required exit leads to open space, the path of travel to the road must have an unobstructed width of not less than 1m. • If an exit discharges to open space that is at a different level that the public road to which it is connected, the path of travel to the road must be by a ramp or other incline not steeper than 1:8, or a BCA compliant stairway.	Complies
D1.11: Horizontal exits	Not applicable	NA
D1.12: Non-required stairways, ramps or escalators	Not applicable	NA
D1.13: Number of persons accommodated	Informational	Noted
D1.14: Measurement of distances	Informational – The nearest part of an exit means in the case of— (a) a fire-isolated stairway, the nearest part of the doorway providing access to them; and (d) a doorway opening to a road or open space, the nearest part of the doorway.	Note
D1.15: Method of Measurement	Informational	Noted
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	Not applicable	NA
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	Informational– Except for D2.13, D2.14(a), D2.16, D2.17(d), D2.17 (e), D2.18 & D2.24, the deemed-to-satisfy Provisions of this Part do not apply to internal parts of the Class 2 sole-occupancy units.	Note
D2.2: Fire-isolated stairways and ramps	The fire isolated stairways must be constructed of non-combustible materials and constructed so that if there is	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	local failure it will not cause structural damage to, or impair the fire-resistance of the shaft.	
D2.3: Non-fire-isolated stairways and ramps	Not applicable	NA
D2.4: Separation of rising and descending stair flights	Complies – there is no direct connection between the stairs rising from the basement levels and the stairs from the residential levels.	Complies
D2.5: Open access ramps and balconies	Not applicable	NA
D2.6: Smoke lobbies	Not applicable	NA
D2.7: Installations in exits and paths of travel	• Access to service shafts and services other than to fire-fighting or detection equipment must not be provided from a fire-isolated stairway or fire-isolated passageway. • Gas or other fuel services must not be installed in a required exit. • Any electricity meters, distribution boards or ducts, or telecommunications distribution boards or equipment installed in corridors/hallways/lobbies or the like must be enclosed with non-combustible construction or a fire protective covering with doorways suitably sealed against smoke spread. • Electrical wiring may be installed in a fire-isolated exit if the wiring is associated with: – a lighting, detection, or pressurization system serving the exit; or – a security, surveillance or management system serving the exit; or – an intercommunication system or an audible or visual alarm system in accordance with D2.22; or – the monitoring of hydrant or sprinkler isolating valves.	CRA – Refer Annexure C
D2.8: Enclosure of space under stairs and ramps	The space under the fire-isolated stairways within the shaft must not be enclosed to form a cupboard or similar enclosed space.	Complies
D2.9: Width of stairways and ramps	Not applicable	NA
D2.10: Pedestrian ramps	The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586.	CRA – Refer Annexure C
D2.11: Fire-isolated passageways	Not applicable	NA
D2.12: Roof as open space	Roof of basement level 1 must achieve an FRL of not less than 120/120/120 as exits discharge onto it.	CRA – Refer Annexure C

<table>
<tr><th colspan="3">SECTION D: ACCESS AND EGRESS</th></tr>
<tr><td>D2.13: Goings and risers</td><td>Stairways must comply with the following:
goings must be between 250 mm and 355 mm;
risers must be between 115 mm high and 190 mm high;
the slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700;
the goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (R) are considered constant if the variation between–
(A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and
(B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm.
Risers must not contain any openings that would permit a 125 mm sphere to pass through.
each tread must have a non-slip finish or an adequate non-skid strip near the edge of the nosings;
treads must be of solid construction (not mesh or perforated) if the stairway is more than 10 m high or connects more than 3 storeys.
Treads must have a surface or nosing strip with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with AS 4586-2013 Slip resistance classification of new pedestrian surface materials.</td><td>CRA – Refer Annexure C</td></tr>
<tr><td>D2.14: Landings</td><td>Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586.
<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Condition</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr>
</table></td><td>CRA – Refer Annexure C</td></tr>
</table>

SECTION D: ACCESS AND EGRESS		
	Nosing or landing edge strip: P3 / P4	
D2.15: Thresholds	The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless– a) in a building required to be accessible, the doorway– (i) opens to a road or open space; and (ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1; or b) in other cases– (i) the doorway opens to a road or open space, external stair landing or external balcony; and (ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.	CRA – Refer Annexure C
D2.16: Barriers to prevent falls	Balustrades must be provided to stairs and balconies, driveway ramps etc where there is a fall of more than 1m. Balustrades must comply with the following: <u>Balustrade minimum heights</u> • 865 mm above stair nosings; • 865 mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length; and • 1 m in all other locations. <u>Balustrade openings – fire-isolated stairs</u> • maximum openings of 300 mm; or • where rails are used– – a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and – the opening between rails must not be more than 460 mm <u>Balustrade openings – other than fire-isolated stairs</u> • A 125 mm sphere must not be able to pass through any opening and for stairways, the 125 mm is measured above the nosing line of the stair treads.	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	Climbability – other than fire-isolated stairs For floors more than 4m above the surface beneath, the balustrade must not incorporate any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that could facilitate climbing.	
D2.17: Handrails	Handrails to stairways must: • be located along at least one side of the ramp or flight (a flight being 2 or more risers); and • located along each side if the total width of the stairway or ramp is 2m or more; and • be fixed at a height of not less than 865 mm above the nosings of the stair treads and the floor surface of the ramp, landing, or the like; and • be continuous between stair flight landings and have no obstruction that will break a hand-hold. • be constructed to comply with clause 12 of AS 1428.1 (including handrails to the fire stairs). • Handrails in common areas (other than fire stairs) must also accord with D3.3. Clause 12 of AS 1428.1-2009 A required exit (fire isolated or non-fire isolated) serving an area required to be accessible must be fitted with handrails in accordance with Clause 12 of AS1428.1. The handrail shall follow the angle of the nosings and be consistent height through the stair flight and any landings with no vertical sections at the landing. Compliance can be achieved via offset risers at the bottom of the flight in accordance with Figure 28 in AS1428.1-2009 or with larger landings to accommodate required handrail extensions.  *Figure 28 in AS1428.1-2009*	CRA – Refer Annexure C
D2.18: Fixed platforms, walkways stairways and ladders	Not applicable	NA

