BCA Assessment Report

26-30 Mann Street, Gosford

Project:	26-30 Mann Street, Gosford
Reference No:	112697-BCA-r5
Date:	15 November 2021
Client:	SH Gosford Residential Pty Ltd
Client Contact:	Frank Katsanevas
Email:	fkatsanevas@sthilliers.com.au
BCA Logic Contact:	Matthew Kemp
Direct:	8484 4055
Email:	mkemp@bcalogic.com.au

Level 6, 210 Clarence Street, Sydney NSW 2000 | **Postal Address** PO Box Q1440, Queen Victoria Building NSW 1230

Document Control

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112697-BCA-r1	11 December 2020	Draft BCA Assessment Report – Development Application	
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		Prepared by	Verified by
		Matthew Kemp	Warwick Hunter
		Registered Certifier Grade A1, No. BDC 0208 Snr Building Regulations Consultant	Manager Building Regulations
			

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1 BASIS OF ASSESSMENT

1.1. Location and Description

This Building Code of Australia Assessment Report is submitted to the Department of Planning, Industry and Environment (DPIE) on behalf of the SH Gosford Residential and in support of an application for SSD application number 23588910 at 26-30 Mann Street, Gosford. The SSDA seeks consent for:

- Demolition of the existing retaining wall on site.
- Removal of three trees located at the site interface with Baker Street.
- Excavation to a depth of approximately 1.3m to accommodate the proposed ground floor structure.
- Earthworks to level the site in readiness for the proposed building.
- Construction of a 25-storey (26 level) mixed-use building, comprising:
  - 621sqm of retail GFA.
  - 136 apartments, equating to 13,263sqm of residential GFA.
  - Four parking levels for 183 cars, with vehicular access from Baker Street.
  - Storage areas and services.
  - Communal open space.
- Publicly accessible through site link, including stairs, walkways, public lift, public art and landscaping.

Photograph courtesy of Six Maps

1.2. Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA 2019, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of BCA 2019. Such assessment against relevant performance

criteria will need to be addressed by means of a separate Performance Based Fire Safety Engineered Assessment Report to be prepared under separate cover.

1.3. Building Code of Australia

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

1.4. Limitations

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

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

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

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

This report does not include, or imply compliance with:

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

(b) the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to), (Note: The provision of disabled access to the subject development has been assessed against the deemed to satisfy provision of Part D3 and F2.4 of BCA2019 only);

(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.

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 twenty five (25).

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
2	Ground – Level 24	Residential sole occupancy units and associated areas.
6	Ground, Levels 2 & 3	Retail sole occupancy units.
7a	Ground, Levels 1, 2 & 3	Car parking

2.3. Effective Height (Clause A1.0)

The building has an *effective height* of more 50 metres.

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

The building is required to be of Type A Fire Resisting Construction.

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

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

Class 6	Maximum Floor Area	5 000m^2
	Maximum Volume	30 000m^3
Class 2 & 7a	N/A	

2.6. Fire Compartments

The following *fire compartments* have been assumed:

(a) The individual retail sole occupancy units.

(b) The combined car parking areas

2.7. Exits

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

(a) Doors providing direct access to the road or open space.

(b) The entry doors to the fire isolated stairways.

2.8. Climate Zone (Clause A1.0)

The building is located within Climate Zone 5.

2.9. Location of Fire-source features

The fire source features for the subject development are:

North: The allotment's site boundary.

South: The allotment's site boundary.

East: The allotment's site boundary.

West: The far side boundary of the Baker Street roadway.

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

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

(b) is neither transparent nor translucent.

3 MATTERS FOR FURTHER CONSIDERATION

3.1. 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 D 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 D 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.

3.2. 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.

3.3. 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 to be prepared for this development under separate cover:

Table 2. Performance Solutions

Item	Description of Performance Solution	DTS Provision
1.	It is proposed to provide rationalised fire resistance levels to the; a) Residential floors in the wet areas to 60/60/60 in lieu of 90/90/90. b) Non-load bearing parts of Class 6 Retail areas from -/180/180 to -/120/120	C1.1(b), Spec C1.1
2.	It is proposed to have unprotected openings, on all levels, less than 3m from a fire source feature, on the basis that an easement over neighbouring property will provide the appropriate separation.	C3.2(a)(i)
3.	There will parts of the building that will have access to a single exit, in lieu of the minimum of two. This includes locations such as; a) Retail tenancy units. b) Pump and Services rooms.	D1.2(b)(i)
4.	There will be residential unit doors that are more than 6m to a point of choice or to an exit, with an allowance of up to 11m made.	D1.4(a)(i)(A)
5.	There will be areas, within the common open spaces on Levels 4 & 21, that have travel to exits or points of choice of more than 20m. An allowance of up to 35m is to be made where direct access to a	D1.4(a)(ii)

Item	Description of Performance Solution	DTS Provision
	fire stair without travelling back into the building and 30m where internal travel is required.	
6.	The distance to a point of choice to different exits, within the carpark levels, is more than 20m whereas an allowance of 25m will be made.	D1.4(c)(i)
7.	The alternative residential exit stairs will be less than 9m apart, whereas 6m is proposed.	D1.5(b)
8.	The discharge path to the roadway, from the eastern fire isolated stairway, will require occupants to pass within 6m of openings within the external walls. It is proposed that protection will not be provided to these openings.	D1.7(c)
9.	It is proposed to locate alternative residential exit discharge points immediately adjacent each other on the Ground Floor Level. In addition, connection to the road way will be reliant upon use of the easement area of a neighbouring property.	D1.10(d)
10.	Egress from the proposed fire control centre will involve a change in level of more than 300mm, to reach the public roadway.	E1.8 Spec E1.8 Clause 3
11.	The design of the mechanical air pressurisation system, serving the fire isolated exits, is to be rationalised to address the issue of doors being open to it from the car park levels.	E2.2(a) Table E2.2a
Non-fire related		
12.	The construction of the external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	None
13.	There will be rooms on the northern side of the building that will be reliant on the easement width to access required natural lighting.	F4.2(b)(iii)

3.4. Façade Construction – Non Combustible

As the building is required to be of Type A Construction, the external façade is required to be *non-combustible* and comply with Clause C1.9 of BCA2019 with attachments to the façade being either non-combustible or maintain fire hazard properties in accordance with Clause C1.14 of BCA2019.

It is noted that the building's design will incorporate Green Walls or the like to support the landscaping concept. It is expected that the construction of these elements can readily maintain BCA requirements for non-combustible construction and ensure that other criteria, such as balustrade design and the like, is not compromised.

4 STATEMENT OF COMPLIANCE

The architectural design documentation as referred to in report has been assessed against the applicable provisions of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying (as outlined in Annexure D) with that Code, for the purposes of a Development Application.

ANNEXURE A DESIGN DOCUMENTATION

Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 3. Architectural Plans

Architectural Plans Prepared by DKO Architecture		
Drawing Number	**Revision**	**Title**
DA001	A	Title Page
DA101	A	Staging Plan
DA102	A	Site Plan
DA103	A	Site Survey
DA201	B	Ground floor
DA202	A	Level 1
DA203	B	Level 2
DA204	B	Level 3
DA205	B	Level 4
DA206	A	Level 5
DA207	A	Levels 6-12
DA208	A	Levels 13-20
DA209	A	Level 21
DA210	A	Level 22-23
DA211	A	Level 24
DA212	A	Roof Plan
DA301	A	Elevations & Sections – North Elevation
DA302	A	Elevations & Sections – South Elevation
DA303	A	Elevations & Sections – East Elevation (Mann Street)
DA304	A	Elevations & Sections – West Elevation (Baker Street)
DA305	A	Elevations & Sections – Section AA
DA306	A	Elevations & Sections – Section BB
DA307	A	Materials & Finishes
DA414	B	Apartment Types 1/3
DA415	B	Apartment Types 2/3

ANNEXURE B ESSENTIAL SERVICES

Annexure B - Essential Services

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

Table 4. Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Access Panels & doors/hoppers (fire rated)	**BCA2019 C3.13** (Openings in Shafts)
2.	Construction Joints	**BCA2019 C1.1, Spec C1.1** **BCA2019 C3.16** AS 1530.4:2014 & AS 4072.1:2005
3.	Fire doors	**BCA2019 C2.12** (Separation of Equipment) **BCA2019 C2.13** (Electricity Supply Systems) **BCA2019 C3.4** (Acceptable methods of Protection) **BCA2019 C3.5** (Doors in Fire Walls) **BCA2019 C3.8** (Openings in Fire Isolated Exits) **BCA2019 C3.10** (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 **BCA2019 C3.11** (Bounding Construction) Spec E1.8 (Fire Control Centres) Spec C3.4 AS1905.1: 2015
4.	Fire seals protecting openings in fire resisting components of the building	**BCA2019 C3.15** (Openings for service installations) **BCA2019 C3.16** (Construction joints) **BCA2019 Spec C3.15** AS1530.4:2014 & AS4072.1-2005
5.	Lightweight construction	**BCA2019 C1.1, Spec. C1.1** **BCA2019 C1.8, Spec C1.8** AS1530.4:2014
General		
6.	Fire control centres & rooms	**BCA2019 E1.8, Spec E1.8** (Fire Control Centres & Room)

Item	Essential Fire and Other Safety Measures	Standard of Performance
7.	Portable fire extinguishers	**BCA2019 E1.6** AS 2444–2001
8.	Fire blankets	AS 2444–2001
9.	Automatic fail safe devices	**BCA2019 D2.21** (Operation of Latches) **BCA2019 D2.22** (Re-entry from fire-isolated stairs) AS 1670.1:2018 (Fire)
10.	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) **BCA2019 Spec E1.8** (Fire Control Room)
Lifts		
11.	Emergency lifts	**BCA2019 E3.4** AS 1735.1:2003 (Appendix A) or AS 1735.2:2001
Electrical Services		
12.	Automatic fire detection & alarm	**BCA2019 E2.2**, NSW Table E2.2a, Table 2.2b, **Spec E2.2a** AS 3786:2014 (Amdt 1-4) AS 1670.1:2018 (Fire)
13.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1:2018
14.	Exit signs	**BCA2019 E4.5** (Exit Signs) **BCA2019 E4.6** (Direction Signs) **BCA2019 E4.8** (Design and Operation - Exits) AS/NZS 2293.1:2018
15.	Emergency warning and intercom systems for Emergency Purposes.	**BCA2019 E4.9** AS 1670.4:2018 (EWIS)
Hydraulic Services		
16.	Automatic fire suppression systems	**BCA2019 E1.5** AS 2118.1:2017 (Sprinklers)

Item	Essential Fire and Other Safety Measures	Standard of Performance
		AS 2118.6:2012 (Combined Sprinklers/Hydrant)
17.	Fire hydrant systems	**BCA2019 E1.3** **BCA2019 C2.12 (Separation of Equipment)** AS 2419.1:2005
18.	Hose reel systems (Class 6 & 7a parts)	**BCA2019 E1.4** AS 2441:2005
Mechanical Services		
19.	Fire dampers	**BCA2019 E2.2, Spec E2.2a, Spec E2.2b** **BCA2019 C3.15** AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
20.	1. Mechanical ventilation to carpark. 2. Zone Pressurisation System. 3. Fire Isolated Exit Pressurisation System	**BCA2019 E2.2, Table E2.2a, Table E2.2b** **Spec E2.2a, Spec E2.2b** AS 1668.1:2015 (Amdt 1) **Note: 5.5.3 Override control** To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point. **Note:** Signage should be located at the car park entry indicating the location of the control switches.

