DA Stage BCA Assessment Report

71-75 Victoria Road, Drummoyne

Project:	71-75 Victoria Road, Drummoyne
Reference No:	112298-BCA-r2
Date:	16 September 2022
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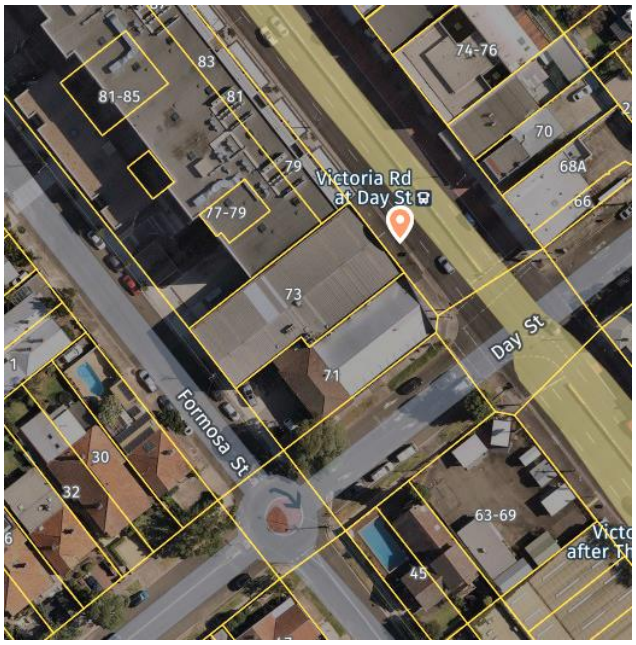
BASIS OF ASSESSMENT

1.1. Location and Description

The building development, the subject of this report, is located at 71-75 Victoria Road, Drummoyne. The proposed building is a mixed use development comprising of two levels of basement carparking, ground level mixed retail and residential uses with ancillary storage and loading areas, and five storeys above comprising of residential sole-occupancy units with an additional storey of communal open space above.



Satellite Image Courtesy of Nearmap

1.2. Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of the 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 Solution 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 One – Building Code of Australia, 2019 Edition (BCA) Amendment 1 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.

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 services.

This report does not include, or imply compliance with:

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

(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 not been assessed);

(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 eight (8) due to the roof over the rooftop communal open space, and due to the eastern external wall of Basement 1 being on average greater than 1m above the finished level of the ground at the external wall over the lowest 12m section of wall.

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
Class 2	Part Ground, Level 1 – Level 5 & Roof Terrace	Residential
Class 6	Ground	Retail
Class 7a	Part Basement 2, Basement 1, Part Ground	Carparking
Class 7b	Part Basement 2, Part Ground	Waste Rooms and Loading Area

2.3. Effective Height (Clause A1.0)

The building has an *effective height* of 23.9m (Roof Terrace RL 46.8 – Basement 1 RL 22.9 = 23.5m), therefore less than 25 metres however more than 12 metres.

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

The building is required to be of Type A Construction.

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

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

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

2.6. Fire Compartments

The following *fire compartments* have been assumed:

(a) Basement 2, Basement 1 and the carpark ramp, form a combined fire compartment.

(b) The ground Floor waste and loading area forms a separate fire compartment.

(c) Retail 1, Retail 2, the Lobby and the common undercover areas along Day Street and Victoria Road form a combined fire compartment.

(d) Each residential storey thereafter forms an individual fire compartment.

2.7. Exits

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

(a) At Basement 2 – 1: the doorways opening into the fire-isolated stairways.

(b) At Ground Level – at a point of reaching open space.

(c) At Levels 1 – Roof: the doorway opening into the fire-isolated stairway.

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-east: The far boundary of Victoria Road.

South-east: The far boundary of Day Street.

North-west: The common property boundary.

South-west: The far boundary of Formosa Street.

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.

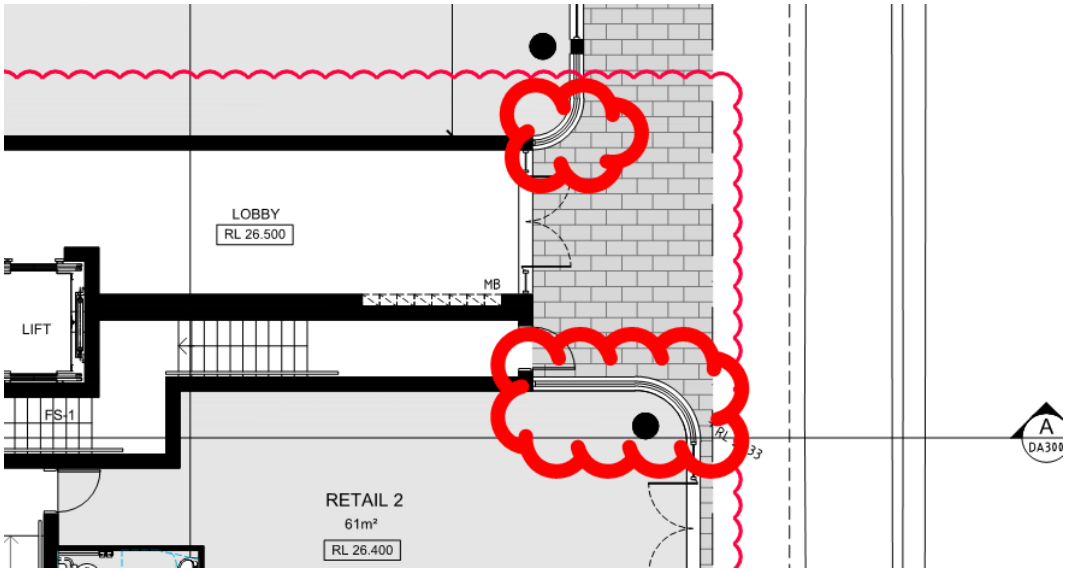
3 MATTERS FOR FURTHER CONSIDERATION

3.1. General

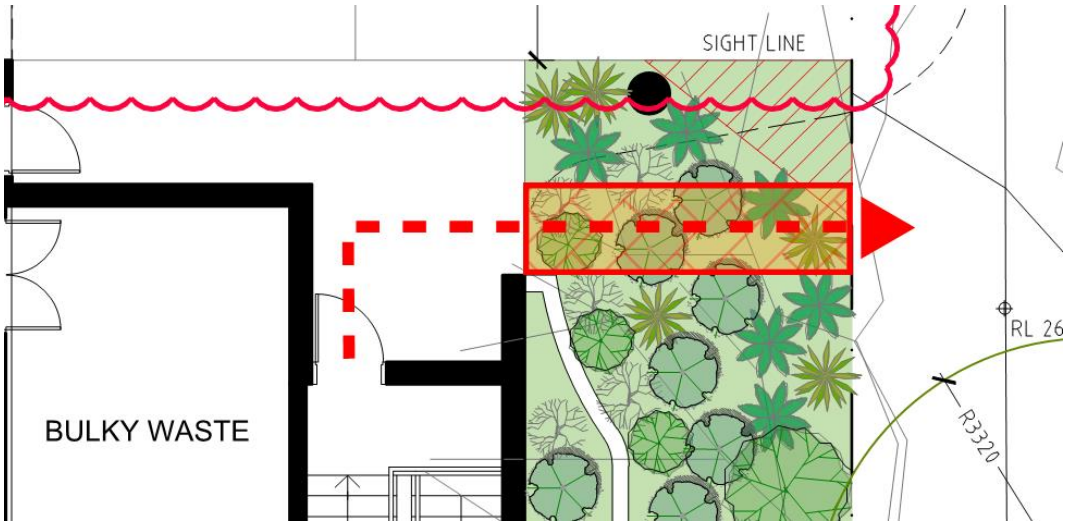
Assessment of the Architectural design documentation against the Deemed-to Satisfy Provisions of the Building Code of Australia, 2019 (BCA) has revealed the following areas where compliance with the BCA may require further consideration and/or may involve assessment as *Performance Solutions*. Any *Performance 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. 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.

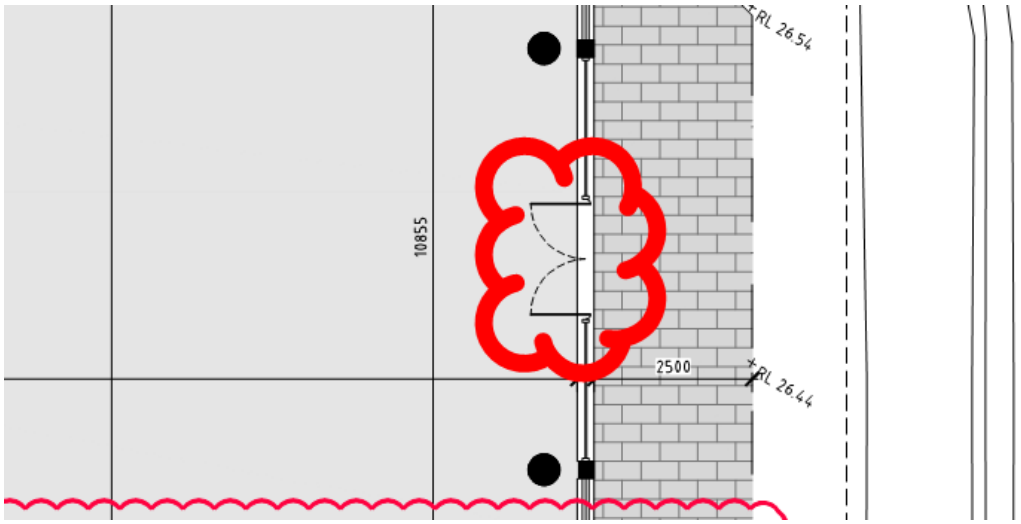
3.1.1. Provide internal protection to the Retail 1 and Retail 2 glazing perpendicular to the discharge of FS-1 in accordance with BCA C3.4 to meet the requirements of BCA D1.7(c).



3.1.2. Provide a 1m clear width hard-surface path of travel from the discharge of FS-2 to Day Street as shown below. Note this is to avoid exposure of the path of travel to the loading area roller shutter which would then trigger the need to protect this shutter for the purposes of BCA D1.7.