SECTION D: ACCESS AND EGRESS		
D2.19: Doorways and doors	Not applicable	NA
D2.20: Swinging doors	Swinging doors in a required exit must not encroach– (i) at any part of its swing by more than 500 mm on the required 1m width of the exit and (ii) when fully open, by more than 100 mm on the required 1m exit width; and the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door. A swinging door in a required exit must swing in the direction of egress unless– • it serves a building or part with a floor area not more than 200 m^2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or • it serves a sanitary compartment or airlock (in which case it may swing in either direction).	Complies
D2.21: Operation of latch	All doors in a required exit or forming part of a required exit AND doors in a path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by– (i) a single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – A. be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and B. have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm and not more than 45mm; or (ii) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor. (iii) where the latch operation device referred to in (ii) is not located on the door leaf itself— (A) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located— (aa) not less than 500 mm from an internal corner; and (bb) for a hinged door, between 1 m and 2 m from the door leaf in any position; and	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	(cc) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position. (B) braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device.	
D2.22: Re-entry from fire-isolated exits	Not applicable	NA
D2.23: Signs on doors	Signage in accordance with this clause is to be located on all fire and smoke doors stating “Fire Safety Door, Do Not Obstruct, Do Not Keep Open” and the discharge door from the fire isolated stairways are to state “Fire Safety Door – Do Not Obstruct” in capital letters not less than 20mm in height. Note: Fire signage in accordance with clause 183 of the Environmental Planning and Assessment Regulation 2000 is also required.	CRA – Refer Annexure C
D2.24: Protection of openable windows	a) Bedroom windows must be provided with protection if the floor below the window is 2m or more above the surface beneath. b) Where the lowest level of the window opening is less than 1.7m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with– A. a device to restrict the window opening; or B. a screen with secure fittings. (ii) A device or screen required by (i) must– A. not permit a 125 mm sphere to pass through the window opening or screen; and B. resist an outward horizontal action of 250 N against the– aa. window restrained by a device; or bb. screen protecting the opening; and C. have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. c) A barrier with a height not less than 865 mm above the floor is required to an openable window– (i) in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	(ii) where the floor below the window is 4m or more above the surface beneath if the window is not covered by (a). d) A barrier covered by (c) except for (e) must not– (i) permit a 125 mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing.	
D2.25: Timber stairways: concession	Not applicable	NA
PART D3 - ACCESS FOR PEOPLE WITH A DISABILITY		
Refer to Access Report by separate consultant		