Notes:

(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* must—

(i) ((be designed and installed to operate as a smoke control system in accordance with AS 1668.1:2015; or

(ii)

(A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and

(B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1:2018; and

for the purposes of this provision, each *sole-occupancy unit* in a Class 2 building is treated as a separate *fire compartment*.

Item	Essential Fire and Other Safety Measures	Standard of Performance
	Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1:2015 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS 1668.1:2015 systems that are provided for zone smoke control and automatic air pressurisation for fire-isolated exits.	

ANNEXURE C FIRE RESISTANCE LEVELS

Annexure C - 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 5. Type A Construction

Item	Class 2	Class 7a	Class 6
Loadbearing External Walls (including columns and other building elements incorporated therein)			
- Less than 1.5m to a *fire-source feature*	90/90/90	120/120/120	180/180/180
- 1.5 – less than 3m from a *fire-source feature*	90/60/60	120/90/90	180/180/120
- 3m or more from a *fire source feature*	90/60/30	120/60/30	180/120/90
Non-Loadbearing External Walls			
- Less than 1.5m to a *fire-source feature*	-/90/90	-/120/120	-/180/180
- 1.5 – less than 3m from a *fire-source feature*	-/60/60	-/90/90	-/180/120
- 3m or more from a *fire-source feature*	-/-/-	-/-/-	-/-/-
External Columns			
- Loadbearing	90/-/-	120/-/-	180/-/-
- Non-loadbearing	-/-/-	-/-/-	-/-/-
Common Walls & Fire Walls	90/90/90	120/120/120	180/180/180
Stair and Lift Shafts required to be fire-resisting			
- Loadbearing	90/90/90	120/120/120	180/120/120
- Non-loadbearing	-/90/90	-/120/120	-/120/120
Internal walls bounding sole occupancy units			
- Loadbearing	90/90/90	120/-/-	180/-/-
- Non-loadbearing	-/60/60	-/-/-	-/-/-
Internal walls bounding public corridors, public lobbies and the like:			
- Loadbearing	90/90/90	120/-/-	180/-/-
- Non-loadbearing	-/60/60	-/-/-	-/-/-

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

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

ANNEXURE D DETAILED BCA 2019 ASSESSMENT

Annexure D – Detailed BCA 2019 Assessment

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

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

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

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

Deemed to Satisfy Clause Assessment

Table 6. Deemed to Satisfy Clause Assessment

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

Section C: Fire Resistance				
Part C1 – Fire Resistance and Stability				
C1.0:	Deemed-to-Satisfy Provisions	Informational	-	Noted
C1.1:	Type of construction required	The building is required to be of Type A Construction. Refer to Specification C1.1 requirements at the end of this Section.	It is expected that the building will be constructed with reinforced concrete and other non-combustible materials as appropriate.	CRA – Refer Annexure F
C1.2:	Calculation of rise in storeys	The building has a rise in storeys of twenty five (25).	-	Noted
C1.3:	Buildings of multiple classification	Informational	-	Noted
C1.4:	Mixed Types of construction	A building may be of mixed Types of construction where it is separated in accordance with C2.7 and the Type of construction is determined in accordance with C1.1 or C1.3.	The building is required to be constructed to Type A throughout.	CRA – Refer Annexure F
C1.5:	Two Storey Class 2, 3 or 9c buildings	-	-	N/A
C1.6:	Class 4 Parts of building	-	-	N/A
C1.7:	Open spectator stands and indoor sports stadium	-	-	N/A
C1.8:	Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8.	-	CRA – Refer Annexure F

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 and a loadbearing *fire wall*, including those that are part of a loadbearing shaft, must comply with Specification C1.1. (d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants, termite management systems, Glass including laminated glass, thermal breaks associated with glazing systems and damp-proof courses. (e) The following materials, may be used wherever a *non-combustible* material is required: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet. (iv) Fibre-reinforced cement sheeting. (v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.	The building will readily meet the requirements for non-combustible construction with on going consideration given as the design develops in later stages. Attachments such as the construction of the proposed Green Walls and the like will maintain the requirements of this Clause and comply with C1.14 as required.	CRA – Refer Annexure F

Section C: Fire Resistance			
	(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.		
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 F
C1.11: Performance of external walls in fire	-	-	N/A
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.		Noted
C1.13: Fire-protected timber: Concession	-	-	N/A
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an	Attachments to the building, including the proposed Green Screen componentry will be non-combustible as necessary.	CRA – Refer Annexure F

Section C: Fire Resistance			
	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 (B) immediately above a storey at ground level; and		

Section C: Fire Resistance			
	(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.	The Retail units can be fire separated from the remainder of the building, and are within the size limitations of this Clause.	CRA – Refer Annexure F
C2.3: Large isolated buildings	-	-	N/A
C2.4: Requirements for open spaces and vehicular access	-	-	N/A
C2.5: Class 9a and 9c Buildings	-	-	N/A
C2.6: Vertical separation of openings in external walls	-	-	N/A

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C2.7: Separation by fire walls	**Construction** - A *fire wall* must be constructed in accordance with the following: > Any openings in a *fire wall* must not reduce the *FRL* required by Specification C1.1 for the *fire wall*, except where permitted by the Deemed-to-Satisfy Provisions of Part C3. > Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not pass through or cross the *fire wall* unless the required fire resisting performance of the *fire wall* is maintained. **Separation of *fire compartments*** – A part of a building separated from the remainder of the building by a *fire wall* may be treated as a separate *fire compartment* if it is constructed in accordance with this clause and the *fire wall* extends to the underside of – > a floor having an *FRL* required for a *fire wall*; or > the roof covering.	-	CRA – Refer Annexure F
C2.8: Separation of classifications in the same storey	Where a storey has different classifications located alongside one another: > each building element in that storey must have the higher *FRL* prescribed in Specification C1.1 for that element for the classifications concerned; or > the parts must be separated in that storey by a *fire wall* having the higher *FRL* prescribed in Table 3; or > where one part is a carpark complying with Table 3.9, 4.2 or 5.2 of Specification C1.1, the parts may be separated by a *fire wall* complying with the appropriate Table.	It is expected that the Retail Units & Carpark will be fire separated from the remainder of the building so that the higher FRLs do not apply throughout the respective storeys	CRA – Refer Annexure F

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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.	-	CRA – Refer Annexure F
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. Emergency lifts must be in fire-rated shafts not less than *FRL* 120/120/120.	-	CRA – Refer Annexure F
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.	The design suitably separates the required fire resisting stair and lift shafts.	Complies
C2.12: Separation of equipment	Any of the following equipment located in the building must be separated from the remainder of the building: > lift motors and lift control panels; or > emergency generators used to sustain emergency equipment operating in the emergency mode; or > central smoke control plant; or > boilers; or > a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more. Equipment need not be separated in if the equipment comprises: > smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or	-	CRA – Refer Annexure F

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	> stair pressurizing equipment installed in compliance with the relevant provisions of AS 1668.1:2015; or > a lift installation without a machine room; or > equipment otherwise adequately separated from the remainder of the building. Separation must be by construction having an *FRL* as required by Specification C1.1, but not less than *FRL* 120/120/120 with openings protected by self-closing fire doors having an *FRL* of not less than –/120/30. Separation of on-site fire pumps must comply with the requirements of AS 2419.1:2005.		
C2.13: Electricity supply system	> Any electrical substation located within the building must be separated from the remainder of the building by construction having an *FRL* of not less than 120/120/120, and doorways protected with self-closing fire doors having an *FRL* of not less than –/120/30. > A main switchboard which sustains emergency equipment operating in the emergency mode must be fire separated from any other part of the building by construction having an *FRL* of not less than 120/120/120 and have the doorway fitted with self-closing fire door having an *FRL* of not less than –/120/30. > Any electrical conductors located within the building that supply a substation or main switchboard for emergency equipment must comply with BCA clause C2.13. > Emergency equipment switchgear must be separated from non-emergency equipment switchgear by metal partitions designed to minimize the spread of a fault from the non-emergency equipment switchgear.	-	CRA – Refer Annexure F

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	> Emergency equipment includes but is not limited to the following: o fire hydrant booster pumps; o sprinkler pumps; o hose reel pumps; o air-handling systems designed to exhaust and control the spread of smoke; o emergency lifts; o control and indicating equipment; and o sound systems and intercom systems for emergency purposes.		
C2.14: Public corridors in Class 2 and 3 Buildings	Public corridors in Class 2 parts that exceed 40 m in length must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Specification C2.5.	No public corridor will exceed more than 40m.	Complies
Part C3 – Protection of Openings			
C3.0: Deemed-to-Satisfy Provisions	Informational	-	Noted
C3.1: Application of Part	Informational	-	Noted
C3.2: Protection of openings in external walls	Openings in an external wall that is required to have an *FRL* must be protected in accordance with C3.4 if the distance between the opening and the *fire-source feature* is: > less than 3 m from a side or rear boundary; or	There are openings within external walls less than 3m to a fire source feature (allotment boundary).	**PS** **Refer to Part 5.3 of Report**

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		> less than 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or > less than 6 m from another building on the allotment that is not Class 10; and if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located. Where wall-wetting sprinklers are used, they must be located externally.		
C3.3:	Separation of external walls and associated openings in different fire compartments	-	Not expected that there will be openings under this Clause requiring protection.	N/A
C3.4:	Acceptable methods of protection	Where protection is required, openings must be protected as follows: <u>Doorways:</u> (i) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or (ii) –/60/30 fire doors that are self-closing. <u>Windows:</u> (i) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (ii) –60/– fire windows that are automatically closing or permanently fixed in the closed position; or (iii) –/60/– automatic closing fire shutters.	-	CRA – Refer Annexure F

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		Other openings: (i) Excluding voids – internal or external wall-wetting sprinklers; or (ii) Construction having an *FRL* not less than –/60/– Fire doors, fire windows and fire shutters must comply with BCA Specification C3.4.		
C3.5:	Doorways in fire walls	Doorways in the fire walls must be protected by a self-closing fire door that achieves an *FRL* of not less than that required by Specification C1.1 for the *fire wall* except that each door must have an insulation level of at least 30.	-	CRA – Refer Annexure F
C3.6:	Sliding fire doors	-	-	N/A
C3.7:	Protection of doorways in horizontal exits	-	-	N/A
C3.8:	Openings in fire-isolated exits	Doorways that open to fire-isolated stairways, fire-isolated passageways or fire-isolated ramps, and are not doorways opening to a road or open space, must be protected by –/60/30 fire doors that are self-closing, or automatic-closing in accordance with (ii) and (iii) of Clause C3.8.	-	CRA – Refer Annexure F
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, detection, or pressurization system serving the exit; or ○ a security, surveillance or management system serving the exit; or	-	CRA – Refer Annexure F

Section C: Fire Resistance			
	○ an intercommunication system or an audible or visual alarm system in accordance with D2.22; or ○ the monitoring of hydrant or sprinkler isolating valves. > ducting associated with a pressurisation system if it; (iii) is constructed of material having an *FRL* of not less than –/120/60 where it passes through any other part of the building; and (iv) does not open into any other part of the building; or > water supply pipes for fire services.		
C3.10: Openings in fire-isolated lift shafts	Lift landing doors are required to be fire doors with an *FRL* of -/60/- that comply with AS 1735.11:1986, and be set to remain closed except when discharging or receiving, passengers, goods or vehicles. Panels in the wall of the lift shaft must be backed by construction having an *FRL* of not less than –/60/60 if it exceeds 35 000 mm^2 in area.	-	CRA – Refer Annexure F
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 F
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. Where a service passes through a floor which is required to be protected by a *fire-protective* covering, the	-	CRA – Refer Annexure F