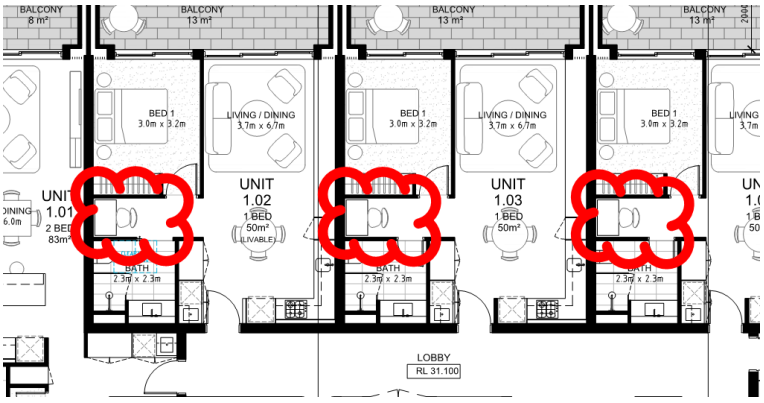


3.1.3. The Retail 1 doorways shall swing in the direction of egress to satisfy BCA D2.20.



3.1.4. Confirm the proposed use and combined maximum population number within Retail 1 and Retail 2 on Ground Floor level. Note if the combined occupation number is to exceed twenty (20) patrons and the use is food & beverage then sanitary facilities will need to be provided to meet BCA F2.3 and Table F2.3.

3.1.5. Natural light shall be provided to the study desks within the residential sole-occupancy units in accordance with BCA F4.1, F4.2 and/or F4.3. Note that for natural light to be borrowed to serve these studies it must come through the bedrooms as the “adjoining room”, and hence a glazed opening would be required between the bedroom and study. Natural light cannot be borrowed from the living area as it is separated by a hallway and thus cannot be considered the “adjoining room”.



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 minimum 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	Relevant Performance Requirements
1.	To permit the FRLs required for the Class 7a carpark to be applied across the Class 7b parts of Basement 2 and Ground Level.	C1.1	CP1 & CP2
2.	To permit an egress travel distance of up to 28m to reach the nearest exit from the most disadvantaged point of the Ground Floor loading area (noting persons within the loading area cannot egress back through Retail 1 nor Retail 2 as they are separate sole-occupancy units).	D1.4	DP4
3.	To permit an egress travel distance of up to 33.5m to reach the nearest exit from the most disadvantaged point of the Level 1 communal open space.	D1.4	DP4
4.	To permit the internal fire hydrants to be located at mid lings, i.e., not technically at the floor level served.	E1.3	EP1.3
5.	To rationalise the hydrant booster location on Formosa Street which is not in sight of the principal building entries.	E1.3	EP1.3
6.	To demonstrate that 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.	F1.0 (No DtS Provisions)	FP1.4

3.4. Façade Construction – Non Combustible

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

(a) In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible:
- *(i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.*
- *(ii) The flooring and floor framing of lift pits.*
- *(iii) Non-loadbearing internal walls where they are required to be fire-resisting.*

(b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in—
- *(i) a building required to be of Type A construction; and*
- *(ii) a building required to be of Type B construction, subject to C2.10, in—*
  - *(A) a Class 2, 3 or 9 building; and*
  - *(B) a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys.*

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

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

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

(i) Plasterboard.
(ii) Perforated gypsum lath with a normal paper finish
(iii) Fibrous-plaster sheet.
(iv) Fibre-reinforced cement sheeting.
(v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.
(vi) Sarking-type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5.
(vii) Bonded laminated materials where—
(A) each lamina, including any core, is non-combustible; and
(B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and
(C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.

Currently the external façade construction has been not been clearly nominated on the plans. The external wall construction shall be strictly *non-combustible* to satisfy BCA C1.9 and any attachments to the external wall shall satisfy BCA C1.14. Details shall be provided at Construction Certificate (CC) stage demonstrating compliance with such requirements.

It is also noted that BCA C1.9 prohibits the use of in situ formwork containing combustible elements including PVC lined formwork products where the PVC lining remains in place for the life of the building where proposed to be used as an external wall element, common walls, the flooring and floor framing of lift pits, services riser shafts or non-*loadbearing* internal walls required to be fire resisting. Note that perimeter walls of basement (below ground) floor levels are also deemed to be external walls.

ANNEXURE A DESIGN DOCUMENTATION

Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 3. Architectural Plans

Architectural Plans Prepared by PBD Architects			
Drawing Number	**Issue**	**Date**	**Title**
DA100	C	25.07.22	Basement 2 Plan
DA101	C	25.07.22	Basement 1 Plan
DA102	D	19.08.22	Ground Floor Plan
DA103	D	19.08.22	Level 1 Plan
DA104	D	19.08.22	Level 2-4 Plan
DA106	D	19.08.22	Level 5 Plan
DA107	D	19.08.22	Roof Terrace
DA200	D	19.08.22	Elevations - 01
DA201	D	19.08.22	Elevations - 02
DA300	D	19.08.22	Section A
DA301	D	19.08.22	Section B
DA302	D	19.08.22	Section C

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) **BCA2019 Spec C3.4**
2.	Construction Joints	**BCA2019 C1.1, Spec C1.1** **BCA2019 C3.16** AS 1530.4:2014 & AS 4072.1:2005
3.	Fire doors	**BCA2019 C3.4** (Acceptable methods of Protection) **BCA2019 C3.5** (Doors in Fire Walls) **BCA2019 C3.8** (Openings in Fire Isolated Exits) **BCA2019 C3.10** (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 **BCA2019 C3.11** (Bounding Construction) **BCA2019 C3.13** (Opening in Shafts) Spec C3.4 AS1905.1: 2015
4.	Fire seals protecting openings in fire resisting components of the building	**BCA2019 C3.15** (Openings for service installations) **BCA2019 C3.16** (Construction joints) **BCA2019 Spec C3.15** AS1530.4:2014 & AS4072.1-2005
5.	Fire windows > Fixed Internal wall-wetting sprinklers > -/60/- Fire Windows automatic closing > -/60/- Fire Windows fixed closed > -/60/- automatic closing Fire Shutters	**BCA2019 D1.7** (Travel Via Fire Isolated Exits) **BCA2019 Spec. C3.4** identical to tested porotype
6.	Lightweight construction	**BCA2019 C1.1, Spec. C1.1** **BCA2019 C1.8, Spec C1.8** **BCA2019 C3.11** (Bounding Construction) AS1530.4:2014

Item	Essential Fire and Other Safety Measures	Standard of Performance
General		
7.	Portable fire extinguishers	**BCA2019 E1.6** AS 2444–2001
8.	Fire blankets	AS 2444–2001
General Egress		
9.	Operation of Door latches	**BCA2019 D2.21** (Operation of Latch) AS 1670.1:2018
10.	Swing of Exit Doors	**D2.20** (Swinging Doors)
11.	Warning & operational signs	**BCA2019 D2.23 (**Signs on Fire Doors) **BCA2019 D3.6** (Braille Exit Signs) (Note: E4.5 (Exit Signs)) **BCA2019 E3.3** (Lift Signs)
Lifts		
12.	Access to Lift Pits	**BCA2019 D1.17** (Access to Lift Pits)
13.	Stretcher Lifts including > Fire Service Controls > Recall Operation > Drive control switch	**BCA2019 E3.2** **BCA2019 E3.7** (Fire Service Controls) **BCA2019 E3.9** (Fire Service Recall Operation Switch) **BCA2019 E3.10** (Lift Car Fire Service drive control switch) **BCA2019 Spec E3.1** AS 1735.11:1986 (Fire rated landing doors)
Electrical Services		
14.	Automatic fail-safe devices	**BCA2019 D2.21** (Operation of Latches) AS1670.1:2018 (Fire)
15.	Automatic fire detection & alarm system	**BCA2019 E2.2**, NSW Table E2.2a, Table 2.2b **Spec E2.2a**
16.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1:2018
17.	Exit signs	**BCA2019 E4.5** (Exit Signs) **BCA2019 E4.6** (Direction Signs)

Item	Essential Fire and Other Safety Measures	Standard of Performance
		BCA2019 E4.7 (Residential Concession) **BCA2019 E4.8** (Design and Operation - Exits) AS/NZS 2293.1:2018
18.	Smoke detectors & heat detectors Auto-shutdown of Air-handling System. > (Clause E2.2(b)) - Any system that recycles air from one fire compartment to another, or operates in a manner that may spread smoke and does not operate as a smoke control system as per AS 1668.1	**BCA2019 E2.2, Spec E2.2a** AS 1668.1:2015
19.	System Monitoring	**BCA2019 E2.2 , Table E2.2a,Spec E2.2a** AS 1670.3:2018
Hydraulic Services		
20.	Automatic fire suppression systems	**BCA2019 E1.5** **BCA2019 E1.5a** **BCA2019 Spec E1.5** **BCA2019 Spec E1.5a** AS 2118.1:2017 (Sprinklers) AS 2118.6:2012 (Combined Sprinklers/Hydrant)
21.	Fire hydrant systems > NSW Storz Couplings	**BCA2019 E1.3** AS 2419.1:2005 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'
22.	Hose reel systems	**BCA2019 E1.4** AS 2441:2005
23.	Wall-wetting sprinkler / drenchers	**BCA2019 D1.7** **BCA2019 C3.4 & Spec C3.4** AS 2118.2: Wall-wetting sprinkler / drenchers
Mechanical Services		
24.	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

Item	Essential Fire and Other Safety Measures	Standard of Performance
25.	1. Mechanical air handling systems 2. Mechanical ventilation to carpark. 3. Auto-shutdown of Air-handling System. > (Clause E2.2(b)) - Any system that recycles air from one fire compartment to another, or operates in a manner that may spread smoke and does not operate as a smoke control system as per AS 1668.1:2015.	**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 or 3 building is treated as a separate *fire compartment*.

Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1:2015 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.

A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate 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[1]	Class 6	Class 7b[2]
Loadbearing External Walls (including columns and other building elements incorporated therein) - Less than 1.5m to a *fire- source feature* - 1.5 – less than 3m from a *fire-source feature* - 3m or more from a *fire source feature*	90/90/90 90/60/60 90/60/30	120/120/120 120/90/90 120/60/30	180/180/180 180/180/120 180/120/90	240/240/240 240/240/180 240/180/90
Non-Loadbearing External Walls - Less than 1.5m to a *fire-source feature* - 1.5 – less than 3m from a *fire-source feature* - 3m or more from a *fire-source feature*	-/90/90 -/60/60 -/-/-	-/120/120 -/90/90 -/-/-	-/180/180 -/180/120 -/-/-	-/240/240 -/240/180 -/-/-
External Columns - Loadbearing - Non-loadbearing	90/-/- -/-/-	120/-/- -/-/-	180/-/- -/-/-	240/-/- -/-/-
Common Walls & Fire Walls	90/90/90	120/120/120	180/180/180	240/240/240
Stair and Lift Shafts required to be fire-resisting - Loadbearing - Non-loadbearing	90/90/90 -/90/90	120/120/120 -/120/120	180/120/120 -/120/120	240/120/120 -/120/120
Internal walls bounding sole occupancy units - Loadbearing - Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-	180/-/- -/-/-	240/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: - Loadbearing - Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-	180/-/- -/-/-	240/-/- -/-/-
Ventilating, pipe, garbage and like shafts: - Loadbearing - Non-loadbearing	90/90/90 -/90/90	120/90/90 -/90/90	180/120/120 -/120/120	240/120/120 -/120/120
Other loadbearing internal walls, beams trusses and columns	90/-/-	120/-/-	180/-/-	240/-/-
Floors	90/90/90	120/120/120	180/180/180	240/240/240
Roofs[3]	90/60/30	120/60/30	180/60/30	240/90/60

[1] There are FRL concessions applicable for fully sprinkler protected car park portions under Clause 3.9 of BCA Specification C1.1, reducing the carpark FRL's down from 120/120/120 to 60/60/60.