SECTION E: SERVICES AND EQUIPMENT		
PART E1 – FIRE FIGHTING EQUIPMENT		
E1.0: Deemed-to-Satisfy Provisions	Informational	Noted
E1.3: Fire hydrants	As the building has a floor area greater than 500 m^2, a fire hydrant system complying with AS 2419.1-2005 must be provided to serve the building. The fire hydrant booster assembly is located on the Gertrude Street frontage in lieu of being in sight of the main entry. It is recommended that BCA compliance will be achieved via a Performance Solution. The fire hydrants located on the mid landings of the stairway serving the residential levels are not required and should be removed from the plans. A fire hydrant is required within the fire stair at carpark level.	PS Refer to Part 5 of Report & DNC Refer to Part 5 of Report
E1.4: Fire hose reels	A fire hose reel system complying with BCA clause E1.4 and AS 2441-2005 must be provided to the carpark and must be installed within 4m of an exit.	CRA – Refer Annexure C
E1.5: Sprinklers	The building must be provided with a sprinkler system complying with Table E1.5 and Specification E1.5 installed throughout. The sprinkler valve room or enclosure must be indicated on the plans. The room or enclosure must have direct egress to road or open space.	FI Refer to Part 5 of Report
E1.6: Portable fire extinguishers	Portable fire extinguishers must be provided in accordance with clause E1.6 & Table E1.6 of the BCA and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444-2001. For the Class 2 parts, portable fire extinguishers must be– (i) an ABE type fire extinguisher; and (ii) a minimum size of 2.5 kg; and (iiI) distributed outside a sole-occupancy unit— (A) to serve only the storey at which they are located; and	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
		(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	Not applicable	NA
E1.9:	Fire precautions during construction	Informational– • During construction, not less than one portable fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required / temporary exit; and • After the building has reach an effective height of 12m, the required fire hydrants and fire hose reels must be operational on all floor / roof covered storeys, except for the 2 uppermost storeys; and all required booster connections must be installed.	Note
E1.10:	Provision for special hazards	Not applicable	NA
Specification E1.5 – FIRE SPRINKLER SYSTEMS			
1.	Scope	Informational	Noted
2.	Application of automatic fire sprinkler standards	An automatic fire sprinkler system shall comply with AS2118 as relevant to the building classification and the design of the hydraulic consultant. Where the building is residential class 2 or 3 then refer to Specification E1.5a for specific design requirements and concessions.	CRA – Refer Annexure C
3.	Separation of sprinklered and non-sprinklered areas	Not applicable	NA
4.	Protection of openings	Not applicable	NA
5.	Fast response sprinklers	Fast response sprinklers may be installed only if they are suitable for the type of application proposed and it is demonstrated that the sprinkler system is designed to accommodate their use.	Note
6.	Sprinkler valve enclosures	(a) Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or open space. (b) All sprinkler valve rooms and enclosures must be secured with a system suitable for use by the fire brigade.	FI Refer to Part 5 of Report
7.	Water supply	A required sprinkler system must be provided with at least one water supply.	CRA – Refer Annexure C
8.	Building occupant warning system	The sprinkler system must be connected to and activate a building occupant warning system complying with Clause 7 of Specification E2.2a.	CRA – Refer Annexure C
9.	Connection to Other Systems	Not applicable	NA
10.	Anti-tamper Devices	(a) Not applicable	NA
11.	Sprinkler Systems in Carparks	A sprinkler system protecting a carpark complying with Table 3.9 of Specification C1.1 in a multi-classified building must – (a) be independent of the sprinkler system protecting any part of the building not used as a carpark; or	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
		(b) if forming part of a sprinkler system protecting a part of the building not used as a carpark, be designed such that the section protecting the non-carpark part can be isolated without interrupting the water supply or otherwise affecting the effective operation of the section protecting the carpark.	
12.	Residential Care Buildings	Not applicable	NA
13.	Sprinkler systems in lift installations	(a) Where sprinklers are installed in a space housing lift electrical and control equipment, including machine rooms, secondary floors and sheave rooms, sprinklers in these spaces must – (i) have heads protected from accidental damage by way of a guard that will not impair the performance of the head; and (ii) be capable of being isolated and drained, either separately or collectively, without isolating any other sprinklers within the building. (b) Valves provided to control sprinklers referred to in (a) must be installed in accordance with Clause 10(b).	CRA – Refer Annexure C
Specification E1.5a – CLASS 2 AND 3 BUILDINGS NOT MORE THAN 25m IN EFFECTIVE HEIGHT			
1.	Scope and application	This specification sets out the design options and installation requirements for sprinklers in a class 2 or 3 residential building four or more storeys.	Noted
2.	System requirements	A required automatic fire sprinkler system installed in a Class 2 or 3 building with an effective height of not more than 25 m and a rise in storeys of 4 or more must comply with— • AS 2118.1; or • AS 2118.4, as applicable; or • FPAA101H, except for residential care buildings It is recommended that the building be provided with an AS 2118.1 sprinkler system to address BCA Clause C2.6.	CRA – Refer Annexure C
3.	Permitted concessions	**AS 2118.1 sprinkler system concessions:** (i) The FRL for self-closing fire doors, as required by C3.8 and C3.11, may be reduced to not less than -/30/30. (ii) The FRL for— (A) all non-loadbearing internal walls and shafts constructed of fire-protected timber, as required by Specification C1.1 to have FRLs greater than -/60/60, may be reduced to -/60/60 and service penetrations through non-loadbearing internal walls and shafts constructed of fire-protected timber, as required by C3.15, may be reduced to not less than -/60/15; and (B) all other non-loadbearing internal walls, as required by Specification C1.1, may be reduced to -/45/45 and the FRL for service penetrations through internal non-loadbearing walls and shafts, as required by C3.15, may be reduced to -/45/15.	Note

SECTION E: SERVICES AND EQUIPMENT			
		(iii) The FRL for fire-isolated stairways enclosed with non-loadbearing construction, as required by D1.3, may be reduced to -/45/45. (iv) The maximum distance of travel, as required by D1.4(a)(i)(A), may be increased from 6 m to 12 m. (vii) Internal fire hydrants in accordance with E1.3 are not required where— (A) the building is served by external fire hydrants that provide compliant coverage installed in accordance with E1.3; or (B) a dry fire hydrant system that otherwise complies with AS 2419.1 is installed in the building and— (aa) each fire hydrant head is located in accordance with E1.3 and fitted with a blank end cap or plug; and (bb) the pipework is installed in accordance with E1.3 (as for a required fire main) except that it need not be connected to a water supply; and (cc) a hydrant booster inlet connection is provided in accordance with E1.3; and (dd) an external street or feed hydrant capable of providing the required system flow is located within 60 m of the hydrant booster connection.	
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>General smoke hazard management requirements</u>** An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment (such as lobby air supply) must— (i) be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 4.10 of AS/NZS 1668.1; and for the purposes of this provision, each sole-occupancy unit in a Class 2 or 3 building is treated as a separate fire compartment.	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
		Miscellaneous air-handling systems covered by Sections 5 and 11 of AS/NZS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. **Class 2 parts** Class 2 parts must be provided with an automatic smoke detection and alarm system complying with BCA Specification E2.2a. Note: Smoke alarms in sole occupancy units are now required to be interconnected. **Class 7a buildings** A Class 7a building including a basement provided with a mechanical ventilation system in accordance with AS 1668.2 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.	
E2.3:	Provisions for special hazards	Not applicable	NA
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 must be provided in at least one passenger lift as the lifts serve an effective height of more than 12m. A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above floor level. The current lifts appear to not be of sufficient depth to accommodate a 2m long stretcher.	DNC Refer to Part 5 of Report
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	Not applicable	NA
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 lifts must be provided with: a) A fire service recall control switch complying with E3.9; and	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
		b) A lift car fire service drive control switch complying with E3.10 for every lift.	
E3.8:	Aged care buildings	Not applicable	NA
E3.9:	Fire service recall switch	The fire service control switch required by E3.7, is to comply with this clause. Lift services design to confirm compliance at CC stage.	CRA – Refer Annexure C
E3.10:	Lift car service drive control switch	The lift car service drive control switch required by E3.7, is to comply with this clause. Lift services design to confirm compliance at CC stage.	CRA – Refer Annexure C
PART E4 – VISIBILITY IN AN EMERGENCY, EXIT SIGNS AND WARNING SYSTEMS			
E4.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E4.2:	Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with Clause E4.2 of the BCA and AS 2293.1-2018.	CRA – Refer Annexure C
E4.3:	Measurement of distance	Informational	Noted
E4.4:	Design and operation of emergency lighting	The emergency lighting system must comply with AS 2293.1-2018.	CRA – Refer Annexure C
E4.5:	Exit signs	Exits signs are to be provided above or adjacent to a door providing egress as well as directional signage throughout the entire development where necessary.	CRA – Refer Annexure C
E4.6:	Direction signs	Where an exit is not readily apparent, directional signage is to be installed indicating the direction of egress.	CRA – Refer Annexure C
E4.7:	Class 2 and 3 buildings and Class 4 Parts: Exemptions	E4.5 does not apply to a Class 2 building where exit doors are clearly and legibly labelled on the side remote from the exit with the word ‘EXIT’ in capital letters 25 mm high in a colour contrasting with that of the background, or by some other suitable method.	CRA – Refer Annexure C
E4.8:	Design and operation of exit signs	Exit signs must comply with AS 2293.1-2018 and be clearly visible at all times when the building is occupied.	CRA – Refer Annexure C
E4.9:	Emergency warning and intercom systems	Not applicable	NA