Section C: Fire Resistance			
	penetration must not reduce the fire performance of the covering.		
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 F
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 F
C3.16: Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4:2014 to achieve the required *FRL*.	-	CRA – Refer Annexure F
C3.17: Columns protected with lightweight construction to achieve an FRL	A column protected by lightweight construction to achieve an *FRL* which passes through a building element that is required to have an *FRL* or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required *FRL* or resistance to the incipient spread of fire.	-	CRA – Refer Annexure F
Specification C1.1 – Fire-Resisting Construction			

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2.0:	General Requirements	Informational	-	Noted
2.1:	Exposure to fire-source features	A building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the *fire-source feature*, or vertical projection of the feature, is not obstructed by another part of the building that– (i) has an *FRL* of not less than 30/–/–; and (ii) is neither transparent nor translucent.	-	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 F
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 F
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 F
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—	-	CRA – Refer Annexure F

Section C: Fire Resistance				
		(i) lift motor equipment; or (ii) one or more of the following: (A) Hot water or other water tanks. (B) Ventilating ductwork, ventilating fans and their motors. (C) Air-conditioning chillers. (D) Window cleaning equipment. (E) Other service units that are *non-combustible* and do not contain flammable or combustible liquids or gases.		
2.6:	Mezzanine floors: Concession	-	-	N/A
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 F
2.8:	Carparks in Class 2 and 3 Buildings	-	-	N/A
2.9:	Residential Aged Care building: Concession	-	-	N/A
3.0:	Type A fire-resisting construction	Type A fire-resisting construction is applicable to the development.	Refer to part 3 clauses below for the relevant Type A Construction requirements appliable to the project.	-

Section C: Fire Resistance				
3.1:	Fire-resistance of building elements	The FRL's of all elements are to be in accordance with the FRL's detailed in the Table contained within Part 4.0 of this report. > External walls, common walls and the flooring and floor framing of lift pits must be *non-combustible*. (Note: insulation and sarking used must be *non-combustible*) > Internal walls required to be fire rated must extend to– (i) to the underside of the floor next above; or (ii) the underside of a roof complying with Table 3; or (iii) if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the *non-combustible* roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other combustible building elements; or (iv) a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes. > Load bearing internal walls (including those part of a loadbearing shaft) and fire walls must be of concrete or masonry. > 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. > The *FRL*s specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5m of a window	-	CRA – Refer Annexure F

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		and are exposed through that window to a *fire-source feature*.		
3.2:	Concessions for floors	A floor need not comply with Table 3 if— (a) it is laid directly on the ground;	-	Noted
3.3:	Floor Loading of Class 5 and 9b buildings: Concession	-	-	N/A
3.4:	Roof superimposed on concrete slab: Concession	A roof superimposed on a concrete slab roof need not comply with Clause 3.1 as to fire-resisting construction if— (a) the superimposed roof and any construction between it and the concrete slab roof are non-combustible throughout; and (b) the concrete slab roof complies with Table 3.	-	CRA – Refer Annexure F
3.5:	Roof: Concession	A roof need not comply with Table 3 if its covering is *non-combustible* and the building— (a) has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 installed throughout.	-	CRA – Refer Annexure F
3.6:	Roof lights	-	No roof lights proposed.	N/A
3.7:	Internal columns and walls: Concession	For a building with an *effective height* of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than *fire walls* and shaft walls may have— (a) in a Class 2 building: FRL 60/60/60.	-	CRA – Refer Annexure F

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3.8:	Open spectator stands and indoor sports stadiums concession	-	-	N/A
3.9:	Carparks	-	-	N/A
3.10:	Class 2 and 3 buildings Concession	-	-	N/A
Specification C1.10 – Fire Hazard Properties				
1.	Scope	Informational	-	N/A
2.	Application	Informational	-	N/A
3.	Floor linings and floor coverings	A floor lining or floor covering must have– (a) a *critical radiant flux* not less than that listed in Table 2; and (b) a *group number* complying with Clause 6(b), for any portion of the floor covering that is continued more than 150 mm up a wall.	-	CRA – Refer Annexure F
4.	Wall and ceiling linings	(a) A wall or ceiling lining system must comply with the *group number* specified in Table 3 (b) A *group number* of a wall or ceiling lining and the *smoke growth rate index* or *average specific extinction area* must be determined in accordance with AS 5637.1:2015.	-	CRA – Refer Annexure F
5.	Air-handling ductwork	Rigid and flexible ductwork must comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.	-	CRA – Refer Annexure F

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6.	Lift cars	Materials used as— (a) floor linings and floor coverings must have a *critical radiant flux* not less than 2.2; and (b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1:2015.	-	CRA – Refer Annexure F
7.	Other materials	Materials and assemblies not included in Clauses 3, 4, 5 or 6 must not exceed the indices set out in Table 4.	-	CRA – Refer Annexure F
Specification C3.4 – Fire Doors, Smoke Doors, Fire Window and Shutters				
1.	Scope	Informational	-	Noted
2.	Fire doors	Fire doorsets must comply with AS 1905.1:2015 and not fail by radiation through any glazed part during the period specified for integrity in the required *FRL*.	-	CRA – Refer Annexure F

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 part of a building.	-	Noted
D1.2:	Number of exits required	As the building has an *effective height* of more than 25 metres, not less than 2 *exits* must be provided from each storey. Without passing through another *sole-occupancy unit*, every occupant of a storey or part of a storey must have	It is considered that the required number of exits can be suitably achieved.	Complies

Section D: Access and Egress				
		access to an *exit* or at least 2 *exits*, if 2 or more are required.		
D1.3:	When fire-isolated stairways and ramps are required	Every *exit* stairway must be fire-isolated as they will connect, pass by or serve more than three consecutive storeys.	-	CRA – Refer Annexure F
D1.4:	Exit travel distances	Class 2 residential > The entrance doorway of each *sole-occupancy unit* must be not more than – o 6 m from an *exit* or from a point from which travel in different directions to 2 *exits* is available; or o 20 m from a single *exit* serving the storey at the level of egress to a road or open space; and > No point on the floor of a room which is not in a *sole-occupancy unit* must be more than 20 m from an *exit* or from a point at which travel in different directions to 2 *exits* is available. Class 7a carpark 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. Class 6 retail units The distance to a single *exit* serving a storey at the level of access to a road or open space may be increased to 30 m.	There are residential areas that will exceed the maximum permitted travel distances.	**PS** **Refer to Part 5.3 of Report**
D1.5:	Distance between alternative exits	*Exits* that are required as alternative means of egress must be–	-	CRA – Refer Annexure F

Section D: Access and Egress			
	(a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 *exits* is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than— (i) in a Class 2 — 45 m apart; or (ii) in all other parts — 60 m apart; and (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart. Note: the distance between *exits* must be measured through the point at which travel two *exits* is available.		
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.	-	CRA – Refer Annexure F

Section D: Access and Egress				
		> the unobstructed width of a required *exit* must not diminish in the direction of travel to a road or open space.		
D1.7:	Travel via fire-isolated exits	> A doorway from a room must not open directly into a stairway that is required to be fire-isolated unless it is from – (i) a public corridor, public lobby or the like; or (ii) a *sole-occupancy unit* occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. > D1.7 (b) - Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (i) to a road or open space. > D1.7 (c) - Where a path of travel from the point of discharge of a fire-isolated *exit* necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4, (iii) for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.	Access and discharge to the required fire stairs has been suitably arranged.	CRA – Refer Annexure F
D1.8:	External stairways or ramps in lieu of fire-isolated exits	-	-	N/A

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D1.9: Travel by non-fire-isolated stairways or ramps	-	-	N/A
D1.10: Discharge from exits	*Exits* must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the *exit*. If a required *exit* leads to open space, the path of travel to the road must have an unobstructed width of not less than 1m. If an *exit* discharges to open space that is at a different level that the public road to which it is connected, the path of travel to the road must be by a ramp or other incline not steeper than 1:8, or a BCA compliant stairway. The discharge points of alternative *exits* must be as far apart as practical.	The discharge of the alternative residential fire stairs are located directly adjacent each other and would need performance assessment.	**PS** **Refer to Part 5.3 of this Report**
D1.11: Horizontal exits	-	-	N/A
D1.12: Non-required stairways, ramps or escalators	-	-	N/A
D1.13: Number of persons accommodated	Informational	All, As requested within the Design Coordination meeting, see below response from STH Property in relation to seating numbers for the retail tenancies; An indicative rate for seating is; 30% of tenancy is kitchen and BOH (if f&b) 70% of tenancy allocated to seating	Noted

Section D: Access and Egress			
		Allow 1.5-2sqm per seat for this use	
D1.14: Measurement of distances	Informational.	-	Noted
D1.15: Method of Measurement	Informational	-	Noted
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	(a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a floor area of not more than 100 m^2; or (ii) all but one point of egress from a plant room, a lift machine room with a floor area of not more than 200 m^2. (b) A ladder permitted under (a)— (i) may form part of an *exit* provided that in the case of a fire-isolated stairway it is contained within the shaft; or (ii) may discharge within a storey in which case it must be considered as forming part of the path of travel; and (iii) for a plant room, must comply with AS 1657.	-	CRA – Refer Annexure F
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 F
D1.18: Egress from early childhood centres	-	-	N/A

Section D: Access and Egress				
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.*	-	Noted
D2.2:	Fire-isolated stairways and ramps	The fire isolated stairways must be constructed of *non-combustible* materials and constructed so that if there is local failure it will not cause structural damage to, or impair the fire-resistance of the shaft.	-	CRA – Refer Annexure F
D2.3:	Non-fire-isolated stairways and ramps	Required stairs and ramps (including landings and any supporting building elements) must be constructed according to D2.2, or only of- (a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue".	Applicable to the stairway connecting the carpark levels ground and one.	CRA – Refer Annexure F

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D2.4:	Separation of rising and descending stair flights	-	The fire stairs do not serve any storeys below ground.	N/A
D2.5:	Open access ramps and balconies	-	-	N/A
D2.6:	Smoke lobbies	-	-	N/A
D2.7:	Installations in exits and paths of travel	> Access to service shafts and services other than to fire-fighting or detection equipment must not be provided from a fire-isolated stairway or fire-isolated passageway. > Gas or other fuel services must not be installed in a required *exit*. > Any electricity meters, distribution boards or ducts, or telecommunications distribution boards or equipment installed in corridors/hallways/lobbies or the like must be enclosed with *non-combustible* construction or a fire protective covering with doorways suitably sealed against smoke spread. > Electrical wiring may be installed in a fire-isolated *exit* if the wiring is associated with: ○ a lighting, detection, or pressurization system serving the *exit*; or ○ a security, surveillance or management system serving the *exit*; or ○ an intercommunication system or an audible or visual alarm system in accordance with D2.22; or ○ the monitoring of hydrant or sprinkler isolating valves.	-	CRA – Refer Annexure F

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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.	-	CRA – Refer Annexure F
D2.9: Width of stairways and ramps	A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2 m.	-	Noted
D2.10: Pedestrian ramps	-	No gradients steeper than 1:20 are proposed.	CRA – Refer Annexure F
D2.11: Fire-isolated passageways	The enclosing construction of a fire isolated passageway must have an FRL not less than that required for the fire isolated stair.	-	CRA – Refer Annexure F
D2.12: Roof as open space	-	-	N/A
D2.13: Goings and risers	Stairways must comply with the following: > Stairways must have not more than 18 and not less than 2 risers in each flight; > Goings must be between 250 mm and 355 mm; > Risers must be between 115 mm high and 190 mm high; > The slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700; > The goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (R) are considered constant if the variation between– (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and	-	CRA – Refer Annexure F