[2] It is recommended that a Fire Engineered Performance Solution be sought to permit the Class 7a FRLs throughout the Class 7b parts within the combined fire compartment, i.e., to the Basement 2 Storage and to the Ground Level Loading Area and Waste Rooms.

[3] The roof need not comply with any FRLs due to the sprinkler protection of the entire building. Note: it is assumed that the AS2118.1 sprinkler system is to be extended throughout the entire building in lieu of providing separate FPAA and AS2118.1 systems between the Class 7a and Class 2 parts.

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 E	'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 E 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.	For noting.	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	Compliance is achievable. Structural Engineer to certify at CC stage.	CRA – Refer Annexure E
B1.2: Determination of individual actions	The magnitude of actions must be determined in accordance with this Clause.	Compliance is achievable. Structural Engineer to certify at CC stage.	CRA – Refer Annexure E
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.	Compliance is achievable. Structural Engineer to certify at CC stage.	CRA – Refer Annexure E
B1.5: Structural software	Not applicable.	The building is not within the geometrical limitations of this Clause.	N/A
B1.6 Construction of buildings in flood hazard areas	A Class 2 or 3 building in a flood hazard area (refer to Council maps) must comply the ABCB Standard for Construction of Buildings in Flood Hazard Areas.	Compliance is achievable. Compliance to be demonstrated at CC stage, if applicable. To be advised by local consent authority.	CRA – Refer Annexure E

Section C: Fire Resistance			
Part C1 – Fire Resistance and Stability			
C1.0: Deemed-to-Satisfy Provisions	Informational.	For noting.	Noted
C1.1: Type of construction required	Informational.	The building is required to be of Type A Construction. Refer to the requirements of Specification C1.1 at the end of this Section, and Annexure C of this report for a summary of the FRLs required for the building. **As discussed earlier in this report, it is recommended that a Fire Engineered Performance Solution be sought to permit the Class 7a FRLs to be applied throughout the combined Class 7a/7b fire compartment.**	CRA – Refer Annexure E **PS – Refer Part 3.3**
C1.2: Calculation of rise in storeys	Informational.	The building has a rise in storeys of eight (8) due to the roof over the rooftop communal open space, and due to the eastern external wall of Basement 1 being on average greater than 1m above the finished level of the ground at the external wall over the lowest 12m section of wall.	Noted
C1.3: Buildings of multiple classification	Informational.	For noting.	Noted
C1.4: Mixed Types of construction	Not applicable.	The building is required to be Type A Construction throughout.	N/A
C1.5: Two Storey Class 2, 3 or 9c buildings	Not applicable.	The building is mor than two (2) storeys.	N/A
C1.6: Class 4 Parts of building	Not applicable.	The building does not include a Class 4 part.	N/A

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C1.7: Open spectator stands and indoor sports stadium	Not applicable.	The building is not an open spectator stand nor indoor sports stadium.	N/A
C1.8: Lightweight construction	(a) Lightweight construction must comply with Specification C1.8 if it is used in a wall system- (i) that is required to have an FRL; or (ii) for a lift shaft, stair shaft or service shaft or an external wall bounding a public corridor including a non-fire-isolated passageway or non fire-isolated ramp, in a spectator stand, sports stadium, cinema or theatre, railway station, bus station or airport terminal. (b) If lightweight construction is used for the fire-resisting covering of a steel column or the like, and if- (i) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2m above the floor to prevent indenting; and (ii) the column is liable to be damaged rom the movement of vehicles, materials or equipment, then the covering must be protected by steel or other material.	Compliance is readily achievable with such requirements for any lightweight fire-resisting construction. Compliance to be demonstrated at CC stage.	CRA – Refer Annexure E
C1.9: Non-combustible building elements	(a) In a building required to be of Type A or B construction, the following building elements and their components must be *non-combustible*: (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (ii) The flooring and floor framing of lift pits.	Currently the external façade construction has been not been clearly nominated on the plans. The external wall construction shall be strictly *non-combustible* to satisfy BCA C1.9 and any attachments to the external wall shall satisfy BCA C1.14. Details shall be provided at Construction Certificate (CC) stage demonstrating compliance with such requirements. It is also noted that BCA C1.9 prohibits the use of in situ formwork containing combustible elements including PVC lined formwork products where the PVC lining	CRA – Refer Annexure E

Section C: Fire Resistance			
	(iii) Non-loadbearing internal walls where they are required to be fire-resisting. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of *non-combustible* construction in— (i) a building required to be of Type A construction; and (ii) … (c) A loadbearing internal wall and a loadbearing *fire wall*, including those that are part of a loadbearing shaft, must comply with Specification C1.1. (d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants, termite management systems, Glass including laminated glass, thermal breaks associated with glazing systems and damp-proof courses. (e) The following materials, may be used wherever a *non-combustible* material is required: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet. (iv) Fibre-reinforced cement sheeting. (v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. (vi) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5.	remains in place for the life of the building where proposed to be used as an external wall element, common walls, the flooring and floor framing of lift pits, services riser shafts or non-*loadbearing* internal walls required to be fire resisting. Note that perimeter walls of basement (below ground) floor levels are also deemed to be external walls.	

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	(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*.	Compliance is readily achievable for the fire hazard properties of all internal linings. Details to be provided at CC stage.	CRA – Refer Annexure E
C1.11: Performance of external walls in fire	Not applicable.	The building has a rise in storeys of more than two (2).	N/A
C1.13: Fire-protected timber: Concession	Not applicable.	There is no fire-protected timber proposed.	N/A
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be *non-combustible* unless it is one of the following: (a) An ancillary element that is *non-combustible*. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing.	Compliance is readily achievable with such requirements. Attachments to be detailed at CC stage.	CRA – Refer Annexure E

Section C: Fire Resistance			
	(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 (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.		

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	(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.	For noting.	Noted
C2.1: Application of Part	Informational.	For noting.	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 size of the building's fire compartments do not exceed those listed in Table C2.2.	Complies
C2.3: Large isolated buildings	Not applicable.	The building is not a large isolated building.	N/A
C2.4: Requirements for open spaces and vehicular access	Not applicable.	The building is not a large isolated building.	N/A
C2.5: Class 9a and 9c Buildings	Not applicable.	The building is not a Class 9a or 9c building.	N/A
C2.6: Vertical separation of openings in external walls	Not applicable.	As the carpark requires an AS2118.1 sprinkler system, it is assumed that the single AS2118.1 system will be extended throughout the building, in lieu of a separate FPAA system to the residential portions and a separate AS2118.1 system to the carpark. Hence, the building need not be provided with spandrel separation as the AS2118.1 concession would be granted.	N/A
C2.7: Separation by fire walls	**Construction** - A *fire wall* must be constructed in accordance with the following: > Any openings in a *fire wall* must not reduce the *FRL* required by Specification C1.1 for the *fire wall*,	Compliance is readily achievable. The Structural Engineer shall certify all fire-rated separating elements at CC stage.	CRA – Refer Annexure E

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		except where permitted by the Deemed-to-Satisfy Provisions of Part C3. > Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not pass through or cross the *fire wall* unless the required fire resisting performance of the *fire wall* is maintained. **Separation of buildings** – … **Separation of *fire compartments*** – A part of a building separated from the remainder of the building by a *fire wall* may be treated as a separate *fire compartment* if it is constructed in accordance with this clause and the *fire wall* extends to the underside of – > a floor having an *FRL* required for a *fire wall*; or > the roof covering.		
C2.8:	Separation of classifications in the same storey	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.	Compliance is readily achievable. The Structural Engineer shall certify all fire-rated separating elements at CC stage.	CRA – Refer Annexure E
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.	Compliance is readily achievable. The Structural Engineer shall certify all fire-rated separating elements at CC stage.	CRA – Refer Annexure E

Section C: Fire Resistance			
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.	Compliance is readily achievable. The Structural Engineer shall certify all fire-rated separating elements at CC stage.	CRA – Refer Annexure E
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.	There are no stairways and lifts within the same fire-resisting shaft.	Complies
C2.12: Separation of equipment	Any of the following equipment located in the building must be separated from the remainder of the building: > lift motors and lift control panels; or > emergency generators used to sustain emergency equipment operating in the emergency mode; or > central smoke control plant; or > boilers; or > a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more. Equipment need not be separated in if the equipment comprises: > smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or > stair pressurizing equipment installed in compliance with the relevant provisions of AS 1668.1:2015; or > a lift installation without a machine room; or > equipment otherwise adequately separated from the remainder of the building.	Compliance is readily achievable with such requirements, if required. It is noted that the hydrant pump room need not be separated where the carpark storey is to be sprinkler-protected throughout.	CRA – Refer Annexure E

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	Separation must be by construction having an *FRL* as required by Specification C1.1, but not less than *FRL* 120/120/120 with openings protected by self-closing fire doors having an *FRL* of not less than –/120/30. Separation of on-site fire pumps must comply with the requirements of AS 2419.1:2005.		
C2.13: Electricity supply system	> Any electrical substation located within the building must be separated from the remainder of the building by construction having an *FRL* of not less than 120/120/120, and doorways protected with self-closing fire doors having an *FRL* of not less than –/120/30. > A main switchboard which sustains emergency equipment operating in the emergency mode must be fire separated from any other part of the building by construction having an *FRL* of not less than 120/120/120 and have the doorway fitted with self-closing fire door having an *FRL* of not less than –/120/30. > Any electrical conductors located within the building that supply a substation or main switchboard for emergency equipment must comply with BCA clause C2.13. > Emergency equipment switchgear must be separated from non-emergency equipment switchgear by metal partitions designed to minimize the spread of a fault from the non-emergency equipment switchgear. > Emergency equipment includes but is not limited to the following: o fire hydrant booster pumps; o sprinkler pumps; o hose reel pumps;	Compliance is readily achievable with such requirements, where required, such as for the Ground Floor substation.	CRA – Refer Annexure E