SECTION F: HEALTH AND AMENITY			
PART F1 – DAMP AND WEATHERPROOFING			
F1.0:	Deemed-to-Satisfy Provisions	Performance Requirement FP1.4, for the prevention of the penetration of water through external walls, must be complied with. There are no Deemed-to-Satisfy Provisions for this Performance Requirement in respect of external walls. The assessment contained within this report does not include an assessment against Performance Provision FP1.4.	PS Refer to Part 5 of Report
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. It is noted that the plans do not indicated a stepdown between internal areas and associated balconies. Further	FI Refer to Part 5 of Report

SECTION F: HEALTH AND AMENITY			
		detail is to be provided of how compliance with AS4654.2 will be achieved to prevent water ingress. Note: the lack of stepdown will also impact on the weatherproofing of the external wall and will need to be considered within the FP1.4 Performance Solution as listed in Part 5.3.1 of this report.	
F1.5:	Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	CRA – Refer Annexure C
F1.6:	Sarking	Sarking-type materials used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2-1994.	CRA – Refer Annexure C
F1.7:	Water proofing of wet areas in buildings	Wet areas must be constructed in accordance with AS 3740-2010 and F1.7 of the BCA.	CRA – Refer Annexure C
F1.9:	Damp-proofing	Moisture is to be prevented from reaching the walls above a damp-proof course, and the underside of the suspended floors.	CRA – Refer Annexure C
F1.10:	Damp-proofing of floors on the ground	If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870-2011 (N/A to areas that do not require weatherproofing – refer specific clause exemptions).	CRA – Refer Annexure C
F1.11:	Provision of floor wastes	All bathrooms and laundries are 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	Not applicable	NA
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 must be provided with sanitary facilities; a kitchen sink; facility for the preparation and cooking of food; a bath or shower; a closet pan; wash basin; laundry wash tub and space for a washing machine and dryer.	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)	Not applicable	NA
F2.4:	Accessible sanitary facilities (including Table F2.4)	Not applicable	NA
F2.5:	Construction of sanitary compartments	The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F2.5, between the closet pan within the sanitary compartment and the doorway.	Complies