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	(B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm. > Risers must not contain any openings that would permit a 125 mm sphere to pass through. > Each tread must have a non-slip finish or an adequate non-skid strip near the edge of the nosings; > Treads must be of solid construction (not mesh or perforated) if the stairway is more than 10 m high or connects more than 3 storeys. > In the case of a required stairway, no winders in lieu of a landing > Treads must have a surface or nosing strip with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with AS 4586-2013 Slip resistance classification of new pedestrian surface materials.		
D2.14: Landings	Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.	-	CRA – Refer Annexure F

Application	Surface Condition	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11

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	<table><tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr><tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr></table>		
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 1428.1:2009; 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 F
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>	Balustrade design will readily meet the requirements of this Clause, including ensuring that non-climbable zones are not compromised by installations such as the Green Walls.	CRA – Refer Annexure F

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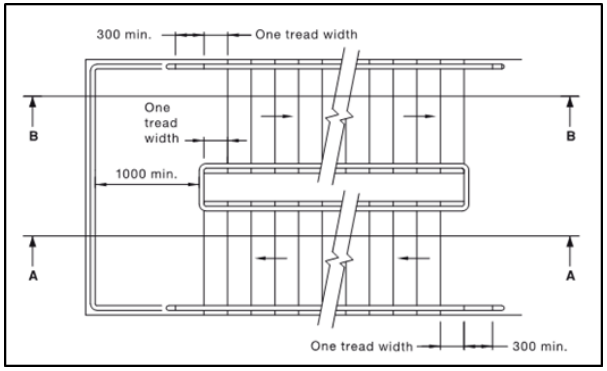
	> maximum openings of 300 mm; or > where rails are used– o a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and o the opening between rails must not be more than 460 mm <u>Balustrade openings – other than fire-isolated stairs</u> > A 125 mm sphere must not be able to pass through any opening and for stairways, the 125 mm is measured above the nosing line of the stair treads. <u>Climbability – other than fire-isolated stairs</u> For floors more than 4m above the surface beneath, the balustrade must not incorporate any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that could facilitate climbing.		
D2.17: Handrails	Handrails to stairways must: > be located along at least one side of the ramp or flight (a flight being 2 or more risers); and > located along each side if the total width of the stairway or ramp is 2m or more; and > be fixed at a height of not less than 865 mm above the nosings of the stair treads and the floor surface of the ramp, landing, or the like; and > be continuous between stair flight landings and have no obstruction that will break a hand-hold. > be constructed to comply with clause 12 of AS 1428.1:2009 (including handrails to the fire stairs).	-	CRA – Refer Annexure F

Section D: Access and Egress			
	> 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 AS 1428.1:2009. The handrail shall follow the angle of the nosings and be consistent height through the stair flight and any landings with no vertical sections at the landing. Compliance can be achieved via offset risers at the bottom of the flight in accordance with Figure 28 in AS 1428.1:2009 or with larger landings to accommodate required handrail extensions.  Figure 28 in AS 1428.1:2009		
D2.18: Fixed platforms, walkways stairways and ladders	Plant areas may be accessed via stairs and ladders compliant with AS 1657:2018.	-	CRA – Refer Annexure F
D2.19: Doorways and doors	> *Exit* doors that are power operated must be able to be opened manually under a force of not more than	-	CRA – Refer Annexure F

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	110 N if there is a malfunction or failure of the power source and if leading to road or open space, open automatically if there is a power failure or on the activation of a fire or smoke alarm anywhere in the *fire compartment* served by the door. > A power operated door in a path of travel to a required *exit* must be able to be opened manually under a force of not more than 110 N if there is a malfunction of the power source.		
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).	-	CRA – Refer Annexure F
D2.21: Operation of latch	All doors in a required *exit* or forming part of a required *exit* AND doors in a path of travel to a required *exit* must be readily openable without a key from the side that faces a person seeking egress, by– (iii) a single hand downward action or pushing action on a single device which is located between	-	CRA – Refer Annexure F

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

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	(ii) serves a *sole-occupancy unit* in a Class 6part of building with a floor area not more than 200m^2; or (iii) are fitted with a fail-safe device which automatically unlocks the door upon the activation of an AS 1670.1 detection system installed throughout the building and is readily openable when unlocked.		
D2.22: Re-entry from fire-isolated exits	Doors of the fire-isolated *exits* must not be locked from the inside unless the door is fitted with a fail-safe device which automatically unlocks the door upon the activation of a fire alarm and – (i) on at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or (ii) an intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation.	-	CRA – Refer Annexure F
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 F
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.	-	CRA – Refer Annexure F

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	(b) Where the lowest level of the window opening is less than 1.7m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with– (A) a device to restrict the window opening; or (B) a screen with secure fittings. (ii) A device or screen required by (i) must– (A) not permit a 125 mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the– (aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (c) A barrier with a height not less than 865 mm above the floor is required to an openable window– (i) in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and (ii) where the floor below the window is 4m or more above the surface beneath if the window is not covered by (a). (d) A barrier covered by (c) except for (e) must not– (i) permit a 125 mm sphere to pass through it; and		

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	(ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. (e) A barrier required by (c) to an openable window in— (i) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps.		
D2.25: Timber stairways: concession	-	-	N/A
Part D3 – Access for People with A Disability			
D3.0: Deemed-to-Satisfy Provisions	Informational	The building is required to be accessible in accordance with this part.	Refer to Separate Access Report

Section E: Services and Equipment			
Part E1 – Fire Fighting Equipment			
E1.0: Deemed-to-Satisfy Provisions	Informational	-	Noted
E1.3: Fire hydrants	As the building has a floor area greater than 500 m2, a fire hydrant system complying with AS 2419.1:2005 must be provided to serve the building.	-	CRA – Refer Annexure F
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 Class 6 and Class 7a parts of the building.	-	CRA – Refer Annexure F

Section E: Services and Equipment			
	All points on a floor shall be within reach of a 4 m hose stream issuing from a nozzle at the end of the hose laid on floor. The hose length shall not exceed 36 m.		
E1.5: Sprinklers	The building must be provided with a sprinkler system complying with Table E1.5 and Specification E1.5 installed throughout.	-	CRA – Refer Annexure F
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 (B) so that the travel distance from the entrance doorway of any *sole-occupancy unit* to the nearest fire extinguisher is not more than 10 m.	-	CRA – Refer Annexure F
E1.8: Fire control centres	> The building must be provided with a fire control centre facility in accordance with BCA Specification E1.8. > The fire control centre must be located so that egress from any part of its floor to a public road or open space does not involve changes in level which in aggregate exceed 300 mm.	As the building has an effective height of more than 50m the fire control centre must be within a separate room, complying with Specification E1.8. It is noted suitable provision has been made.	CRA – Refer Annexure F

Section E: Services and Equipment				
E1.9:	Fire precautions during construction	> During construction, not less than one portable fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required / temporary *exit*; and > After the building has reach an *effective height* of 12m, the required fire hydrants and fire hose reels must be operational on all floor / roof covered storeys, except for the 2 uppermost storeys; and all required booster connections must be installed.	-	Noted
E1.10:	Provision for special hazards	-	-	N/A
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.	-	CRA – Refer Annexure F
3.	Separation of sprinklered and non-sprinklered areas	-	The entire building is to be sprinkler protected.	CRA – Refer Annexure F
4.	Protection of openings	-	-	N/A
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.	The use of fast response sprinklers would need to be justified by the projects Fire Engineer if proposed.	CRA – Refer Annexure F

Section E: Services and Equipment				
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.	-	CRA – Refer Annexure F
7.	Water supply	A required sprinkler system in a building greater than 25 m in effective height must be provided with dual water supply except that a secondary water supply storage capacity of 25,000 litres may be used if – (i) the storage tank is located at the topmost storey of the building; and (ii) the building occupancy is classified as no more hazardous than Ordinary Hazard 2 (OH2) under AS 2118.1:2017; and (iii) an operational fire brigade service is available to attend a building fire.	-	CRA – Refer Annexure F
8.	Building occupant warning system	A required sprinkler system, must be connected to and activate a building occupant warning system complying with Clause 7 of Specification E2.2a.	-	CRA – Refer Annexure F
9.	Connection to Other Systems	Where a smoke hazard management system is installed and is actuated by smoke detectors, the sprinkler system must, wherever practicable, be arranged to also activate the smoke hazard management system.	-	CRA – Refer Annexure F
10.	Anti-tamper Devices	(a) Where a sprinkler system is installed – (i) in a space housing lift electrical and control equipment (including machine rooms, secondary floors and sheave rooms), any valves provided to control sprinklers in these spaces must be located adjacent to the space.	-	CRA – Refer Annexure F

Section E: Services and Equipment				
		(b) Any valves provided to control sprinklers required by (a) must be fitted with anti-tamper monitoring devices connected to a monitoring panel.		
11.	Sprinkler Systems in Carparks	-	-	CRA – Refer Annexure F
12.	Residential Care Buildings	-	-	N/A
13.	Sprinkler systems in lift installations	(a) Where sprinklers are installed in a space housing lift electrical and control equipment, including machine rooms, secondary floors and sheave rooms, sprinklers in these spaces must – (i) have heads protected from accidental damage by way of a guard that will not impair the performance of the head; and (ii) be capable of being isolated and drained, either separately or collectively, without isolating any other sprinklers within the building. (b) Valves provided to control sprinklers referred to in (a) must be installed in accordance with Clause 10(b).		CRA – Refer Annexure F
Part E1.8 – Fire Control Centres				
1.	Scope	Informational	-	Noted
2.	Purpose and content	A fire control centre must— (a) provide an area from which fire-fighting operations or other emergency procedures can be directed or controlled; and	It is noted that a fire control room is proposed.	CRA – Refer Annexure F

Section E: Services and Equipment				
		(b) contain controls, panels, telephones, furniture, equipment and the like associated with the required fire services in the building; and (c) not be used for any purpose other than the control of— (i) fire-fighting activities; and (ii) other measures concerning the occupant safety or security.		
3.	Location of fire control centre	A fire control centre must be so located in a building that egress from any part of its floor, to a road or open space, does not involve changes in level which in aggregate exceed 300 mm.	It is noted that the level change, to the road, in aggregate is greater than 300mm.	**PS** **Refer to Part 5.3 of Report**
4.	Equipment not permitted within a fire control centre	An internal combustion engine, pumps, sprinkler control valves, pipes and pipe fittings must not be located in a fire control centre but may be located in rooms accessed through the fire control centre.	-	CRA – Refer Annexure F
5.	Ambient sound level of fire control centre	(a) The ambient sound level within the fire control centre measured when all fire safety equipment is operating in the manner in which it operates in an emergency must not exceed 65 dB(A). (b) The measurement must be taken for a sufficient time to characterize the effects of all sound sources. Where there is not a great variation in noise level, a measurement time of 60 seconds may be used.	-	CRA – Refer Annexure F
6.	Construction of a fire control room	A fire control centre in a building more than 50 m in *effective height* must be in a separate room where— (a) the enclosing construction is of concrete, masonry or the like, sufficiently impact resistant to withstand the impact of any likely falling debris, and with an FRL of not less than 120/120/120; and	It is expected that the proposed fire control room will readily meet the requirements of this Clause.	CRA – Refer Annexure F