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	○ air-handling systems designed to exhaust and control the spread of smoke; ○ emergency lifts; ○ control and indicating equipment; and ○ sound systems and intercom systems for emergency purposes.		
C2.14: Public corridors in Class 2 and 3 Buildings	Public corridors in Class 2 parts that exceed 40 m in length must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Specification C2.5.	The public corridors in the Class 2 parts of the building do not exceed 40m in length. Note that the Level 1 corridors are open to the sky, and the covered/enclosed *public corridor* portion does not exceed 40m in length.	Complies
Part C3 – Protection of Openings			
C3.0: Deemed-to-Satisfy Provisions	Informational.	For noting.	Noted
C3.1: Application of Part	Informational.	For noting.	Noted
C3.2: Protection of openings in external walls	Not applicable.	There are no openings exposed to (within 3m of) the allotment boundaries.	N/A
C3.3: Separation of external walls and associated openings in different fire compartments	Not applicable.	There are no external walls/openings in the external walls exposed between separate fire compartments.	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	**As detailed under 3.1.1. of this report, the glazed openings of Retail 1 and Retail 2 perpendicular to the path of travel from the discharge of FS-1 and to reach the road shall be protected internally in accordance with the requirements of this Clause.**	**FI – Refer Part 3.1**

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	(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. <u>Other openings:</u> (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.	Compliance is readily achievable for all doorways in fire walls separating fire compartments, which shall be installed to comply with BCA C3.5 and AS1905.1-2015.	CRA – Refer Annexure E
C3.6: Sliding fire doors	Not applicable.	There are no sliding fire doors.	N/A
C3.7: Protection of doorways in horizontal exits	A doorway that is part of a horizontal exit must be protected by a single fire door that has an FRL of not less than that required by Specification C1.1 for the fire wall except that the door must have an insulation level of at least 30, or by one of the other options in Clause C3.7.	Compliance is readily achievable for all doorways in fire walls separating fire compartments, which shall be installed to comply with BCA C3.7 and AS1905.1-2015.	CRA – Refer Annexure E

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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.	Compliance is readily achievable for all doorways opening into the fire-isolated stairway exits, which shall be installed to comply with BCA C3.8 and AS1905.1-2015.	CRA – Refer Annexure E
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: o a lighting, detection, or pressurization system serving the exit; or o a security, surveillance or management system serving the exit; or o an intercommunication system or an audible or visual alarm system in accordance with D2.22; or o 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.	Compliance is readily achievable. Clearly documented services drawings shall be provided at CC stage to ensure that no non-required services penetrate the fire-isolated stairway exits.	CRA – Refer Annexure E
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.	Compliance is readily achievable. Certification shall be provided by the lift supplier/installer at CC stage confirming compliance.	CRA – Refer Annexure E

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	> Panels in the wall of the lift shaft must be backed by construction having an *FRL* of not less than –/60/60 if it exceeds 35 000 mm2 in area.		
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. > In a Class 2 building where a path of travel to an *exit* does not provide a person seeking egress with a choice of travel in different directions to alternative *exit*s and is along an open balcony, landing or the like and passes an external wall of– (i) another sole-occupancy unit; or (ii) a room not within a sole-occupancy unit, then that external wall must– (i) be constructed of concrete or masonry, or be lined internally with a fire-protective covering; and (ii) have any doorway fitted with a self-closing, tight-fitting solid core door not less than 35 mm thick; and (iii) have any windows or other openings– (A) protected internally in accordance with C3.4; or (B) located at least 1.5 m above the floor of the balcony, landing or the like.	Compliance is readily achievable with such requirements.	CRA – Refer Annexure E
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.	Compliance is readily achievable with such requirements. It is recommended that a detailed penetration specification is provided at CC stage to clearly document all proposed wall types and fire-sealing	CRA – Refer Annexure E

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	Where a service passes through a floor which is required to be protected by a *fire-protective* covering, the penetration must not reduce the fire performance of the covering.	within the building prior to any passive fire contractor commencing works.	
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.	Compliances is readily achievable for the protection of openings in shafts. Opening protection to be clearly documented at CC stage.	CRA – Refer Annexure E
C3.15: Openings for service installations	Where services pass through an element which is required to achieve an *FRL* (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15. **Note:** contractors should check with PCA to confirm compliance with their proposed fire stopping method.	Compliance is readily achievable with such requirements. It is recommended that a detailed penetration specification is provided at CC stage to clearly document all proposed wall types and fire-sealing within the building prior to any passive fire contractor commencing works.	CRA – Refer Annexure E
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*.	Compliance is readily achievable with such requirements. It is recommended that a detailed penetration specification is provided at CC stage to clearly document all proposed wall types and fire-sealing within the building prior to any passive fire contractor commencing works.	CRA – Refer Annexure E
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	Compliance is readily achievable with such requirements. To be clearly documented at CC stage.	CRA – Refer Annexure E

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		assembly of the construction which has achieved the required *FRL* or resistance to the incipient spread of fire.		
Specification C1.1 – Fire-Resisting Construction				
2.0:	General Requirements	Informational.	For noting.	Noted
2.1:	Exposure to fire-source features	Informational.	For noting.	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.	Compliance is readily achievable. The fire protection for support of another part requirements shall be addressed within the Structural Engineer's detailed load path design and certified for compliance at CC stage.	CRA – Refer Annexure E
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).	Compliance is readily achievable. The lintels shall be certified at CC stage within the Structural Engineer's design of loadbearing elements.	CRA – Refer Annexure E
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.	Compliance is readily achievable with such requirements. Attachments are to be documented and certified at CC stage to not impair the fire-resistance required of building elements.	CRA – Refer Annexure E
2.5:	General concessions	Structures on roofs — A *non-combustible* structure situated on a roof need not comply with the other provisions of this Specification if it only contains— (i) lift motor equipment; or	For noting.	Noted

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	(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	Not applicable.	There are no mezzanine floors proposed.	N/A
2.7: Enclosure of shafts	Fire-isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction having an *FRL* required for the walls of a non-load-bearing shaft in the same building, as per specification C1.1. This fire rating is required in two directions. The above does not apply to shafts extending beyond the roof covering, other than fire isolated stair and lift shafts and the bottom of *non-combustible* shafts laid directly on the ground.	Compliance is readily achievable. The enclosure of required fire-resisting shafts shall be clearly documented and certified at CC stage.	CRA – Refer Annexure E
2.8: Carparks in Class 2 and 3 Buildings	Not applicable.	The building is too tall, and includes other Classifications, and therefore the carpark may not be granted a concession.	N/A
2.9: Residential Aged Care building: Concession	Not applicable.	The building is not a residential aged care building.	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.	-

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3.1: Fire-resistance of building elements	> The FRLs of all elements are to be in accordance with the FRL's detailed in the Table contained within Annexure C 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. **Note:** This includes *non-combustible* insulation. When an insulation material is not certified as *non-*	The building is required to be of Type A Construction. Refer to the requirements of Specification C1.1 at the end of this Section, and Annexure C of this report for a summary of the FRLs required for the building. **As discussed earlier in this report, it is recommended that a Fire Engineered Performance Solution be sought to permit the Class 7a FRLs to be applied throughout the combined Class 7a/7b fire compartment.**	CRA – Refer Annexure E **PS – Refer Part 3.3**

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		combustible, this material will need to be the subject of a Fire Engineering Assessment at the CC stage. > The *FRL*s specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5m of a window and are exposed through that window to a *fire-source feature*. > It should also be noted that if Dincel material is to be used as an element where the BCA requires such element to be *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage		
3.2:	Concessions for floors	A floor need not comply with Table 3 if— (a) it is laid directly on the ground; or (b) … (c) … (d) it is within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building; or (e) it is an open-access floor (for the accommodation of electrical and electronic services and the like) above a floor with the *required FRL*.	For noting.	Noted
3.3:	Floor Loading of Class 5 and 9b buildings: Concession	Not applicable.	The building is not a Class 5 or 9b building.	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	For noting.	Noted

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	(b) the concrete slab roof complies with Table 3.		
3.5: Roof: Concession	A roof need not comply with Table 3 if its covering is *non-combustible* and the building— (a) has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 installed throughout; or (b) … (c) is of Class 2 or 3; or (d) has an *effective height* of not more than 25 m and the ceiling immediately below the roof has a *resistance to the incipient spread of fire* to the roof space of not less than 60 minutes.	For noting.	Noted
3.6: Roof lights	If a roof is required to have an *FRL* or its covering is required to be *non-combustible*, roof lights or the like installed in that roof must— (a) have an aggregate area of not more than 20% of the roof surface; and (b) be not less than 3 m from— (i) any boundary of the allotment other than the boundary with a road or public place; and (ii) any part of the building which projects above the roof unless that part has the *FRL* required of a *fire wall* and any openings in that part of the wall for 6 m vertically above the rooflight or the like are protected in accordance with C3.4; and (iii) any rooflight or the like in an adjoining *sole-occupancy unit* if the walls bounding the unit are required to have an *FRL*; and	The roof lights do not occupy more than 20% of the area of the roof surface and are not less than 3m from any prescribed building features.	Complies

Section C: Fire Resistance				
		(iv) any rooflight or the like in an adjoining fire-separated section of the building; and (c) if a ceiling with a resistance to the incipient spread of fire is required, be installed in a way that will maintain the level of protection provided by the ceiling to the roof space.		
3.7:	Internal columns and walls: Concession	For a building with an *effective height* of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than *fire walls* and shaft walls may have— (a) in a Class 2 or 3 building: FRL 60/60/60; or (b) in a Class 5, 6, 7, 8 or 9 building— (i) with rise in storeys exceeding 3: *FRL* 60/60/60 (ii) with rise in storeys not exceeding 3: no FRL.	For noting.	Noted
3.8:	Open spectator stands and indoor sports stadiums concession	Not applicable.	The building is not an open spectator stand nor indoor sports stadium.	N/A
3.9:	Carparks	(a) Notwithstanding Clause 3.1, a carpark may comply with Table 3.9 if it is an open-deck carpark or is protected with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 and is— (i) a separate building; or (ii) a part of a building— (A) which only occupies part of a storey, and is separated from the remaining part by a fire wall; or	For noting.	Noted