SECTION F: HEALTH AND AMENITY			
F2.6:	Interpretation: urinals and washbasins	Not applicable	NA
F2.8:	Waste Management	Not applicable	NA
F2.9:	Accessible adult change facilities	Not applicable	NA
PART F3 – ROOM SIZES			
F3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F3.1:	Height of rooms and other spaces	The height of rooms and other spaces must be not less than— (a) in a Class 2 part of a building— (i) a kitchen, laundry, or the like — 2.1 m; and (ii) a corridor, passageway or the like — 2.1 m; and (iii) a habitable room excluding a kitchen — 2.4 m; and (iv) in a room or space with a sloping ceiling or projections below the ceiling line within— (A) a habitable room— (aa) in an attic — a height of not less than 2.2 m for not less than two thirds of the floor area of the room or space; and (bb) in other rooms — a height of not less than 2.4 m for not less than two thirds of the floor area of the room or space; and (B) a non-habitable room — a height of not less than 2.1 m for not less than two thirds of the floor area of the room or space; and when calculating the floor area of a room or space, any part that has a ceiling height of less than 1.5 m is not included; and (b) in a Class 7 building— (i) except as allowed in (ii) and (f) — 2.4 m; and (ii) a corridor, passageway, or the like — 2.1 m; and (f) in any building— (i) a bathroom, shower room, sanitary compartment, airlock, store room, car parking area, or the like — 2.1 m; and (ii) above a stairway, landing or the like — 2 m measured vertically above the nosing line of stairway treads, landing or the like.	CRA – Refer Annexure C
PART F4 – LIGHT AND VENTILATION			
F4.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F4.1:	Provision of natural light	Natural light must be provided to all habitable rooms.	CRA – Refer Annexure C
F4.2:	Methods and extent of natural lighting	Natural light must be provided by windows with an aggregate light transmitting area of not less than 10% the floor area of the room; and that are open to the sky or face a space open to the sky.	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY			
F4.3:	Natural light borrowed from adjoining room	Not applicable	NA
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	(a) Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened— (i) with an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated; and (ii) open to a suitably sized court, or space open to the sky; or an adjoining room in accordance with F4.7.	CRA – Refer Annexure C
F4.7:	Ventilation borrowed from adjoining room	Ventilation may be 'borrowed' from adjoining rooms in some instances in accordance with this clause.	CRA – Refer Annexure C
F4.8:	Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a kitchen or pantry.	Complies
F4.9:	Airlocks	If sanitary compartments are prohibited from opening directly to another room: • access must be by an airlock, hallway or other room; or • the sanitary compartments must be provided with mechanical exhaust ventilation**.**	Complies
F4.11:	Carparks	The carpark must have: • a system of mechanical ventilation complying with AS1668.2-2012; or • a system of natural ventilation complying with Section 4 of AS 1668.4-2012.	CRA – Refer Annexure C
F4.12:	Kitchen local exhaust ventilation	Not applicable	NA
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 parts.	Noted
F5.2:	Determination of airborne sound insulation ratings	A form of construction required to have an airborne sound insulation rating must— (a) have the required value for weighted sound reduction index (Rw) or weighted sound reduction index with spectrum adaptation term (Rw + Ctr) determined in accordance with AS/NZS 1276.1 or ISO 717.1 using results from laboratory measurements; or (b) comply with Specification F5.2.	CRA – Refer Annexure C
F5.3:	Determination of impact sound insulation ratings	(a) A floor in a building required to have an impact sound insulation rating must—	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY			
		(i) have the required value for weighted normalised impact sound pressure level with spectrum adaptation term (Ln,w + CI) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or (ii) comply with Specification F5.2. (b) A wall in a building required to have an impact sound insulation rating must be of discontinuous construction; and (c) For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and (i) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and (ii) for other than masonry, there is no mechanical linkage between leaves except at the periphery.	
F5.4:	Sound insulation rating of floors	A floor in a Class 2 building must achieve an $R_w + C_{tr}$ (airborne) not less than 50, and an $L_{n,w}+C_I$ (impact) not more than 62, if separating: • SOU's; or • An SOU from a plant room, lift shaft, public corridor, public lobby or parts of a different classification.	CRA – Refer Annexure C
F5.5:	Sound insulation rating of walls	• A wall in a Class 2 building must: (i) have an $R_w + C_{tr}$ (airborne) not less than 50 if it separates sole-occupancy units; and (ii) have an R_w (airborne) not less than 50 if it separates a sole occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and (iii) be of discontinuous construction in accordance with F5.3(b) if it separates: A. a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or B. a sole-occupancy unit from a plant room or lift shaft. • Where a wall required to have sound insulation has a floor above, the wall must continue to: (i) the underside of the floor above; or (ii) a ceiling that provides the sound insulation required for the wall. • Where a wall required to have sound insulation has a roof above, the wall must continue to: (i) the underside of the roof above; or (ii) a ceiling that provides the sound insulation required for the wall. • Doorways in walls separating the Class 2 sole-occupancy units from a stairway, public corridor, public lobby or the like must be provided with a door assembly that has an Rw not less than 30.	CRA – Refer Annexure C
F5.6:	Sound insulation rating of services	If a duct, soil or waste pipe passes through more than one unit the duct or pipe must be separated from the rooms with	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY		
	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.	CRA – Refer Annexure C
PART F6 – CONDENSATION MANAGEMENT		
F6.0: Deemed-to-satisfy provisions	Informational	Noted
F6.1: Application of Part	Informational	Noted
F6.2: Pliable building membrane	Where a pliable building membrane is installed in an external wall it shall comply with AS/NZS 4200.1 and installed in accordance with AS 4200.2.	CRA – Refer Annexure C
F6.3: Flow rate and discharge of exhaust systems	An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— (i) 25 L/s for a bathroom or sanitary compartment; and (ii) 40 L/s for a kitchen or laundry. (b) Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air. (c) Exhaust from a bathroom, sanitary compartment, or laundry must be discharged— (i) directly or via a shaft or duct to outdoor air; or (ii) to a roof space that is ventilated in accordance with F6.4	CRA – Refer Annexure C
F6.4: Ventilation of roof spaces	Where an exhaust system covered by F6.3 discharges directly or via a shaft or duct into a roof space, the roof space must be ventilated to outdoor air through evenly distributed openings.	CRA – Refer Annexure C

SECTION G: ANCILLARY PROVISIONS		
PART G1 – MINOR STRUCTURES AND COMPONENTS		
G1.0: Deemed-to-Satisfy Provisions	Informational	Noted
G1.1: Swimming pools	Not applicable	NA
G1.2: Refrigerated chambers, strong-rooms and vaults	Not applicable	NA
G1.3: Outdoor play spaces	Not applicable	NA
NSW G1.101: Provision for cleaning windows	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: • the windows can be cleaned wholly from within the building; or • via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.	CRA – Refer Annexure C
PART G2 – BOILERS, PRESSURE VESSELS, HEATING APPLIANCES, FIREPLACES, CHIMNEYS AND FLUES		