Section E: Services and Equipment				
		(b) any material used as a finish, surface, lining or the like within the room complies with the requirements of Specification C1.10; and (c) services, pipes, ducts and the like that are not directly required for the proper functioning of the fire control room do not pass through it; and (d) openings in the walls, floors or ceiling which separate the room from the interior of the building are confined to doorways, ventilation and other openings for services necessary for the proper functioning of the facility.		
7.	Protection of openings in a fire control room	Openings permitted by Clause 6 must be protected as follows: (a) Openings for windows, doorways, ventilation, service pipes, conduits and the like, in an external wall of the building that faces a road or open space, must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C3. (b) Openings in the floors, ceilings and internal walls enclosing a fire control room must, except for doorways, be protected in accordance with the Deemed-to-Satisfy Provisions of Part C3. (c) A door opening in the internal walls enclosing a fire-control room, must be fitted with a self-closing –/120/30 smoke sealed fire door. (d) Openings associated with natural or mechanical ventilation must— (i) not be made in any ceiling or floor immediately above or below the fire control room; and (ii) be protected by a –/120/– fire damper if the opening is for a duct through a wall required to have an FRL, other than an external wall.	-	CRA – Refer Annexure F

Section E: Services and Equipment				
8.	Doors to a fire control room	(a) Required doors to a fire control room must open into the room, be lockable and located so that persons using escape routes from the building will not obstruct or hinder access to the room. (b) The fire control room must be accessible via two paths of travel— (i) one from the front entrance of the building; and (ii) one direct from a public place or fire-isolated passageway which leads to a public place and has a door with an FRL of not less than –/120/30.	-	CRA – Refer Annexure F
9.	Size and content of a fire control room	(a) A fire control room must contain— (i) a Fire Indicator Panel and necessary control switches and visual status indication for all required fire pumps, smoke control fans and other required fire safety equipment installed in the building; and (ii) a telephone directly connected to an external telephone exchange; and (iii) a blackboard or whiteboard not less than 1200 mm wide x 1000 mm high; and (iv) a pin-up board not less than 1200 mm wide x 1000 mm high; and (v) a raked plan layout table of a size suitable for laying out the plans provided under (vi); and (vi) colour-coded, durable, tactical fire plans. (b) In addition, a fire control room may contain— (i) master emergency control panels, lift annunciator panels, remote switching controls for gas or electrical supplies and emergency generator backup; and	-	CRA – Refer Annexure F

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	(ii) building security, surveillance and management systems if they are completely segregated from all other systems. (c) A fire control room must— (i) have a floor area of not less than 10 m2 and the length of any internal side must be not less than 2.5 m; and (ii) if only the minimum prescribed equipment is installed — have a net floor area of not less than 8 m2 with a clear space of not less than 1.5 m2 in front of the Fire Indicator Panel; and (iii) if additional equipment is installed — have an additional area of not less than 2 m2 net floor area for each additional facility and a clear space of not less than 1.5 m2 in front of each additional control or indicator panel, and the area required for any path of travel through the room to other areas must be provided in addition to the requirements (ii) and (iii).		
10. Ventilation and power supply for a fire control room	(a) A fire control room must be ventilated by— (b) natural ventilation from a window or doorway in an external wall of the building which opens directly into the fire control room from a road or open space; or (c) a pressurisation system that only serves the fire control room, and— (d) is installed in accordance with AS 1668.1:2015 as though the room is a fire-isolated stairway; and (i) is activated automatically by operation of the fire alarm, or sprinkler system complying with Specification E1.5, installed in the building and manually by an over-riding control in the room; and	-	CRA – Refer Annexure F

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		(ii) provides a flow of fresh air through the room of not less than 30 air changes per hour when the system is operating and any door to the room is open; and (iii) has fans, motors and ductwork that form part of the system but not contained within the fire control room protected by enclosing construction with an FRL of not less than 120/120/120; and (iv) has any electrical supply to the fire control room or equipment necessary for its operation connected to the supply side of the main disconnection switch for the building, and no openable devices other than necessary doorways, pressure controlled relief louvres and windows that are openable by a key, must be constructed in the fire control room.		
11.	Sign for a fire control room	The external face of the door to the fire control room must have a sign with the words— FIRE CONTROL ROOM in letters of not less than 50 mm high and of a colour which contrasts with that of the background.	-	CRA – Refer Annexure F
12.	Lighting for a fire control room	Emergency lighting in accordance with the Deemed-to-Satisfy Provisions of Part E4 must be provided in a fire control room, except that an illumination level of not less than 400 lux must be maintained at the surface of the plan table.	-	CRA – Refer Annexure F
Part E2 – Smoke Hazard Management				
E2.0:	Deemed-to-Satisfy Provisions	Informational	-	Noted
E2.1:	Application of Part	Informational	-	Noted

Section E: Services and Equipment				
E2.2:	General requirements (including Tables E2.2a and E2.2b)	**Fire-isolated exits** All fire-isolated *exits* serving a storey above an *effective height* of 25 m must be provided with an automatic air pressurisation system for fire-isolated *exits* in accordance with AS 1668.1:2015. The automatic air pressurisation system applies to the entire *exit*. **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 6 parts** Zone pressurisation system is required to the Class 6 fire compartments due to them being part of vertically separated fire compartments. **Class 7a buildings** A Class 7a building including a basement provided with a mechanical ventilation system in accordance with AS 1668.2:2012 must comply with clause 5.5 of AS 1668.1:2015 except that fans with metal blades for operation at normal temperatures may be used, and the electrical power and control cabling need not be fire rated.	-	CRA – Refer Annexure F
E2.3:	Provisions for special hazards	-	-	N/A
Specification E2.2a – Smoke Detection and Alarm System				
1.	Scope	Informational	Noted	Noted
2.	Type of system	A required automatic smoke detection and alarm system must be provided in accordance with the following:	-	CRA – Refer Annexure F

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	(a) Class 2 buildings parts of a building— (i) a smoke alarm system complying with Clause 3; or (ii) a smoke detection system complying with Clause 4; or (iii) a combination of a smoke alarm system and a smoke detection system complying with Clause 5. (b) Class 6 building— a smoke detection system complying with Clause 4.		
3. Smoke alarm system	(a) All Class 2 buildings— (i) A smoke alarm system must— (A) consist of smoke alarms complying with AS 3786; and (B) be powered from the consumer mains source. (ii) In kitchens and other areas where the use of the area is likely to result in smoke alarms causing spurious signals— (A) any other alarm deemed suitable in accordance with AS 1670.1 may be installed provided that smoke alarms are installed elsewhere in the sole-occupancy unit in accordance with Clause 3(b)(i) and Clause 3(b)(ii); or (B) an alarm acknowledgement facility may be installed, except where the kitchen or other area is in a building protected with a sprinkler system complying with Specification E1.5, the alarms need not be installed in the kitchen or other areas likely to result in spurious signals.	-	CRA – Refer Annexure F

Section E: Services and Equipment			
	(b) Class 2 parts of a building — the following applies: (i) Alarms must be installed within each sole-occupancy unit, and located on or near the ceiling in any storey— (A) containing bedrooms— (aa) between each part of the sole-occupancy unit containing bedrooms and the remainder of the sole-occupancy unit; and (bb) where bedrooms are served by a hallway, in that hallway; and (B) not containing any bedrooms, in egress paths. (ii) Where there is more than one alarm installed within a sole-occupancy unit, alarms must be interconnected within that sole-occupancy unit. (iii) Subject to (iv), alarms must be— (A) installed in public corridors and other internal public spaces, located in accordance with the requirements for smoke detectors in AS 1670.1; and (B) connected to activate a building occupant warning system in accordance with Clause 7. (iv) In a Class 2 part of a building protected with a sprinkler system complying with Specification E1.5, alarms are not required in public corridors and other internal public spaces.		
4. Smoke detection system	(a) All Class 2 - 9 buildings— (i) A smoke detection system must—	-	CRA – Refer Annexure F

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	(A) subject to (b) and (c), comply with AS 1670.1; and (B) activate a building occupant warning system in accordance with Clause 7. (ii) In kitchens and other areas where the use of the area is likely to result in smoke detectors causing spurious signals— (A) any other detector deemed suitable in accordance with AS 1670.1 may be installed provided that smoke detectors are installed elsewhere in the sole-occupancy unit in accordance with the requirements for alarms in Clause 3(b)(i) and Clause 3(b)(ii); or (B) an alarm acknowledgement facility may be installed, except where the kitchen or other area is in a building protected with a sprinkler system complying with Specification E1.5, the detectors need not be installed in the kitchen or other areas likely to result in spurious signals. (b) Class 2 part of a building — the following applies: (i) Smoke detectors must be installed— (A) within each sole-occupancy unit, in accordance with the requirements for alarms in Clause 3(b)(i) and Clause 3(b)(ii); and (B) subject to (ii), in public corridors and other internal public spaces. (ii) In a Class 2 part of a building protected with a sprinkler system complying with Specification E1.5, smoke detectors are not required in public corridors and other internal public spaces.		

Section E: Services and Equipment				
5.	Combined smoke alarm and smoke detection system	(a) A Class 2 part of a building provided with a combination of a smoke alarm system and smoke detection system in accordance with Clause 2 must— (i) be provided with a smoke alarm system complying with Clause 3 within sole-occupancy units; and (ii) subject to (b), be provided with a smoke detection system complying with Clause 4 in areas not within sole-occupancy units. (b) In a Class 2 or 3 building or Class 4 part of a building protected with a sprinkler system complying with Specification E1.5 (other than a FPAA101D or FPAA101H system), smoke detectors are not required in public corridors and other internal public spaces.	-	CRA – Refer Annexure F
6.	Smoke detection for smoke control system	(a) Smoke detectors required to activate air pressurisation systems for fire-isolated exits and zone pressurisation systems must— (i) be installed in accordance with AS 1670.1; and (ii) have additional smoke detectors installed adjacent to each bank of lift landing doors set back horizontally from the door openings by a distance of not more than 3 m. (b) Smoke detectors provided to activate a smoke control system must— (i) (A) form part of a building fire or smoke detection system complying with AS 1670.1; or	-	CRA – Refer Annexure F

Section E: Services and Equipment				
		(B) be a separate dedicated system incorporating control and indicating equipment complying with AS 1670.1; and (ii) activate a building occupant warning system complying with Clause 7, except that smoke detectors provided solely to initiate automatic shutdown of air-handling systems in accordance with (b)(i) need not activate a building occupant warning system.		
7.	Building occupant warning system	Subject to E4.9, a building occupant warning system provided as part of a smoke hazard management system must comply with clause 3.22 of AS 1670.1 to sound through all occupied areas except— (a) in a Class 2 part of a building provided with a smoke alarm system in accordance with Clause 3(b)(iii)— (i) the sound pressure level need not be measured within a sole-occupancy unit if a level of not less than 85 dB(A) is provided at the door providing access to the sole-occupancy unit; and (ii) the inbuilt sounders of the smoke alarms may be used to wholly or partially meet the requirements; and (b) in a Class 2 part of a building provided with a smoke detection system in accordance with Clause 4(b), the sound pressure level from a building occupant warning system need not be measured within a sole-occupancy unit if a level of not less than 100 dB(A) is provided at the door providing access to the sole-occupancy unit.	Note that the building is required to be provided with an EWIS under Clause E4.9.	CRA – Refer Annexure F
8.	System Monitoring	-	System monitoring is required to be provided as part of the sprinkler system under Clause E1.5 and AS 2118.1	N/A
Part E3 – Lift Installations				