Section C: Fire Resistance			
	(B) which is located above or below another classification, and the floor separating the classifications complies with C2.9; or (C) which is located above another Class 7 part of the building not used for carparking, and the floor separating the parts complies with Table 3 for a Class 7 part other than a carpark; or (D) which is located below another Class 7 part of the building not used for carparking, and the floor separating the parts complies with Table 3.9. (b) For the purposes of this Clause, a carpark— (i) includes— (A) an administration area associated with the functioning of the carpark; and (B) where the carpark is sprinklered, is associated with a Class 2 or 3 building and provides carparking for separate sole-occupancy units, each carparking area with an area not greater than 10% of its floor area for purposes ancillary to the sole-occupancy units; but (ii) excludes— (A) except for (b)(i), any area of another classification, or other part of a Class 7 building not used for carparking; and (B) a building or part of a building specifically intended for the parking of trucks, buses, vans and the like.		
3.10: Class 2 and 3 buildings Concession	Not applicable.	The building has a rise in storeys of more than four (4) and therefore the concession may not be applied.	N/A

Section C: Fire Resistance				
4.0:	Type B fire-resisting construction	Not applicable.	The building is required to be Type A Construction.	N/A
5.0:	Type C fire-resisting construction	Not applicable.	The building is required to be Type A Construction.	N/A

Section D: Access and Egress				
Part D1 – Provision for Escape				
D1.0:	Deemed-to-Satisfy Provisions	Informational.	For noting.	Noted
D1.1:	Application of Part	The Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or a Class 4 part of a building.	For noting.	Noted
D1.2:	Number of exits required	**All buildings** – Every building must have at least one exit from each storey. **Basements –** Not less than 2 *exits* must be provided from any storey if egress from that storey involves a vertical rise within the building of more than 1.5 m, unless – (iii) the floor area of the storey is not more than 50 m2; and (iv) the distance of travel from any point on the floor to a single *exit* is not more than 20 m. **General –** Without passing through another *sole-occupancy unit*, every occupant of a storey or part of a storey must have access to an exit or at least 2 exits, if 2 or more are required.	The basement levels are provided with two (2) exits, and all other storeys are provided with at least one (1) exit as required for the building having an effective height of less than twenty-five (25) metres.	Complies

Section D: Access and Egress			
D1.3: When fire-isolated stairways and ramps are required	Class 2 parts – Every stairway or ramp serving as a required exit must be fire-isolated unless it connects, passes through, or passes by not more than four (4) consecutive storeys in the sprinkler-protected building. Other parts – Every stairway serving as a required exit must be fire-isolated unless it connects, passes through, or passes by not more than three (3) consecutive storeys in the sprinkler-protected building.	Every storey is proposed to be fire-isolated, except those contained within the SOUs.	Complies

D1.4: Exit travel distances	Class 2 residential —
	
	> The entrance doorway of each *sole-occupancy unit* must be not more than –
	  ○ 6 m from an *exit* or from a point from which travel in different directions to 2 *exits* is available; or
	  ○ 20 m from a single *exit* serving the storey at the level of egress to a road or open space; and
	
	> No point on the floor of a room which is not in a *sole-occupancy unit* must be more than 20 m from an *exit* or from a point at which travel in different directions to 2 *exits* is available.
	
	Other parts —
	
	No point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m.
	
	> no point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m; and
		Noting the concessions granted to the residential portions of the building pursuant to Spec E1.5a which increases the travel distances from 6m to 12m, the travel distances throughout the building are within the limitations of this Clause, **except for:**
		
		a. Ground Floor, up to 28m to reach the nearest exit from the loading area;
		
		b. Level 1, up to 33.5m to reach the nearest exit from the communal open space.
		
		A Fire Engineered Performance Solution would be required to permit this extended egress travel distances.
			PS – Refer Part 3.3

Section D: Access and Egress				
		> in a Class 5 or 6 building, the distance to a single *exit* serving a storey at the level of access to a road or open space may be increased to 30 m.		
D1.5:	Distance between alternative exits	*Exits* that are required as alternative means of egress must be– (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 *exits* is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than— (i) in a Class 2 or 3 building — 45 m apart; or (ii) … (iii) in all other cases — 60 m apart; and (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart. Note: the distance between *exits* must be measured through the point at which travel two *exits* is available.	The distances between alternative exits meet the requirements of this Clause.	Complies
D1.6:	Dimensions of exits and paths of travel to exits	In a required *exit* or path of travel to an *exit*– > 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	The clear widths of the required exits, and paths of travel to exits, are generally documented to satisfy the requirements of this Clause. The clear heights of paths of travel have not been clearly documented and shall be confirmed as not less than 2000mm throughout at CC stage.	CRA – Refer Annexure E

Section D: Access and Egress			
	people with disabilities in which case the unobstructed width must be not less than 850 mm. > the required width of a stairway or ramp must be measured clear of all obstructions such as handrails. > the unobstructed width of a required *exit* must not diminish in the direction of travel to a road or open space.		
D1.7: Travel via fire-isolated exits	> A doorway from a room must not open directly into a stairway that is required to be fire-isolated unless it is from – (i) a public corridor, public lobby or the like; or (ii) a *sole-occupancy unit* occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. > D1.7 (b) - Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (i) to a road or open space; or (ii) to a point— (A) in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and (B) from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or (iii) into a covered area that—	The fire-isolated stairways are documented to satisfy the requirements of this Clause, including at the Ground Floor discharge of FS-1 and FS-2 which discharge to a covered area which is open for 1/3 of its perimeter, is within 6m of the road/open space, and which has a clear height confidently greater than 3m, and where the shaft of FS-3 is continued to the building line. **The glazing adjacent to the discharge of FS-1 shall be protected internally in accordance with BCA C3.4.** **Additionally, as detailed under 3.1.2 of this report, it is recommended that a hard surfaced path of travel be provided from the discharge of FS-2 and directly towards the road to avoid exposure to other openings around the loading area roller shutter.**	**FI – Refer Part 3.1**

Section D: Access and Egress			
	(A) adjoins a road or open space; (B) and is open for at least 1/3 of its perimeter; and (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and (D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m. > D1.7 (c) - Where a path of travel from the point of discharge of a fire-isolated *exit* necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4, (iii) for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. > D1.7 (d) If more than 2 access doorways, not from a sanitary compartment or the like open to a required fire-isolated *exit* in the same storey – ○ a smoke lobby in accordance with D2.6 must be provided; or ○ the *exit* must be pressurized in accordance with AS 1668.1:2015		

Section D: Access and Egress			
D1.8: External stairways or ramps in lieu of fire-isolated exits	Not applicable.	There are no external stairways in lieu of fire-isolated stairways.	N/A
D1.9: Travel by non-fire-isolated stairways or ramps	Not applicable.	There are no required non-fire-isolated stairways.	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	Compliance is generally demonstrated with the requirements of this Clause for the discharge of exits.	Complies
D1.11: Horizontal exits	Not applicable.	Whilst there are doorways in fire walls these have not been considered as horizontal exits.	N/A
D1.12: Non-required stairways, ramps or escalators	Not applicable.	There are no non-required stairways, ramps or escalators connecting storeys.	N/A
D1.13: Number of persons accommodated	Informational.	**As there are no patron sanitary facilities proposed to serve the tenancies, it is assumed that these tenancies are not proposed to have a combined capacity of more than twenty (20) persons and/or are not proposed to be a food & beverage use.** **If more than twenty (20) patrons are to be accommodated and the Retail tenancies are**	**FI – Refer Part 3.1**

Section D: Access and Egress			
		intended to be a food and beverage use, then sanitary facilities will need to be provided for patrons to meet that occupancy number.	
D1.14: Measurement of distances	Informational.	For noting.	Noted
D1.15: Method of Measurement	Informational.	For noting.	Noted
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	Informational.	For noting.	Noted
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.	Compliance is readily achievable with such requirements. It is assumed the pit depth is less than 3m deep.	CRA – Refer Annexure E
D1.18: Egress from early childhood centres	Not applicable.	The building is not an early childhood centre.	N/A
Part D2 – Construction of Exits			
D2.0: Deemed-to-Satisfy Provisions	Informational.	For noting.	Noted
D2.1: Application of Part	Informational.	For noting.	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.	Compliance is readily achievable with such requirements which is to be demonstrated at CC stage. The Structural Engineer shall certify compliance with the design of the fire-isolated stairway shaft.	CRA – Refer Annexure E

Section D: Access and Egress				
D2.3:	Non-fire-isolated stairways and ramps	Not applicable.	No non-fire-isolated stairways or ramps have been considered as required exits.	N/A
D2.4:	Separation of rising and descending stair flights	If a stairway serving as an *exit* is required to be fire-isolated— (a) there must be no direct connection between— (i) a flight rising from a storey below the lowest level of access to a road or open space; and (ii) a flight descending from a storey above that level; and (b) any construction that separates or is common to the rising and descending flights must be (i) non-combustible; and (ii) smoke proof in accordance with Clause 2 of Specification C2.5.	There is no direct connection between the stairs rising from the basement levels and the stairs from the residential levels.	Complies
D2.5:	Open access ramps and balconies	Where an open access ramp or balcony is provided to meet the smoke hazard management requirements of Table E2.2a, it must— (a) have ventilation openings to the outside air which— (i) have a total unobstructed area not less than the floor area of the ramp or balcony; and (ii) are evenly distributed along the open sides of the ramp or balcony; and (b) not be enclosed on its open sides above a height of 1 m except by an open grille or the like having a free air space of not less than 75% of its area.	By virtue of this Clause, all public lobbies are deemed to be enclosed *public corridors* except for the Level 1 courtyard which is open to the sky.	Noted
D2.6:	Smoke lobbies	Not applicable.	There are no smoke lobbies required by BCA D1.7.	N/A

Section D: Access and Egress			
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: o a lighting, detection, or pressurization system serving the *exit*; or o a security, surveillance or management system serving the *exit*; or o an intercommunication system or an audible or visual alarm system in accordance with D2.22; or o the monitoring of hydrant or sprinkler isolating valves.	Compliance is readily achievable with the installation of services. Detailed services drawings to be provided at CC stage to demonstrate that compliance is to be achieved.	CRA – Refer Annexure E
D2.8: Enclosure of space under stairs and ramps	Not applicable.	The space below the stairways is not proposed to form a cupboard or other enclosed space.	N/A
D2.9: Width of stairways and ramps	Informational.	For noting.	Noted
D2.10: Pedestrian ramps	Not applicable.	There are no ramps serving as required exits.	N/A

Section D: Access and Egress			
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.	Compliance is readily achievable with such requirements which is to be demonstrated at CC stage. The Structural Engineer shall certify compliance with the design of the fire-isolated passageway shaft.	CRA – Refer Annexure E
D2.12: Roof as open space	Roof of basement level 1 to achieve an FRL of 120/120/120 as *exits* discharge onto it.	Compliance is readily achievable with such requirements which is to be demonstrated at CC stage. The Structural Engineer shall certify compliance with the design of the Ground Floor slab.	CRA – Refer Annexure E
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 240 mm and 355 mm within the residential units; > Goings must be between 250 mm and 355 mm; > Goings must be between 250 mm and 355 mm in other areas; > Risers must be between 115 mm high and 190 mm high; > The slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700; > The goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (R) are considered constant if the variation between– (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm.	Compliance is readily achievable. Detailed stairway designs shall be provided and reviewed for compliance at CC stage, including all landings, handrails, balustrades and the like.	CRA – Refer Annexure E

<table>
<tr><th colspan="4">Section D: Access and Egress</th></tr>
<tr><td></td><td>

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.