SECTION G: ANCILLARY PROVISIONS		
Part G2 is not applicable		
PART G3 – ATRIUM CONSTRUCTION		
Part G3 is not applicable		
PART G4- CONSTRUCTION IN ALPINE AREAS		
Part G4 is not applicable		
PART G5 – CONSTRUCTION IN BUSHFIRE PRONE AREAS		
G5.0: Deemed-to-Satisfy Provisions	Informational	Noted
G5.1: Application of Part	Informational	Noted
NSW G5.2: Protection	In a designated bushfire prone area, a Class 2 building, or a Class 10a building or deck associated with such a building must comply with the following— (a) AS 3959 except— (i) as amended by Planning for Bush Fire Protection; and (ii) for Section 9 Construction for Bushfire Attack Level FZ (BAL-FZ). Buildings subject to BAL-FZ must comply with specific conditions of development consent for construction at this level; or (b) the requirements of (a) above as modified by the development consent following consultation with the NSW Rural Fire Service under section 4.14 of the Environmental Planning and Assessment Act 1979 if required.	FI Refer to Part 5 of Report
PART G6 – OCCUPIABLE OUTDOOR AREAS		
Part G6 is not applicable		

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

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)		
PART J1 – BUILDING FABRIC		
J1.0: Deemed-to-Satisfy Provisions	Informational	Noted
J1.1: Application of Part	This part is not applicable to the carpark (unconditioned)	NA
J1.1 – J1.6	Not applicable	NA
PART J2 – GLAZING		
J2.0: Deemed-to-Satisfy Provisions	Part J2 provisions are now in Part J1	Noted
J2.1: Application of Part	This part is not applicable to the carpark.	NA
J2.4 – J2.5	This part is not applicable to the carpark.	NA
PART J3 – BUILDING SEALING		
J3.0: Deemed-to-Satisfy Provisions	Informational	Noted
J3.1: Application of Part	This part is not applicable to the carpark.	NA
J3.2 – J3.7	Not applicable	NA
PART J4 – AIR MOVEMENT		

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)			
Deleted		Part J4 deleted in BCA2016	-
PART J5 – AIR CONDITIONING AND VENTILATION SYSTEMS			
J5.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J5.2:	Air-conditioning system control	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.3:	Mechanical ventilation system control	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.4:	Fan systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.5:	Ductwork Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.6:	Ductwork Sealing	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.7:	Pump Systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.8:	Pipework Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.9:	Space Heating	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.10:	Refrigerant Chillers	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.11:	Unitary Air-Conditioning Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.12:	Heat Rejection Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
PART J6 – ARTIFICIAL LIGHTING AND POWER			
J6.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J6.1:	Application of Part	Informational	Noted
J6.2:	Artificial lighting	Artificial lighting must comply with J6.2(a), J6.2(b) and J6.2(c), relevant to maximum permitted illumination power loads. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.3:	Interior artificial lighting and power control	Lighting switches and control devices must comply with BCA Clause J6.3. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.4:	Interior decorative and display lighting	Not applicable	NA
J6.5:	Exterior artificial lighting	Exterior lighting attached to or directed at the façade of the building must be controlled by daylight sensors or time switches in accordance with the specific requirements of this clause. Design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.6:	Boiling water and chilled water storage units	Not applicable	NA
J6.7:	Lifts	Lifts must be configured to ensure artificial lighting and ventilation in the car are turned off when it is unused for 15 minutes; it also must achieve energy control requirements that comply to Clause J6.7 (b) and (c).	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)			
J6.8:	Escalators and moving walkways	Not applicable	NA
PART J7 – HEATED WATER SUPPLY			
J7.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J7.2:	Heated water supply system	Not applicable	NA
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	The building must have an energy meter configured to record the time-of-use consumption of gas and electricity.	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 2)			
NSW PART J(A)1 – BUILDING FABRIC			
NSW J(A)1.0:	Deemed-to-Satisfy Provisions	Informational	Noted
NSW J(A)1.1:	Application of Part	Informational– • The Deemed-to-Satisfy Provisions of this Part only apply to thermal insulation in the Class 2 part where development consent specifies that the insulation is to be provided as part of the development. • The Deemed-to-Satisfy provisions of this Part for thermal breaks apply.	Noted
NSW J(A)1.2:	Compliance with BCA Provisions	Sole occupancy units of the Class 2 building must comply with the following National Provisions except that the reference to 'where required' in J1.2 is deemed to refer to 'where a development consent specifies that insulation is to be provided as part of the development.' • for general thermal construction, comply with J1.2; and • for thermal breaks, comply with J0.4 and J0.5; and • for compensating for a loss of ceiling insulation, comply with J0.4; and • for floor edge insulation, comply with J1.6(b) and J1.6 (c).	CRA – Refer Annexure C
NSW PART J(A)2 – BUILDING SEALING			
NSW J(A)2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
NSW J(A)2.1:	Application of Part	The requirements of this Part are applicable to Class 2 buildings excluding: • a building in a climate zones 2 and 5 where the only means of air-conditioning is by using an evaporative cooler; • a building ventilation opening necessary for the safe operation of a gas appliance; • parts of the building that cannot be fully enclosed.	Noted