Section E: Services and Equipment				
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 F
E3.2:	Stretcher facility in lifts	A stretcher facility must be provided to an emergency lift required by E3.4. A stretcher facility must be provided to passenger lifts installed to serve any storey above an *effective height* of 12 m. A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above floor level.	-	CRA – Refer Annexure F
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 F
E3.4:	Emergency lifts	a) At least one emergency lift complying with (d) must be installed in— i. a building which has an effective height of more than 25 m; and b) An emergency lift may be combined with a passenger lift and must serve those storeys served by the passenger lift so that all storeys of the building served by passenger lifts are served by at least one emergency lift. c) Where two or more passenger lifts are installed and serve the same storeys, excluding a lift that is within an atrium and not contained wholly within a shaft—	-	CRA – Refer Annexure F

Section E: Services and Equipment			
	i. at least two emergency lifts must be provided to serve those storeys; and ii. if located within different shafts, at least one emergency lift must be provided in each shaft. d) An emergency lift must— i. be contained within a fire-resisting shaft in accordance with C2.10; and ii. if the building has an effective height of more than 75 m, have a rating of at least— a. 600 kg if not provided with a stretcher facility; or b. 900 kg if provided with a stretcher facility.		
E3.5: Landings	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D.	Refer to Section D assessment.	CRA – Refer Annexure F
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 F
E3.7: Fire service controls	The lifts serving any storey above an *effective height* of 12 m must be provided with: (a) A fire service recall control switch complying with E3.9 for— (i) a group of lifts; or (ii) a single lift not in a group that serves the storey. (b) A lift car fire service drive control switch complying with E3.10 for every lift.	-	CRA – Refer Annexure F

Section E: Services and Equipment				
E3.8:	Aged care buildings	-	-	N/A
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 F
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 F
Specification E3.1 – Lift Installations				
1.	Scope	Informational	-	Noted
2.	Lift cars exposed	(a) A lift car exposed to solar radiation directly, or indirectly by re-radiations, must have – (i) mechanical ventilation at a rate of one air change per minute; or (ii) mechanical cooling. (b) A 2-hour alternative power source for ventilation or mechanical cooling at (a) must be provided in the event of normal power loss.	-	CRA – Refer Annexure F
3.	Lift car emergency lighting	A lift car must have an emergency lighting system designed – (a) to come on automatically upon failure of the normal light supply; and (b) to provide at least 20 lux of lighting for 2 hours on the alarm initiation button.	-	CRA – Refer Annexure F
4.	Cooling of lift shaft	While a lift in a lift shaft is in service, the cooling of the lift shaft must –	-	CRA – Refer Annexure F

Section E: Services and Equipment				
		(a) ensure that the dry bulb air temperature in the lift shaft does not exceed 40°C; and (b) if the cooling is by a ventilation system, be provided with an air changed rate determined using a temperature rise of no more than 5 K.		
5.	Lift foyer access	Where there is a security foyer in a building, access may be via locked security doors provided – (a) security doors revert to the unlocked state in the event of – (i) power failure; or (ii) fire alarm; and (b) locked foyer areas are monitored by closed circuit television and intercom system to a 24-hour staffed location.	-	CRA – Refer Annexure F
6.	Emergency access doors in a single enclosed lift shaft	-	-	N/A
Part E4 – Visibility In An Emergency, Exit Signs And Warning Systems				
E4.0:	Deemed-to-Satisfy Provisions	Informational	-	Noted
E4.2:	Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with Clause E4.2 of the BCA and AS/NZS 2293.1:2018.	-	CRA – Refer Annexure F
E4.3:	Measurement of distance	Informational	-	Noted
E4.4:	Design and operation of emergency lighting	The emergency lighting system must comply with AS/NZS 2293.1:2018.	-	CRA – Refer Annexure F

Section E: Services and Equipment				
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 F
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 F
E4.7:	Class 2 and 3 buildings and Class 4 Parts: Exemptions	Informational	-	Noted
E4.8:	Design and operation of exit signs	*Exit* signs must comply with AS/NZS 2293.1:2018 and be clearly visible at all times when the building is occupied.	-	CRA – Refer Annexure F
E4.9:	Emergency warning and intercom systems	An Emergency warning and intercom system complying where applicable with AS 1670.4:2018 must be installed within the building.	-	CRA – Refer Annexure F

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 5.3 of Report**
F1.1:	Stormwater drainage	Stormwater drainage to comply with AS/NZS 3500.3:2018.	-	CRA – Refer Annexure F

Section F: Health and Amenity				
F1.4:	External above ground membranes	Waterproofing membranes for external above ground use to comply with AS 4654 Parts 1 and 2:2012.	-	CRA – Refer Annexure F
F1.5:	Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	-	CRA – Refer Annexure F
F1.6:	Sarking	*Sarking-type materials* used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2:2017.	-	CRA – Refer Annexure F
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 F
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 F
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 F
F1.11:	Provision of floor wastes	In Class 2 part of a building, a bathroom or laundry is to have a floor waste where the floor is graded to the floor waste to permit the drainage of water.	-	CRA – Refer Annexure F
F1.12:	Sub-floor ventilation	-	-	N/A
F1.13:	Glazed Assemblies	Glazed assemblies are to comply with AS 2047:2014 and AS 1288:2006.		CRA – Refer Annexure F
Part F2 – Sanitary and Other Facilities				

Section F: Health and Amenity				
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.	-	CRA – Refer Annexure F
F2.2:	Calculation of number of occupants and facilities	Informational	-	CRA – Refer Annexure F
F2.3:	Facilities in Class 3 to 9 buildings (including Table F2.3)	(a) Except where permitted by (b), (c), (f), F2.4(a) and F2.4(b), separate sanitary facilities for males and females must be provided for Class 3, 5, 6, 7, 8 or 9 buildings in accordance with Table F2.3. (b) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (c) If the majority of employees are one sex, not more than 2 employees of the other sex may share toilet facilities if the facilities are separated by means of walls, partitions and doors to afford privacy. (d) Employees and the public may share the same facilities in a Class 6 building (other than a school or early childhood centre) provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. (e) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females. (f) Not less than one washbasin must be provided where closet pans or urinals are provided.	It is considered that each individual retail unit can be provided with a required sanitary facility.	CRA – Refer Annexure F

Section F: Health and Amenity				
F2.4:	Accessible sanitary facilities (including Table F2.4)	-	-	Refer to Separate Access Report
F2.5:	Construction of sanitary compartments	(a) Sanitary compartments must have doors and partitions that separate adjacent compartments and extend— (i) from floor level to the ceiling in the case of a unisex facility; or (ii) to a height of not less than 1.5 m above the floor if primary school children are the principal users; or (iii) 1.8 m above the floor in all other cases. (b) The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F2.5, between the closet pan within the sanitary compartment and the doorway.	-	CRA – Refer Annexure F
F2.6:	Interpretation: urinals and washbasins	Informational	-	Noted
F2.8:	Waste Management	-	-	N/A
F2.9:	Accessible adult change facilities	-	-	N/A
Part F3 – Room Sizes				

Section F: Health and Amenity				
F3.0:	Deemed-to-Satisfy Provisions	Informational	-	Noted
F3.1:	Height of rooms and other spaces	(a) The height of rooms and other spaces must be not less than— (b) in a Class 2 part of a building— (i) a kitchen, laundry, or the like — 2.1 m; and (ii) a corridor, passageway or the like — 2.1 m; and (iii) a habitable room excluding a kitchen — 2.4 m; and (c) in a Class 6 building— (i) except as allowed in (ii) and (f) — 2.4 m; and (ii) a corridor, passageway, or the like — 2.1 m; and (d) in any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and (ii) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like.		CRA – Refer Annexure F
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.	Appropriate provision for natural lighting has been to all habitable rooms.	Complies

Section F: Health and Amenity				
F4.2:	Methods and extent of natural lighting	(a) Natural light must be provided by: (i) Windows: (A) with an aggregate light transmitting area of not less than 10% the floor area of the room; and (B) that are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii) Rooflights, that: (A) have an aggregate light transmitting area of not less than 3% the floor area of the room; or (iii) a proportional combination of windows and roof lights required by (i) and (ii). (b) A required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must be not less than a horizontal distance from that boundary or wall that is the greater of – (c) 1m; and (d) 50% of the square root of the exterior height of the wall in which the window is located, measured from its sill.	There are windows on the Northern side of the building that will be reliant upon the width of the easement to achieve the required access to natural light.	**PS** **Refer to Part 5.3 of Report**
F4.3:	Natural light borrowed from adjoining room	(a) Natural light to a room in a Class 2 building part of a building, may come through one or more glazed panels or openings from an adjoining room (including an enclosed verandah) if— (i) both rooms are within the same sole-occupancy unit or the enclosed verandah is on common property; and (ii) the glazed panels or openings have an aggregate light transmitting area of not less than	-	CRA – Refer Annexure F

Section F: Health and Amenity			
	10% of the floor area of the room to which it provides light; and (iii) the adjoining room has— (A) windows , excluding roof lights, that— (aa) have an aggregate light transmitting area of not less than 10% of the combined floor areas of both rooms; and (bb) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (B) roof lights , that— (aa) have an aggregate light transmitting area of not less than 3% of the combined floor areas of both rooms; and (bb) are open to the sky; or (C) a proportional combination of windows and roof lights required by (A) and (B). (b) The areas specified in (a)(ii) and (a)(iii) may be reduced as appropriate if direct natural light is provided from another source.		
F4.4: Artificial Lighting	Lighting to all areas is to comply with AS/NZS 1680.0:2009.	-	CRA – Refer Annexure F
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 F

Section F: Health and Amenity			
F4.6: Natural ventilation	(a) Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened— (i) with an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated; and (ii) open to— (A) a suitably sized court, or space open to the sky; or (B) an open verandah, carport, or the like; or (C) an adjoining room in accordance with F4.7.	-	CRA – Refer Annexure F
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 F
F4.8: Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a – > kitchen or pantry > restaurant > workplace normally occupied by more than one person.	-	CRA – Refer Annexure F
F4.9: Airlocks	If sanitary compartments are prohibited from opening directly to another room: > access must be by an airlock, hallway or other room with a floor area of not less than 1.1m^2 and fitted with self-closing doors at all access doorways; or > the sanitary compartments must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.	-	CRA – Refer Annexure F

Section F: Health and Amenity			
F4.11: Carparks	Every storey of a carpark (except an open deck carpark) must have: > a system of mechanical ventilation complying with AS 1668.2:2012; or > a system of natural ventilation complying with Section 4 of AS 1668.4:2012.	-	CRA – Refer Annexure F
F4.12: Kitchen local exhaust ventilation	-	-	N/A
Part F5 – Sound Transmission and Insulation			
F5.0: Deemed-to-Satisfy Provisions	Informational	-	Noted
F5.1: Application of Part	Informational	-	Noted
F5.2: Determination of airborne sound insulation ratings	A form of construction required to have an airborne sound insulation rating must— (a) have the required value for weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation term (R_w + Ctr) determined in accordance with AS/NZS ISO 717.1 using results from laboratory measurements; or (b) comply with Specification F5.2.	-	CRA – Refer Annexure F
F5.3: Determination of impact sound insulation ratings	(a) A floor in a building required to have an impact sound insulation rating must— (i) have the required value for weighted normalised impact sound pressure level with spectrum adaptation term ($L_{n,w}$ + CI) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or	-	CRA – Refer Annexure F