</td><td></td><td></td></tr>
<tr><td>D2.14: Landings</td><td>Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Condition</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr>
</table>
</td><td>Compliance is readily achievable. Detailed stairway designs shall be provided and reviewed for compliance at CC stage, including all landings, handrails, balustrades and the like.</td><td>CRA – Refer Annexure E</td></tr>
</table>

Section D: Access and Egress			
	<table><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.	Based on the drawings provided, all doorway thresholds are level.	Complies
D2.16: Barriers to prevent falls	Balustrades must be provided to stairs and balconies, driveway ramps etc where there is a fall of more than 1m. Balustrades must comply with the following: <u>Balustrade minimum heights</u> > 865 mm above stair nosings; > 865 mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length; and > 1 m in all other locations. <u>Balustrade openings – fire-isolated stairs</u> > maximum openings of 300 mm; or > where rails are used–	Compliance is readily achievable. Detailed balustrade designs shall be provided and reviewed for compliance at CC stage.	CRA – Refer Annexure E

Section D: Access and Egress			
	○ a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and ○ the opening between rails must not be more than 460 mm <u>Balustrade openings – other than fire-isolated stairs</u> > A 125 mm sphere must not be able to pass through any opening and for stairways, the 125 mm is measured above the nosing line of the stair treads. <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). > Handrails in common areas (other than fire stairs) must also accord with D3.3.	Compliance is readily achievable. Detailed handrail designs shall be provided and reviewed for compliance at CC stage. Offset risers have been documented in the stairways as required to ensure that the handrail height is able to be consistent across all flight and landings.	CRA – Refer Annexure E

Section D: Access and Egress			
	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.		
D2.18: Fixed platforms, walkways stairways and ladders	Plant areas may be accessed via stairs and ladders compliant with AS 1657:2018.	For noting.	Noted
D2.19: Doorways and doors	> Sliding doors serving as *exit* doors must be openable manually under a force of not more than 110N. > *Exit* doors that are power operated must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source and if leading to road or open space, open automatically if there is a power failure or on the activation of a fire or smoke alarm anywhere in the *fire compartment* served by the door. > A power operated door in a path of travel to a required *exit* must be able to be opened manually under a force of not more than 110 N if there is a malfunction of the power source.	All doorways serving as required exits are swinging doors.	Complies
D2.20: Swinging doors	Swinging doors in a required *exit* must not encroach–	All swinging doors serving as required exits swing in the direction of egress and do not encroach by more than 500mm into the required clear egress width.	**FI – Refer Part 3.1**

Section D: Access and Egress			
	(i) at any part of its swing by more than 500 mm on the required 1m width of the *exit* and (ii) when fully open, by more than 100 mm on the required 1m *exit* width; and the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door. A swinging door in a required *exit* must swing in the direction of egress unless– > it serves a building or part with a floor area not more than 200 m2, it is the only required *exit* from the building or part and it is fitted with a device for holding it in the open position; or > it serves a sanitary compartment or airlock (in which case it may swing in either direction).	**Except for the Retail 1 doorway which shall swing in the direction of egress in accordance with the requirements of this Clause.**	
D2.21: Operation of latch	All doors in a required *exit* or forming part of a required *exit* AND doors in a path of travel to a required *exit* must be readily openable without a key from the side that faces a person seeking egress, by– (iii) a single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – (A) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and (B) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm and not more than 45mm; or	Compliance is readily achievable with the door hardware requirements. Door hardware details to be reviewed for compliance at CC stage.	CRA – Refer Annexure E

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	(iv) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor. (v) where the latch operation device referred to in (ii) is not located on the door leaf itself— (A) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located— (aa) not less than 500 mm from an internal corner; and (bb) for a hinged door, between 1 m and 2 m from the door leaf in any position; and (cc) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position. (B) braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. The above requirements do not apply to a door that – (i) serves only or is within a *sole-occupancy unit* in a Class 2 building; or (ii) serves a *sole-occupancy unit* in a Class 5, 6, 7 or 8 building with a floor area not more than 200m2; or (iii) are fitted with a fail-safe device which automatically unlocks the door upon the 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	Not applicable.	The building is not Class 9a or 9c, nor does it have an effective height of greater than 25m.	N/A

Section D: Access and Egress			
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.	Compliance is readily achievable. Statutory signage shall be documented in the signage schedule at CC stage.	CRA – Refer Annexure E
D2.24: Protection of openable windows	(a) Bedroom windows must be provided with protection if the floor below the window is 2m or more above the surface beneath. (b) Where the lowest level of the window opening is less than 1.7m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with– (A) a device to restrict the window opening; or (B) a screen with secure fittings. (ii) A device or screen required by (i) must– (A) not permit a 125 mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the– (aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.	Compliance is readily achievable. Window restricting devices shall be documented and reviewed for compliance at CC stage.	CRA – Refer Annexure E

Section D: Access and Egress			
	(c) A barrier with a height not less than 865 mm above the floor is required to an openable window– (i) in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and (ii) where the floor below the window is 4m or more above the surface beneath if the window is not covered by (a). (d) A barrier covered by (c) except for (e) must not– (i) permit a 125 mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. (e) A barrier required by (c) to an openable window in— (i) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and (ii) …		
D2.25: Timber stairways: concession	Not applicable.	There are no timber stairways proposed.	N/A
Part D3 – Access for People with A Disability			
D3.0: Deemed-to-Satisfy Provisions	Informational. Refer to separate Access Consultant's report.	For noting.	Noted

Section E: Services and Equipment			
Part E1 – Fire Fighting Equipment			
E1.0: Deemed-to-Satisfy Provisions	Informational.	For noting.	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. > Assuming it is attached to the building, be separated from the building by construction achieving FRL 90/90/90 for 2m either side of and 3m above the upper hose connections > Hydrant pump room location (if a pumpset is required). An internal pump room must have a door opening to a road or open space or egress to open space via a fire-isolated *exit*; > Internal hydrants in each fire-isolated *exit* at each storey providing coverage to all parts of the building. For internal fire hydrant coverage, all points on the floor must be covered by a 10m hose stream, issuing from 30 m hose length, extending not less than 1m into the room.	**The following Performance Solutions have been identified relating to the fire hydrant system** **a. Internal fire hydrants are proposed at mid landings, i.e., not technically at the floor level served by the hydrant; and** **b. The hydrant booster is located on Formosa Street which is not in sight of all main entries to the building.** The hydrant booster protection requirements of AS2419.1 do not apply where the building is to be sprinkler-protected throughout in accordance with AS2118.1 and therefore a concession is granted. The hydrant coverage and system performance shall be reviewed in detail at CC stage by the Hydraulic Consultant and certified for compliance.	**PS – Refer Part 3.3**
E1.4: Fire hose reels	A fire hose reel system complying with BCA clause E1.4 and AS 2441:2005 must be provided to the building (excluding Class 2 parts). All points on a floor shall be within reach of a 4 m hose stream issuing from a nozzle at the end of the hose laid on floor. The hose length shall not exceed 36 m. Fire hose reels must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors, except— (iii) …	There are no fire hose reels required to the Class 2 parts of the building. Compliance is otherwise readily achievable with the requirements of this Clause and AS2441 where no fire hose reels are yet documented at Ground Floor level, however, are documented in appropriate locations to the basement carparking levels.	CRA – Refer Annexure E

Section E: Services and Equipment			
	(iv) doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (v) doorway openings to shafts referred to in C3.13.		
E1.5: Sprinklers	The building must be provided with a sprinkler system complying with Table E1.5 and Specification E1.5 installed throughout.	As discussed earlier in this report, it has been assumed that the AS2118.1 sprinkler system required to the basement carpark is to be extended throughout the entire building in lieu of providing a separate FPAA system to the residential parts as require by E1.5. Compliance is readily achievable with the system design requirements and shall be certified at CC stage. The sprinkler valve room location should be indicated on the plans. The room must have direct egress to road or open space.	CRA – Refer Annexure E
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.	Compliance is readily achievable for the installation of portable fire extinguishers at any stage in the design.	CRA – Refer Annexure E

Section E: Services and Equipment			
E1.8: Fire control centres	Not applicable.	There is no fire control centre required in the building.	CRA – Refer Annexure E
E1.9: Fire precautions during construction	Informational– > During construction, not less than one portable fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required / temporary *exit*; and > After the building has reach an *effective height* of 12m, the required fire hydrants and fire hose reels must be operational on all floor / roof covered storeys, except for the 2 uppermost storeys; and all required booster connections must be installed.	For noting.	Noted
E1.10: Provision for special hazards	Not applicable.	At this stage it is not envisaged that special provision need be made for special problems which could arise for firefighting.	N/A
Part E2 – Smoke Hazard Management			
E2.0: Deemed-to-Satisfy Provisions	Informational	For noting.	Noted
E2.1: Application of Part	Informational.	For noting.	Noted
E2.2: General requirements (including Tables E2.2a and E2.2b)	**General smoke hazard management requirements** An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one *fire compartment* to another *fire compartment* or operates in a manner that may unduly contribute to the spread of smoke from one *fire compartment* to another *fire compartment* (such as lobby air supply) must—	Compliance is readily achievable with the smoke hazard management requirements. Detailed design specifications shall be provided at CC stage and certified for compliance.	CRA – Refer Annexure E

Section E: Services and Equipment			
	(i) be designed and installed to operate as a smoke control system in accordance with AS 1668.1:2015; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the *fire compartments* served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1668.1:2015; and for the purposes of this provision, each *sole-occupancy unit* in a Class 2 or 3 building is treated as a separate *fire compartment*. Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1:2015 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. A smoke detection system must be installed in accordance with Clause 6 of Specification E2.2a to operate AS1668.1:2015 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated *exits*. **Class 2 parts** Class 2 parts must be provided with an automatic smoke detection and alarm system complying with BCA Specification E2.2a. Note: Smoke alarms in sole occupancy units are required to be interconnected. Note: smoke detection technically need not be provided in the		