SECTION J: ENERGY EFFICIENCY (Class 2)		
NSW J(A)2.2: Compliance with BCA Provisions	Class 2 buildings and Class 4 parts of buildings, must comply with the following National Provisions: (a) J3.2 Chimneys and flues; and (b) J3.3 Roof lights; and (c) J3.4 (a) to (d) windows and; (d) J3.5 Exhaust fans; and (e) J3.6 Construction of ceilings, walls and floors; and (f) J3.7 Evaporative coolers.	CRA – Refer Annexure C
J3.2: Chimneys and flues	Not applicable	NA
J3.3: Roof lights	Not applicable	NA
J3.4: Windows and doors	(a) A door, openable window or the like must be sealed. (b) The above does not apply to: (i) a window complying with AS 2047; or (ii) a fire door or smoke door; or (iii) roller shutter door, roller shutter grille or other security device or device installed only for out-of-hours security. (c) A seal to restrict air infiltration— (i) for the bottom edge of a door, must be a draft protection device; and (ii) for the other edges of a door or the edges of an openable window or other such opening, may be a foam or rubber compression strip, fibrous seal or the like. (d) An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, revolving door or the like, other than where the conditioned space has a floor area of not more than 50m^2.	CRA – Refer Annexure C
J3.5: Exhaust Fans	The exhaust fans serving conditioned spaces or habitable room must be fitted with a sealing device, such as a self-closing damper of the like.	CRA – Refer Annexure C
J3.6: Construction of Ceilings, Walls and Floors	The roof, walls, floors and any other openings, such as window or doors, are to be constructed to minimise air leakage by being enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or are sealed by expanding architraves, skirting, cornices; or expanding foam, rubber compressible strip, caulking or the like.	CRA – Refer Annexure C
J3.7: Evaporative Coolers	Not applicable	NA
NSW PART J(A)3 – AIR-CONDITIONING AND VENTILATING SYSTEMS		
NSW J(A)3.0: Deemed-to-Satisfy Provisions	Informational	Noted
NSW J(A)3.1: Application of Part	Informational	Noted
NSW J(A)3.2: Compliance with BCA Provisions	Class 2 buildings must comply with the following national BCA provisions (as applicable): (a) for air-conditioning system control: J5.2; and (b) for mechanical ventilation system control: J5.3; and (c) for fan systems: J5.4; and (d) for ductwork insulation: J5.5; and	Noted

SECTION J: ENERGY EFFICIENCY (Class 2)		
	(e) for ductwork sealing: J5.6; and (f) for pump systems: J5.7; and (g) for pipework insulation: J5.8; and (h) for refrigerant chillers: J5.10; and (i) for unitary air-conditioning equipment: J5.11; and (j) for heat rejection equipment: J5.12 Provision of J5.9 are regulated under BASIX	
J5.2: Air-conditioning systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.3: Mechanical ventilation system control	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.4: Fan systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.5: Ductwork Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.6: Ductwork Sealing	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.7: Pump Systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.8: Pipework Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.10: Refrigerant Chillers	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.11: Unitary Air-Conditioning Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.12: Heat Rejection Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
NSW PART J(A)4 – HEATED WATER SUPPLY		
NSW J(A)4.0 Deemed-to-Satisfy Provisions	Informational	Noted
NSW J(A)4.1 Application of Part	Informational	Noted
NSW J(A)4.2 Compliance with BCA Provisions	The hot water supply system must comply with Clause J7.2 Heated Water Supply. Provisions of J7.3 & J7.4 are regulated under BASIX.	Noted
J7.2: Hot Water Supply	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
NSW PART J(A)5 – FACILITIES FOR ENERGY MONITORING		
NSW J(A)5.0 Deemed-to-Satisfy Provisions	Informational	Noted
NSW J(A)5.1 Application of Part	Informational– The *Deemed-to-Satisfy Provisions* of this Part apply to a Class 2 building except within a *sole-occupancy unit*.	Noted
NSW J(A)5.3 Compliance with BCA Provisions	Class 2 Buildings must comply with national BCA provisions J8.3.	Noted
J8.3 Facilities for energy monitoring	The building must have an energy meter configured to record the time-of-use 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 building elements for the proposed works have been designed in accordance with Table 3 of Specification C1.1 of BCA2019 for a building of Type A Construction.
2. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
3. Building elements must be non-combustible in accordance with C1.9 of BCA2019.
4. Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C1.10 and Specification C1.10 of BCA2019.
5. Any ancillary elements fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible will comply with Clause C1.14 of BCA2019.
6. Floors separating storeys of different classifications will comply with BCA Clause C2.9 of BCA2019.
7. Doors in a fire-isolated exit will be self-closing or automatic closing fire doors with an FRL of not less than -/60/30 in accordance with Clause C3.8 of BCA2019.
8. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C3.9 of BCA2019.
9. The lift doors will be --/60/- fire doors complying with AS1735.11 in accordance Clause C3.10 of BCA2019.
10. Services penetrating elements required to possess an FRL including the floor slabs, walls, shafts, etc. will be protected in accordance with Clause C3.12, C3.13 and C3.15 and Specification C3.15 of BCA2019.
11. 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.
12. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C3.11 of BCA2019.
13. A lintel will have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and it spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non- loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification C1.1 Clause 2.3 BCA2019.
14. All attachments to the external façade of the building will be fixed in a way that does not affect the fire resistance of that element in accordance with Clause 2.4 of Specification C1.1 of BCA2019.
15. The top and bottom of the riser shafts will achieve an FRL not less than the FRL required for the walls of the shaft in accordance with Clause 2.7 of Specification C1.1 of BCA2019.
16. Fire doors will comply with AS1905.1 and Specification C3.4 of BCA2019.
17. The required exits will be fire-isolated in accordance with Clause D1.3 of BCA2019.

18. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
19. The fire-isolated exits will be in accordance with Clause D1.7 of BCA2019 other than where compliance is achieved via a BCA Performance Solution.
20. The path of travel from the fire-isolated exits will be protected in accordance with Clause D1.7(c) of BCA2019.
21. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
22. The stairway or ramp within the fire-isolated shaft is to be non-combustible, and if there is a local failure not cause structural damage or impair the fire resistance of the shaft, in accordance with Clause D2.2 of BCA2019.
23. The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2019 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
24. The roof of the building where the exit discharges will have an FRL of 120/120/120, and will not have roof lights or openings within 3m of the path of travel in accordance with Clause D2.12 of BCA2019.
25. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.
26. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 where the edge ledge to a flight below.
27. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
28. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 of BCA2019.
29. Signage will be provided on fire and smoke doors in accordance with Clause D2.23 of BCA2019.
30. The openable portion of a window in a bedroom of a Class 2 building will be protected with a restricting device or secure screen that does not allow a 125mm sphere to pass through the opening or screen and resist an outward horizontal action of 250N in accordance with Clause D2.24 of BCA2019. In addition to window protection, and for other openable windows 4 meters or more above the ground below, a barrier with a height not less than 865mm above the floor will be installed to the openable window.
31. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.
32. Non-illuminated exit signage will be installed in accordance with Clause E4.7, and of BCA2019.
33. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2.
34. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
35. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS3740.
36. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.

37. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F1.11 of BCA2019.

38. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS1288 / AS2047.

39. Ceiling heights will be in accordance with Clause F3.1 of BCA2019.

40. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.

41. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.

42. Pliable building membranes installed in external walls will comply with Clause F6.2 of BCA2019 and where a pliable building membrane is not installed in an external wall, the primary water control layer will be separated from water sensitive materials by a drained cavity.

43. Every storey of the carpark will be provided with an adequate system of permanent natural or mechanical ventilation in accordance with Clause F4.11 of BCA2019.

44. A safe manner for cleaning of windows located 3 or more storeys above ground level will be provided in accordance with the Work Health & Safety Act 2011 and regulations made under that Act in accordance with NSW G1.101 of BCA2019.

45. 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.

46. Building Fabric and Thermal Construction will be in accordance with Part J1 of BCA2019.

47. Glazing will be in accordance with Part J1 of BCA2019.

48. Building sealing will be in accordance with Part J3 of BCA2019.

49. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2019.

Electrical Services Design Certification:

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

51. Emergency equipment switchgear and conductors (where required) will be installed in accordance with Clause C2.13 of BCA 2019.

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

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

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

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

Hydraulic Services Design Certification:

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

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

58. A fire hose reel will be installed to the carpark in accordance with Clause E1.4 of BCA2019 and AS2441.

59. A sprinkler system will be installed in accordance with Clause E1.5 of BCA2019, Specification E1.5 and AS2118.1.

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

61. The heated water supply systems will be designed and installed to NCC Volume 3 – Plumbing code and Clause J7.2 of BCA2019.

Mechanical Services Design Certification:

62. An air-handling system which does not form part of a smoke hazard management system will be installed in accordance with Clause E2.2 of BCA2019, and AS/NZS 1668.1.

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

64. Every storey of the car park will be ventilated in accordance with Clause F4.11 of BCA2019 and where not naturally ventilated it will be mechanically ventilated in accordance with AS1668.2 as applicable.

65. Exhaust systems installed in a kitchen, bathroom, sanitary compartment or laundry of a Class 2 unit will have a minimum flow rate and discharge location in accordance with Clause F6.3 of BCA2019.

66. Where exhaust discharges directly or via shaft into a roof space of a Class 2 or 4 sole-occupancy unit, ventilation of the roof space will comply with Clause F6.4 of BCA2019.

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

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 BCA2019 as follows:

- Dead and Live Loads – AS1170.1
- Wind Loads – AS1170.2
- Earthquake actions – AS1170.4
- Masonry – AS3700
- Concrete Construction – AS3600
- Steel Construction AS4100
- Aluminium Construction – AS/NZS1664.1 or 2

69. The FRL's of the structural elements for the proposed works have been designed in accordance with Table 3 of Specification C1.1 of BCA2019 for a building of Type A Construction.

70. The lift shaft will have an FRL in accordance with Clause C2.10 and Specification C1.1 of BCA2019.

71. Upon completion of the works, a structural engineer will be able to certify that local failure will be in accordance with Clause D2.2 of BCA2019 for the fire isolated stairs.

Lift Services Design Certification:

72. The lifts throughout the development will be provided with stretcher facilities in accordance with Clause E3.2 of BCA2019 and will be capable of accommodating a stretcher with a patient lying horizontally by proving a clear space not less than 600mm wide x 2000mm long x 1400mm high above the floor level.

73. Warning signage in accordance with Clause E3.3 of BCA2019 will be provided to the lifts to advise not to use the lifts in a fire.

74. An emergency lift will be provided in the building in accordance with Clause E3.4 of BCA2019.

75. A fire service recall control switch is to be installed on a landing at a location nominated by the appropriate authority in accordance with Clause E3.9.

76. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3.10.

77. Access and egress to the lift well landings will comply with the Deemed-to-Satisfy Provisions of D3 of the BCA2019 and will be suitable to accommodate disabled persons.

78. The type of lifts will also be suitable to accommodate persons with a disability in accordance with Clause E3.6, Table E3.6a, and will have accessible features in accordance with Table E3.6b of BCA2019.

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

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

Acoustic Services Design Certification:

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