Section F: Health and Amenity				
		(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 $L_{n,w}+C_l$ (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 F
F5.5:	Sound insulation rating of walls	(a) A wall in a Class 2 building must: (i) have an $R_w + C_{tr}$ (airborne) not less than 50 if it separates *sole-occupancy units*; and (ii) have an R_w (airborne) not less than 50 if it separates a sole occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and (iii) be of discontinuous construction in accordance with F5.3(b) if it separates: (A) a bathroom, sanitary compartment, laundry or kitchen in one *sole-occupancy*	-	CRA – Refer Annexure F

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	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. (b) Where a wall required to have sound insulation has a floor above, the wall must continue to: (i) the underside of the floor above; or (ii) a ceiling that provides the sound insulation required for the wall. (c) Where a wall required to have sound insulation has a roof above, the wall must continue to: (i) the underside of the roof above; or (ii) a ceiling that provides the sound insulation required for the wall. (d) Doorways in walls separating the Class 2 *sole-occupancy units* from a stairway, public corridor, public lobby or the like must be provided with a door assembly that has an R_w not less than 30.		
F5.6: Sound insulation rating of services	(a) If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one *sole-occupancy unit*, the duct or pipe must be separated from the rooms of any sole occupancy unit by construction with an $R_w + C_{tr}$ (airborne) not less than— (i) 40 if the adjacent room is a habitable room (other than a kitchen); or (ii) 25 if the adjacent room is a kitchen or non-habitable room.	-	CRA – Refer Annexure F

Section F: Health and Amenity				
		(b) If a storm water pipe passes through a *sole-occupancy unit* it must be separated in accordance with (a)(i) and (ii).		
F5.7:	Sound isolation of pumps	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating pump.	-	CRA – Refer Annexure F
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 4200.1:2017 and installed in accordance with AS 4200.2:2017.		CRA – Refer Annexure F
F6.3:	Flow rate and discharge of exhaust systems	(a) An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— (i) 25 L/s for a bathroom or sanitary compartment; and (ii) 40 L/s for a kitchen or laundry. (b) Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air. (c) Exhaust from a bathroom, sanitary compartment, or laundry must be discharged— (i) directly or via a shaft or duct to outdoor air; or (ii) to a roof space that is ventilated in accordance with F6.4	-	CRA – Refer Annexure F

Section F: Health and Amenity			
F6.4: Ventilation of roof spaces	(a) 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. (b) Openings required by (a) must have a total unobstructed area of 1/300 of the respective ceiling area if the roof pitch is greater than 22º, or 1/150 of the respective ceiling area if the roof pitch is less than or equal to 22º. (c) 30% of the total unobstructed area required by (b) must be located more than 900 mm below the ridge or highest point of the roof space, measured vertically, with the remaining required area provided by eave vents.	-	CRA – Refer Annexure F

Section G: Ancillary Provisions			
Part G1 – Minor Structures and Components			
G1.0: Deemed-to-Satisfy Provisions	Informational	-	Noted
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 F
Part G3 – Atrium Construction			

Section G: Ancillary Provisions				
G3.1:	Atriums Affected by the Part	This Part does not apply to an atrium which— (a) connects only 2 storeys; or (b) connects only 3 storeys if— (i) each storey is provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 throughout; and (ii) one of those storeys is situated at a level at which there is direct egress to a road or open space.	The proposed voids are noted to be limited in their connection to two consecutive storeys.	N/A

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

Section J: Energy Efficiency (Class 6, 7a)				
Part J0 – Energy Efficiency				
J0.1:	Application of Section J	Informational	-	Noted
J0.2:	Heating & cooling loads of Sole Occupancy Units to Class 2 & 4 parts	Not applicable, clause relevant to class 2 & 4 only	-	NA
J0.3:	Ceiling fans	Not applicable	-	NA
J0.4:	Roof thermal breaks	Not applicable, clause relevant to J0.2 only	-	NA

Section J: Energy Efficiency (Class 6, 7a)			
J0.5: Wall thermal breaks	Not applicable, clause relevant to J0.2 only		NA
Part J1 – Building Fabric			
J1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
J1.1: Application of Part	The provisions of Part J1 apply to building elements forming part of the *envelope* of the building.		CRA – Refer Annexure F
J1.2: Thermal construction general	Where required insulation is to comply with AS/NZS 4859.1:2018 and be installed in accordance with this clause. The required Total R-Value and Total System U-Value, must be determined in accordance with Clause J1.2 (e).		CRA – Refer Annexure F
J1.3: Roof and ceiling construction	(c) A roof or ceiling must achieve a Total R-Value greater than or equal to— (i) in climate zones 1, 2, 3, 4 and 5, R3.7 for a downward direction of heat flow; and (ii) in climate zone 6, R3.2 for a downward direction of heat flow; and (iii) in climate zone 7, R3.7 for an upward direction of heat flow; and (iv) in climate zone 8, R4.8 for an upward direction of heat flow. (d) In climate zones 1, 2, 3, 4, 5, 6 and 7, the solar absorptance of the upper surface of a roof must be not more than 0.45.		CRA – Refer Annexure F
J1.4: Roof lights	Any roof lights must have –		CRA – Refer Annexure F

Section J: Energy Efficiency (Class 6, 7a)			
	(a) a total area of not more than 5% of the floor area of the room & space served; and (b) transparent and translucent elements with performance of – (i) Total system SHGC, in accordance with table J1.4, and (ii) Total system U-value, not more than U3.9		
J1.5: Walls	(a) The Total System U-Value of wall-glazing construction must not be greater than— (i) U2.0; and (b) The Total System U-Value of display glazing must not be greater than U5.8. (c) The Total System U-Value of wall-glazing construction must be calculated in accordance with Specification J1.5a. (d) Wall components of a wall-glazing construction must achieve a minimum Total R-Value of— (i) where the wall is less than 80% of the area of the wall-glazing construction, R1.0; or (ii) where the wall is 80% or more of the area of the wall-glazing construction, the value specified in Table J1.5a. (e) The solar admittance of externally facing wall-glazing construction must not be greater than— (i) the values specified in Table J1.5b; and (f) The solar admittance of a wall-glazing construction must be calculated in accordance with Specification J1.5a. (g) The Total system SHGC of display glazing must not be greater than 0.81 divided by the applicable	-	CRA – Refer Annexure F

Section J: Energy Efficiency (Class 6, 7a)			
	shading factor specified in Clause 7 of Specification J1.5a.		
J1.6: Floors	A floor must achieve the Total R-Value specified in Table J1.6.	-	CRA – Refer Annexure F
Part J2 – Glazing			
J2.0: Deemed-to-Satisfy Provisions	Part J2 has deliberately been left blank from the BCA2019	-	Noted
Part J3 – Building Sealing			
J3.0: Deemed-to-Satisfy Provisions	Informational	-	Noted
J3.1: Application of Part	The requirements of this Part apply to elements forming the *envelope* of the building other than: (a) a building in a climate zones 1, 2, 3 and 5 where the only means of air-conditioning is by using an evaporative cooler; or (b) a permanent building opening necessary for the safe operation of a gas appliance; (c) a building or space where mechanical ventilation required by Part F4 provides sufficient pressurisation to prevent infiltration; (d) parts of building that cannot be fully enclosed.	-	Noted
J3.2: Chimneys and flues	-	-	N/A
J3.3: Roof lights	-	-	N/A

Section J: Energy Efficiency (Class 6, 7a)			
J3.4: Windows and doors	(h) A door, openable window or the like must be sealed when forming part of the *envelope*; or (i) 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. (j) 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. (k) An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, revolving door or the like, other than– (i) where the conditioned space has a floor area of not more than 50m2; or (ii) where a café, restaurant, open front shop or the like has– (A) a 3m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and (B) at all other entrances to the café, restaurant, open from shop of the like, self-closing doors	-	CRA – Refer Annexure F

Section J: Energy Efficiency (Class 6, 7a)				
J3.5:	Exhaust fans	The exhaust fans serving conditioned spaces or habitable room in climate 4 - 8, must be fitted with a sealing device, such as a self-closing damper of the like.	-	CRA – Refer Annexure F
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 F
J3.7:	Evaporative Coolers	The evaporative cooler must be fitted with a self-closing damper or like.	-	CRA – Refer Annexure F
Part J4				
J4.0:		This part has deliberately been left blank in the BCA2019		N/A
Part J5 – Air Conditioning and Ventilation Systems				
J5.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
J5.1:	Application of Part	Informational	Noted	Noted
J5.2:	Air-conditioning systems	Clause contains requirements for air conditioning system control.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
J5.3:	Mechanical ventilation system control	Clause contains requirements for mechanical ventilation system control.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
J5.4:	Fan systems	Clause contains requirements for fans, ductwork and duct components.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F

Section J: Energy Efficiency (Class 6, 7a)				
J5.5:	Ductwork Insulation	Clause contains requirements for ductwork insulation.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
J5.6:	Ductwork Sealing	Ductwork in an air-conditioning system with a capacity of 3000 L/s or greater, not located within the only or last room served by the system, must be sealed against air loss in accordance with the duct sealing requirements of AS 4254.1 and AS 4254.2 for the static pressure in the system.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
J5.7:	Pump Systems	Clause contains requirements for pumps and pipework that form part of air-conditioning systems.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
J5.8:	Pipework Insulation	Clause contains requirements for pipework insulation.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
J5.9:	Space Heating	Clause contains requirements for space heating.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
J5.10:	Refrigerant Chillers	Clause contains requirements for air-conditioning system refrigerant chillers.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
J5.11:	Unitary Air-Conditioning Equipment	Clause contains requirements for unitary air-conditioning equipment.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
J5.12:	Heat Rejection Equipment	Clause contains requirements for heat rejection equipment.	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure F
Part J6 – Artificial Lighting and Power				
J6.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
J6.1:	Application of Part	Informational	Noted	Noted

Section J: Energy Efficiency (Class 6, 7a)				
J6.2:	Artificial lighting	Artificial lighting must comply with BCA Clause J6.2.	Design certification to be provided by the electrical designer.	CRA – Refer Annexure F
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 F
J6.4:	Interior decorative and display lighting	Lighting falling under this clause is to be separately switched from other lighting, be under a manual switch and controlled with a time switch.	Design certification to be provided by the electrical designer.	CRA – Refer Annexure F
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 F
J6.6:	Boiling water and chilled water storage units	The power supply to a fixed boiling water or chilled water storage unit must be controlled by a time switch in accordance with BCA Specification J6.	Design certification to be provided by the electrical designer.	CRA – Refer Annexure F
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).	Design certification to be provided by the electrical designer.	CRA – Refer Annexure F
J6.8:	Escalators and moving walkways	-	-	N/A
Part J7 – Heated Water Supply				
J7.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
J7.2:	Heated water supply system	A heated water supply system for food preparation and sanitary purposes must be designed and installed in		CRA – Refer Annexure F

Section J: Energy Efficiency (Class 6, 7a)			
	accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.		
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	(e) A building with a floor area of more than 500m^2 must have an energy meter configured to record the time-of-use consumption of gas and electricity. (f) A building with a floor area of more than 2,500m^2 must have the energy meters configured to enable individual time-of-use energy consumption data recording, in accordance with (c), of the energy consumption of –: ○ air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and ○ artificial lighting; and ○ appliance power; and ○ central hot water supply; and ○ internal transport devices including lifts, escalators and moving walkways where there is more than one serving the building; and ○ other ancillary plant. (g) Energy meters required by (b) must be interlinked by a communication system that collates the time-of-use energy consumption data to a single	-	CRA – Refer Annexure F

Section J: Energy Efficiency (Class 6, 7a)			
	interface monitoring system where it can be stored, analysed and reviewed. (h) The provisions of (b) do not apply to a Class 2 building with a floor area of more than 2500 m^2 where the total area of the common areas is less than 500 m^2.		