Section E: Services and Equipment			
	public corridors where the AS2118.1 sprinkler system is extended throughout. **Class 6 & 7b parts** The Class 6 and 7b parts will be protected throughout with a sprinkler system complying with AS2118.1 and therefore technically need not be provided with a smoke detection system. **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. The Class 7a part will also be protected throughout with a sprinkler system complying with AS2118.1.		
E2.3: Provisions for special hazards	Not applicable.	At this stage it is not envisaged that special provision need be made for additional smoke hazard management measures.	N/A
Part E3 – Lift Installations			
E3.0: Deemed-to-Satisfy Provisions	Informational.	For noting.	Noted
E3.1: Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1	Compliance is readily achievable. Certification shall be provided by the lift supplier/installer at CC stage.	CRA – Refer Annexure E
E3.2: Stretcher facility in lifts	A stretcher facility must be provided to an emergency lift required by E3.4.	Compliance is readily achievable. Certification shall be provided by the lift supplier/installer at CC stage.	CRA – Refer Annexure E

Section E: Services and Equipment				
		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.		
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.	Compliance is readily achievable. Certification shall be provided by the lift supplier/installer at CC stage.	CRA – Refer Annexure E
E3.4:	Emergency lifts	Not applicable.	The building does not require emergency lifts.	N/A
E3.5:	Landings	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D.	Compliance is readily achievable. Certification shall be provided by the lift supplier/installer at CC stage.	CRA – Refer Annexure E
E3.6:	Passenger lifts	Informational. Refer to separate Access Consultant's report.	For noting.	Noted
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.	Compliance is readily achievable. Certification shall be provided by the lift supplier/installer at CC stage.	CRA – Refer Annexure E

Section E: Services and Equipment			
E3.8: Aged care buildings	Not applicable.	The building is not an aged care building.	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.	Compliance is readily achievable. Certification shall be provided by the lift supplier/installer at CC stage.	CRA – Refer Annexure E
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.	Compliance is readily achievable. Certification shall be provided by the lift supplier/installer at CC stage.	CRA – Refer Annexure E
Part E4 – Visibility In An Emergency, Exit Signs And Warning Systems			
E4.0: Deemed-to-Satisfy Provisions	Informational.	For noting.	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.	Compliance is readily achievable. Detailed design specifications shall be provided at CC stage and certified for compliance.	CRA – Refer Annexure E
E4.3: Measurement of distance	Informational.	For noting.	Noted
E4.4: Design and operation of emergency lighting	The emergency lighting system must comply with AS/NZS 2293.1:2018.	Compliance is readily achievable. Detailed design specifications shall be provided at CC stage and certified for compliance.	CRA – Refer Annexure E
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.	Compliance is readily achievable. Detailed design specifications shall be provided at CC stage and certified for compliance.	CRA – Refer Annexure E
E4.6: Direction signs	Where an *exit* is not readily apparent, directional signage is to be installed indicating the direction of egress.	Compliance is readily achievable. Detailed design specifications shall be provided at CC stage and certified for compliance.	CRA – Refer Annexure E

Section E: Services and Equipment				
E4.7:	Class 2 and 3 buildings and Class 4 Parts: Exemptions	Informational.	For noting.	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.	Compliance is readily achievable. Detailed design specifications shall be provided at CC stage and certified for compliance.	CRA – Refer Annexure E
E4.9:	Emergency warning and intercom systems	Not applicable.	The building does not require an EWIS.	N/A

Section F: Health and Amenity				
Part F1 – Damp and Weatherproofing				
F1.0:	Deemed-to-Satisfy Provisions	*Performance Requirement* FP1.4, for the prevention of the penetration of water through external walls, must be complied with.	**There are no Deemed-to-Satisfy Provisions for this *Performance Requirement* in respect of external walls. The assessment contained within this report does not include an assessment against Performance Provision FP1.4. A Performance Solution is necessary to demonstrate compliance with the Performance Requirement FP1.4.**	**PS – Refer Part 3.3**
F1.1:	Stormwater drainage	Stormwater drainage to comply with AS/NZS 3500.3:2018.	Compliance is readily achievable. Details and certification to be provided at CC stage.	CRA – Refer Annexure E
F1.4:	External above ground membranes	Waterproofing membranes for external above ground use to comply with AS 4654 Parts 1 and 2:2012.	Compliance is readily achievable. Details and certification to be provided at CC stage. Based on a review of the section drawings, a set down is currently allowed for between the external balcony and internal floor levels of approximately 80mm based on the current plan scale.	CRA – Refer Annexure E

Section F: Health and Amenity			
F1.5: Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	Compliance is readily achievable. Details and certification to be provided at CC stage.	CRA – Refer Annexure E
F1.6: Sarking	*Sarking-type materials* used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2:2017.	Compliance is readily achievable. Details and certification to be provided at CC stage.	CRA – Refer Annexure E
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.	Compliance is readily achievable. Details and certification to be provided at CC stage.	CRA – Refer Annexure E
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.	Compliance is readily achievable. Details and certification to be provided at CC stage.	CRA – Refer Annexure E
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).	Compliance is readily achievable. Details and certification to be provided at CC stage.	CRA – Refer Annexure E
F1.11: Provision of floor wastes	In Class 2 buildings, 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.	Compliance is readily achievable. Details and certification to be provided at CC stage.	CRA – Refer Annexure E
F1.12: Sub-floor ventilation	Not applicable.	The building is concrete slab throughout.	CRA – Refer Annexure E
F1.13: Glazed Assemblies	Glazed assemblies are to comply with AS 2047:2014 and AS 1288:2006.	Compliance is readily achievable. Details and certification to be provided at CC stage.	CRA – Refer Annexure E
Part F2 – Sanitary and Other Facilities			
F2.0: Deemed-to-Satisfy Provisions	Informational.	For noting.	Noted

Section F: Health and Amenity			
F2.1: Facilities in residential buildings (including Table F2.1)	Each SOU must be provided with sanitary facilities; a kitchen sink; facility for the preparation and cooking of food; a bath or shower; a closet pan; wash basin; laundry wash tub and space for a washing machine and dryer.	Each SOU is provided with the required facilities.	CRA – Refer Annexure E
F2.2: Calculation of number of occupants and facilities	Informational.	For noting.	Noted
F2.3: Facilities in Class 3 to 9 buildings (including Table F2.3)	(a) Except where permitted by (b), (c), (f), F2.4(a) and F2.4(b), separate sanitary facilities for males and females must be provided for Class 3, 5, 6, 7, 8 or 9 buildings in accordance with Table F2.3. (b) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (c) If the majority of employees are one sex, not more than 2 employees of the other sex may share toilet facilities if the facilities are separated by means of walls, partitions and doors to afford privacy. (d) Employees and the public may share the same facilities in a Class 6 and 9b building (other than a school or early childhood centre) provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. (e) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females. (f) … (g) … (h) … (i) … (j) Not less than one washbasin must be provided where closet pans or urinals are provided.	**The combined maximum population number within Retail 1 and Retail 2 on Ground Floor level shall be confirmed. If the combined patron number is to exceed twenty (20) patrons and the Retail are to be food and beverage tenancies, then sanitary facilities will need to be provided to meet BCA F2.3 and Table F2.3.**	**FI – Refer Part 3.1**

Section F: Health and Amenity			
F2.4: Accessible sanitary facilities (including Table F2.4)	Informational. Refer to separate Access Consultant's report.	For noting.	Noted
F2.5: Construction of sanitary compartments	(a) Other than in an early childhood centre, 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) … (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.	Compliance is readily achievable. Details to be provided at CC stage for the construction and separation of sanitary compartments.	CRA – Refer Annexure E
F2.6: Interpretation: urinals and washbasins	Informational.	For noting.	Noted
F2.8: Waste Management	Not applicable.	The building is not a Class 9a or 9c building.	N/A
F2.9: Accessible adult change facilities	Informational. (i) Refer to separate Access Consultant's report.	For noting.	Noted
Part F3 – Room Sizes			

Section F: Health and Amenity				
F3.0:	Deemed-to-Satisfy Provisions	Informational	For noting.	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 or 3 building or Class 4 part of a building— (i) a kitchen, laundry, or the like — 2.1 m; and (ii) a corridor, passageway or the like — 2.1 m; and (iii) a habitable room excluding a kitchen — 2.4 m; and (iv) in a room or space with a sloping ceiling or projections below the ceiling line (v) … (c) in a Class 5, 6, 7 or 8 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) … (e) … (f) … (g) in any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and (ii) a commercial kitchen — 2.4 m; and (iii) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line	The height of rooms throughout are not less than 2700mm based on the available section drawings and therefore complies based on the information. To be re—confirmed at CC stage once RCPs are available.	Complies

Section F: Health and Amenity			
	of stairway treads or the floor surface of the ramp, landing or the like. (iv) …		
Part F4 – Light and Ventilation			
F4.0: Deemed-to-Satisfy Provisions	Informational.	For noting.	Noted
F4.1: Provision of natural light	Class 2 Natural light must be provided to all habitable rooms.	No detailed glazing specifications are provided for assessment, however based on the floor plans all habitable rooms and spaces are provided with natural light via openings in the external walls. To be assessed in more detail at CC stage to ensure the light transmitting area of the openings and roof lights are sufficient. **It is however noted that there are study nooks proposed which currently do not have compliance means of direct or borrowed natural light and this shall be considered further in the design.**	CRA – Refer Annexure E **FI – Refer Part 3.1**
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	No detailed glazing specifications are provided for assessment, however based on the floor plans all habitable rooms and spaces are provided with natural light via openings in the external walls. To be assessed in more detail at CC stage to ensure the light transmitting area of the openings and roof lights are sufficient. **It is however noted that there are study nooks proposed which currently do not have compliance means of direct or borrowed natural light and this shall be considered further in the design.**	CRA – Refer Annexure E **FI – Refer Part 3.1**

Section F: Health and Amenity			
	(iii) a proportional combination of windows and roof lights required by (i) and (ii). (b) … (c) 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 – (i) 1m; and (ii) 50% of the square root of the exterior height of the wall in which the window is located, measured from its sill. (d) …		
F4.3: Natural light borrowed from adjoining room	(a) Natural light to a room in a Class 2 building or Class 4 part of a building or in a sole-occupancy unit of a Class 3 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 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	No detailed glazing specifications are provided for assessment, however based on the floor plans all habitable rooms and spaces are provided with natural light via openings in the external walls where it does not appear as though there will be a need to borrow natural light from an adjoining room. To be assessed in more detail at CC stage to ensure the light transmitting area of the openings and roof lights are sufficient. **It is however noted that there are study nooks proposed which currently do not have compliance means of direct or borrowed natural light and this shall be considered further in the design.**	CRA – Refer Annexure E **FI – Refer Part 3.1**