Section J: Energy Efficiency (Class 2 & 4)			
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– (i) 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. (j) 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.' (k) for general thermal construction, comply with J1.2; and (l) for thermal breaks, comply with J0.4 and J0.5; and	-	CRA – Refer Annexure F

Section J: Energy Efficiency (Class 2 & 4)			
	(m) for compensating for a loss of ceiling insulation, comply with J0.4; and (n) for floor edge insulation, comply with J1.6(b) and J1.6 (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: (o) where the only means of air-conditioning is by using an evaporative cooler; (p) a building ventilation opening necessary for the safe operation of a gas appliance; (q) parts of the building that cannot be fully enclosed.	-	Noted
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: (l) J3.2 Chimneys and flues; and (m) J3.3 Roof lights; and (n) J3.4 (a) to (d) windows and; (o) J3.5 Exhaust fans; and (p) J3.6 Construction of ceilings, walls and floors; and (q) J3.7 Evaporative coolers.	-	CRA – Refer Annexure F
J3.2: Chimneys and flues	-	-	N/A
J3.3: Roof lights	-	-	N/A

Section J: Energy Efficiency (Class 2 & 4)			
J3.4: Windows and doors	(r) A door, openable window or the like must be sealed— (i) when forming part of the *envelope*; or (ii) in climate zones 4, 5, 6, 7 or 8. (s) The above does not apply to: (i) a window complying with AS 2047:2014; 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. (t) 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. (u) An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, revolving door or the like, other than– (i) where the conditioned space has a floor area of not more than 50m2; or (ii) where a café, restaurant, open front shop or the like has– (A) a 3m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and (B) at all other entrances to the café, restaurant, open from shop of the like, self-closing doors	-	CRA – Refer Annexure F

Section J: Energy Efficiency (Class 2 & 4)			
J3.5: Exhaust Fans	The exhaust fans serving conditioned spaces or habitable room in climate 4 - 8, must be fitted with a sealing device, such as a self-closing damper of the like.	-	CRA – Refer Annexure F
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 F
J3.7: Evaporative Coolers	The evaporative cooler must be fitted with a self-closing damper or like when serving heated space OR in climate zones 4 - 8.	-	CRA – Refer Annexure F
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): (v) for air-conditioning system control: J5.2; and (w) for mechanical ventilation system control: J5.3; and (x) for fan systems: J5.4; and (y) for ductwork insulation: J5.5; and (z) for ductwork sealing: J6.6; and	-	Noted

Section J: Energy Efficiency (Class 2 & 4)				
		(aa) for pump systems: J5.7; and (bb) for pipework insulation: J5.8; and (cc) for refrigerant chillers: J5.10; and (dd) for unitary air-conditioning equipment: J5.11; and (ee) 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 F
J5.3:	Mechanical ventilation system control	Compliance required, design certification to be provided by Mechanical Engineer.	-	CRA – Refer Annexure F
J5.4:	Fan systems	Compliance required, design certification to be provided by Mechanical Engineer.	-	CRA – Refer Annexure F
J5.5:	Ductwork Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	-	CRA – Refer Annexure F
J5.6:	Ductwork Sealing	Compliance required, design certification to be provided by Mechanical Engineer.	-	CRA – Refer Annexure F
J5.7:	Pump Systems	Compliance required, design certification to be provided by Mechanical Engineer.	-	CRA – Refer Annexure F
J5.8:	Pipework Insulation	Compliance required, design certification to be provided by Mechanical Engineer.	-	CRA – Refer Annexure F
J5.10:	Refrigerant Chillers	Compliance required, design certification to be provided by Mechanical Engineer.	-	CRA – Refer Annexure F

Section J: Energy Efficiency (Class 2 & 4)			
J5.11: Unitary Air-Conditioning Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	-	CRA – Refer Annexure F
J5.12: Heat Rejection Equipment	Compliance required, design certification to be provided by Mechanical Engineer.	-	CRA – Refer Annexure F
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 F
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

Section J: Energy Efficiency (Class 2 & 4)			
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	(r) A building with a floor area of more than 500m2 must have an energy meter configured to record the time-of-use consumption of gas and electricity. (s) A building with a floor area of more than 2,500m2 must have the energy meters configured to enable individual time-of-use energy consumption data recording, in accordance with (c), of the energy consumption of –: ○ air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and ○ artificial lighting; and ○ appliance power; and ○ central hot water supply; and ○ internal transport devices including lifts, escalators and moving walkways where there is more than one serving the building; and ○ other ancillary plant. (t) Energy meters required by (b) must be interlinked by a communication system that collates the time-of-use energy consumption data to a single interface monitoring system where it can be stored, analysed and reviewed. (u) The provisions of (b) do not apply to a Class 2 building with a floor area of more than 2500 m^2 where the total area of the common areas is less than 500 m^2.	-	CRA – Refer Annexure F

ANNEXURE E DEFINITIONS

Annexure E - Definitions

Effective height

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

Envelope

Envelope, for the purposes of Section J in Volume One, means the parts of a building's fabric that separate a conditioned space or habitable room from—

(a) the exterior of the building; or

(b) a non-conditioned space including—

(i) the floor of a rooftop plant room, lift-machine room or the like; and

(ii) the floor above a carpark or warehouse; and

(iii) the common wall with a carpark, warehouse or the like.

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.

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

Fire compartment

Fire compartment means –

(a) the total space of a building; or

(b) when referred to in—

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

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

Fire-resistance level (FRL)

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

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order.

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

Fire-source feature

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

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

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

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.

ANNEXURE F BCA COMPLIANCE SPECIFICATION

Annexure F – 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. The parts of different classifications located alongside one another in the same storey will be separated in accordance with Clause C2.8 and Specification C1.1 of BCA2019.
7. Floors separating storeys of different classifications will comply with BCA Clause C2.9 of BCA2019.
8. Equipment will be separated in accordance with Clause C2.12 of BCA2019.
9. The electricity substation, any main switch room sustaining emergency equipment required to operate in emergency mode, will be separated from the remaining building with construction having an FRL 120/120/120 and provided with self-closing -/120/130 fire doors in accordance with Clause C2.13 of BCA2019.
10. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C3.5 of BCA2019.
11. 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.
12. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C3.9 of BCA2019.
13. 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.
14. 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.
15. The lift doors will be --/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C3.10 of BCA2019.
16. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C3.11 of BCA2019.
17. Columns protected by light weight construction will achieve an FRL not less than the FRL for the element it is penetrating, in accordance with Clause C3.17 of BCA2019.

18. 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 building, in accordance with Specification C1.1 Clause 2.3 BCA2019.
19. 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.
20. 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.
21. Fire doors will comply with AS 1905.1:2015 and Specification C3.4 of BCA2019.
22. The required exits will be fire-isolated in accordance with Clause D1.3 of BCA2019.
23. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
24. The fire-isolated exits will be in accordance with Clause D1.7 of BCA2019.
25. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
26. The ladder from the plant, lift machine rooms, and electricity network substation in lieu of a stairway will be in accordance with Clause D1.16 of BCA2019.
27. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
28. 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.
29. The non-fire isolated stairs will be constructed in accordance with Clause D2.3 of BCA2019.
30. 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.
31. The fire-isolated passageway will be in accordance with Clause D2.11 of BCA2019.
32. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
33. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.
34. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
35. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the machinery room, boiler house, lift-machine room, plant-room, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS 1657:2013 or Part D2 of BCA2019.
36. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
37. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019

38. Re-entry doors from the fire-isolated exits will be in accordance with Clause D2.22 of BCA2019.
39. Signage will be provided on fire and smoke doors in accordance with Clause D2.23 of BCA2019.
40. 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.
41. The fire control centre will be in accordance with Specification E1.8 or BCA2019.
42. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.
43. Non-illuminated exit signage will be installed in accordance with Clause E4.7, and of BCA2019.
44. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2:2012.
45. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
46. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
47. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS 3740:2010.
48. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
49. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F1.11 of BCA2019.
50. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS 1288:2006 / AS 2047:2014.
51. Sanitary facilities will be provided in the building in accordance with Clause F2.1, Table F2.1, Clause F2.3 and Table F2.3 of BCA2019.
52. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.
53. A slop-hopper will be provided in accordance with Clause F2.8 of BCA2019.
54. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
55. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.
56. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.
57. Water closets and urinals will be located in accordance with Clause F4.8 of BCA2019.
58. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
59. Pliable building membranes installed in external walls will comply with Clause F6.2 of BCA2019 and where a pliable building membrane is not installed in an external wall, the primary water control layer will be separated from water sensitive materials by a drained cavity.
60. Every storey of the carpark will be provided with an adequate system of permanent natural or mechanical ventilation in accordance with Clause F4.11 of BCA2019.
61. A safe manner for cleaning of windows located 3 or more storeys above ground level will be provided in accordance with the Work Health & Safety Act 2011 and regulations made under that Act in accordance with NSW G1.101 of BCA2019.

62. The construction of the residential portions of the development will be undertaken in accordance with the relevant BASIX commitments that form part of the Development Consent approval.
63. Essential fire or other safety measures must be maintained and certified on an ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2000.
64. Building Fabric and Thermal Construction will be in accordance with Part J1 of BCA2019.
65. Glazing will be in accordance with Part J1 of BCA2019.
66. Building sealing will be in accordance with Part J3 of BCA2019.
67. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2019.

Electrical Services Design Certification:

68. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019.
69. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
70. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
71. An emergency warning and intercom system (EWIS) will be provided to the building in accordance with Clause E4.9 of BCA2019.
72. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.
73. Lighting power and controls will be installed in accordance with Part J6 of BCA2019.
74. Electrical conductors located within the building that supply a main switchboard that sustains emergency equipment will comply with Clause C2.13 of BCA2019.

Hydraulic Services Design Certification:

75. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
76. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS 2419.1:2005 as required.
77. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2019 and AS 2441:2005.
78. A sprinkler system will be installed in accordance with Clause E1.5 of BCA2019, Specification E1.5 and appropriate part(s) of AS 2118.
79. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.
80. 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:

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

84. Every storey of the car park will be ventilated in accordance with Clause F4.11 of BCA2019 and where not naturally ventilated it will be mechanically ventilated in accordance with AS 1668.2:2012 as applicable.

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

86. 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.

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

88. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

89. 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:

    a. Dead and Live Loads – AS/NZS 1170.1:2002

    b. Wind Loads – AS/NZS 1170.2:2011

    c. Earthquake actions – AS 1170.4:2007

    d. Masonry – AS 3700:2018

    e. Concrete Construction – AS 3600:2018

    f. Steel Construction AS 4100:1998

    g. Aluminium Construction – AS/NZS 1664.1 or 2:1997

    h. Timber Construction – AS 1720.1:2010

    i. ABCB Standard for Construction of Buildings in Flood Hazard Areas.

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

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

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

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

94. 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:

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

96. 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.

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

98. 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.
99. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3.10.
100. 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.
101. 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.
102. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3.6 of BCA2019.
103. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification E3.1 of BCA2019.

Acoustic Services Design Certification:

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