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	(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.	Compliance is readily achievable. Certification shall be provided by the designer of the artificial lighting system at CC stage.	CRA – Refer Annexure E
F4.5: Ventilation of rooms	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2:2012.	No detailed specifications of ventilating openings are provided for assessment, however based on the floor plans all habitable rooms and spaces are able to be provided with natural ventilation via openings in the external walls. To be assessed in more detail at CC stage to ensure the ventilating area of openings are sufficient.	CRA – Refer Annexure E
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—	No detailed specifications of ventilating openings are provided for assessment, however based on the floor plans all habitable rooms and spaces are able to be provided with natural ventilation via openings in the external walls. To be assessed in more detail at CC stage to ensure the ventilating area of openings are sufficient.	CRA – Refer Annexure E

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	(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.		
F4.7: Ventilation borrowed from adjoining room	Ventilation may be 'borrowed' from adjoining rooms in some instances in accordance with this clause.	No detailed specifications of ventilation openings are provided for assessment, however based on the floor plans all habitable rooms and spaces are provided with a means of natural ventilation via openings in the external walls and therefore it is unlikely that natural ventilation would need to be borrowed. To be assessed in more detail at CC stage to ensure the ventilating area of openings are sufficient.	CRA – Refer Annexure E
F4.8: Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a – > kitchen or pantry > public dining room or restaurant > room used for public assembly (which is not an early childhood centre, primary school or open spectator stand) > workplace normally occupied by more than one person.	No sanitary compartments open directly into an area restricted by this Clause.	Complies
F4.9: Airlocks	Not applicable.	There is currently no requirement for an airlock per BCA F4.8.	N/A
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 > …	The carpark levels shall be provided with mechanical ventilation in accordance with AS1668.2. The Mechanical Consultant shall certify the carpark ventilation system at CC stage.	CRA – Refer Annexure E

Section F: Health and Amenity			
F4.12: Kitchen local exhaust ventilation	Not applicable.	There are currently no commercial kitchens proposed. Note that should either of the Retails be intended as a commercial kitchen in the future then provision shall be made in the design for a kitchen exhaust.	N/A
Part F5 – Sound Transmission and Insulation			
F5.0: Deemed-to-Satisfy Provisions	Informational	For noting.	Noted
F5.1: Application of Part	Informational– The Deemed-to-Satisfy Provisions of this Part apply to Class 2 buildings.	For noting.	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.	Compliance is readily achievable. Acoustic rating and separation details to be provided for assessment at CC stage.	CRA – Refer Annexure E
F5.3: Determination of impact sound insulation ratings	(a) A floor in a building required to have an impact sound insulation rating must— (i) have the required value for weighted normalised impact sound pressure level with spectrum adaptation term ($L_{n,w}$ + CI) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or (ii) comply with Specification F5.2.	Compliance is readily achievable. Acoustic rating and separation details to be provided for assessment at CC stage.	CRA – Refer Annexure E

Section F: Health and Amenity				
		(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.	Compliance is readily achievable. Acoustic rating and separation details to be provided for assessment at CC stage.	CRA – Refer Annexure E
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*	Compliance is readily achievable. Acoustic rating and separation details to be provided for assessment at CC stage.	CRA – Refer Annexure E

Section F: Health and Amenity			
	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. (e) …		
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.	Compliance is readily achievable. Acoustic rating and separation details to be provided for assessment at CC stage.	CRA – Refer Annexure E

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 E
Part F6 – Condensation Management				
F6.0:	Deemed-to-satisfy provisions	Informational.	For noting.	Noted
F6.1:	Application of Part	Informational.	For noting.	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.	Compliance is readily achievable. The condensation management system shall be designed and documented at CC stage. A Façade Engineer shall be engaged to design the condensation management and external weatherproofing systems.	CRA – Refer Annexure E
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	Compliance is readily achievable. The condensation management system shall be designed and documented at CC stage. A Façade Engineer shall be engaged to design the condensation management and external weatherproofing systems.	CRA – Refer Annexure E

Section F: Health and Amenity			
	(ii) to a roof space that is ventilated in accordance with F6.4		
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.	Compliance is readily achievable. The condensation management system shall be designed and documented at CC stage. A Façade Engineer shall be engaged to design the condensation management and external weatherproofing systems.	CRA – Refer Annexure E

Section G: Ancillary Provisions			
Part G1 – Minor Structures and Components			
G1.0: Deemed-to-Satisfy Provisions	Informational	Noted	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.	Compliance is readily achievable. Provision for the cleaning of external windows shall be made in accordance with the WHS Act and Regulations.	CRA – Refer Annexure E

Section G: Ancillary Provisions			
Part G2 – Boilers, Pressure Vessels, Heating Appliances, Fireplaces, Chimneys and Flues			
G2.0: Deemed-to-Satisfy Provisions	Not applicable.	There are no prescribed appliances proposed at this stage.	N/A
Part G3 – Atrium Construction			
G3.1: Atriums Affected by the Part	Not applicable.	There is no atrium proposed.	N/A
Part G4 – Construction in Alpine Areas			
G4.0: Deemed-to-Satisfy Provisions	Not applicable.	The building is not in an alpine area.	N/A
Part G5 – Construction in Bushfire Prone Areas			
G5.0: Deemed-to-Satisfy Provisions	Not applicable.	The building is not I a bushfire prone area.	N/A
Part G6 – Occupiable Outdoor Areas			
G6.1: Application of part	Not applicable.	The communal open rooftop is already deemed a storey.	N/A

Section H: Special Use Buildings			
Part H1 – Class 9b Buildings			
NSW H1.1: Application of Part	Not applicable.	The building is not a Class 9b building.	N/A
NSW Part H102 – Temporary Structures			

Section H: Special Use Buildings			
NSW H102.1: Application of Part	Not applicable.	There are no temporary structures.	N/A
NSW Part H103 – Drive In Theatres			
NSW H103.1: Application of Part	Not applicable.	The building is not a drive-in theatre.	N/A
Part H2 – Public Transport Buildings			
H2.1: Application of Part	Not applicable.	The building is not a public transport building.	N/A
Part H3 – Farm Building and Farm Sheds			
H3.1: Application of Part	Not applicable.	The building is not a farm building or farm shed.	N/A

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

Section J: Energy Efficiency			
Part J0 – Energy Efficiency			
J0.1: Application of Section J	Refer to separate Consultant's Section J/BASIX Assessment Reports.	For noting.	Noted

ANNEXURE E BCA COMPLIANCE SPECIFICATION

Annexure E – 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 FRLs 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. 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. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C3.2 and C3.3 of BCA2019 or protected in accordance with Clause C3.4 of BCA2019, except as varied by any Fire Engineered Performance Solution.
11. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C3.5 of BCA2019.
12. 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.
13. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C3.9 of BCA2019.
14. 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.
15. 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.
16. The lift doors will be -/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C3.10 of BCA2019.
17. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C3.11 of BCA2019.

18. 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.
19. A lintel will have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and it spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non-loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification C1.1 Clause 2.3 BCA2019.
20. 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.
21. 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.
22. Fire doors will comply with AS 1905.1:2015 and Specification C3.4 of BCA2019.
23. Fire shutters and fire windows will be in accordance with Specification C3.4 of BCA2019.
24. The required exits will be fire-isolated in accordance with Clause D1.3 of BCA2019.
25. Travel distances to exits will be in accordance with Clause D1.4 of BCA2019, except as varied by any Fire Engineered Performance Solution.
26. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
27. The fire-isolated exits will be in accordance with Clause D1.7 of BCA2019.
28. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
29. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
30. The stairway or ramp within the fire-isolated shaft is to be non-combustible, and if there is a local failure not cause structural damage or impair the fire resistance of the shaft, in accordance with Clause D2.2 of BCA2019.
31. The ramp or balcony provided for smoke hazard management requirements will be in accordance with Clause D2.5 of BCA2019.
32. The construction of EDBs and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2019 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
33. The fire-isolated passageway will be in accordance with Clause D2.11 of BCA2019.
34. The roof of the building where the exit discharges will have an FRL of 120/120/120, and will not have roof lights or openings within 3m of the path of travel in accordance with Clause D2.12 of BCA2019.
35. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
36. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.

37. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
38. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
39. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
40. Signage will be provided on fire doors in accordance with Clause D2.23 of BCA2019.
41. 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.
42. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.
43. Additional provisions will be made in accordance with Clause E1.10 of BCA2019, due to the special hazards associated with the building works or the location of the building works.
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. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
54. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.
55. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.
56. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
57. 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.
58. 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.
59. The stoves, heaters or similar appliances installed in the building will be in accordance with AS/NZS 2918:2018 and Clause G2.2 of BCA2019.

60. 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.
61. 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.
62. The building will be designed in accordance with Section J of BCA2019.

Electrical Services Design Certification:

63. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019.
64. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
65. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
66. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.
67. The building will be designed in accordance with Section J of BCA2019.

Hydraulic Services Design Certification:

68. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
69. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS 2419.1:2005 as required.
70. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2019 and AS 2441:2005.
71. A sprinkler system will be installed in accordance with Clause E1.5 of BCA2019, Specification E1.5 and appropriate part(s) of AS 2118.
72. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.
73. The building will be designed in accordance with Section J of BCA2019.

Mechanical Services Design Certification:

74. 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.
75. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS 1668.2:2012.
76. 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.
77. Any commercial kitchen will be provided with a kitchen exhaust hood in accordance with Clause F4.12 of BCA2019, and AS 1668.1:2015 and AS 1668.2:2012.
78. 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.
79. Where exhaust discharges directly or via shaft into a roof space of a Class 2 *sole-occupancy unit*, ventilation of the roof space will comply with Clause F6.4 of BCA2019.

80. The building will be designed in accordance with Section J of BCA2019.
81. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineering Design Certification:

82. 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. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
83. The FRLs 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.
84. The lift shaft will have an FRL in accordance with Clause C2.10 and Specification C1.1 of BCA2019.
85. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
86. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2019 to reinstate the FRL of the element concerned.
87. 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:

88. 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.
89. 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.
90. 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.
91. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3.10.
92. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3.6 of BCA2019.
93. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification E3.1 of BCA2019.

Acoustic Services Design Certification:

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