BCA Assessment Report

427 Burwood Road, Belmore

Project:	427 Burwood Road, Belmore
Reference No:	114792-BCA-r2
Date:	1 December 2022
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Document Control

Revision	Date	Description	
114792-BCA-r1	29 June 2022	BCA Assessment Report (DA Stage)	
114792-BCA-r2	1 December 2022	Updated BCA Assessment Report (DA Stage)	
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EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings for the proposed building development at 427 Burwood Road, Belmore, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2019, Volume 1 Amendment 1.

Part 3 'Matters for Further Consideration' of this report outlines the identified BCA compliance issues that require further information or consideration and/or assessment as Performance Solutions.

Any Performance Solution will need to be detailed in a separate report and must clearly indicate methodologies for achieving compliance with the relevant BCA Performance Requirements.

Item	Description	BCA Provision
Non-Fire Performance Solutions Required		
1.	The construction of external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	No DtS Provisions – FP1.4 Performance Provisions Only
2.	The ability to supervise children from the kitchen area has not been provided where the Early Childhood Centre is shown to accommodate children younger than 2 years of age.	BCA Clause F2.3

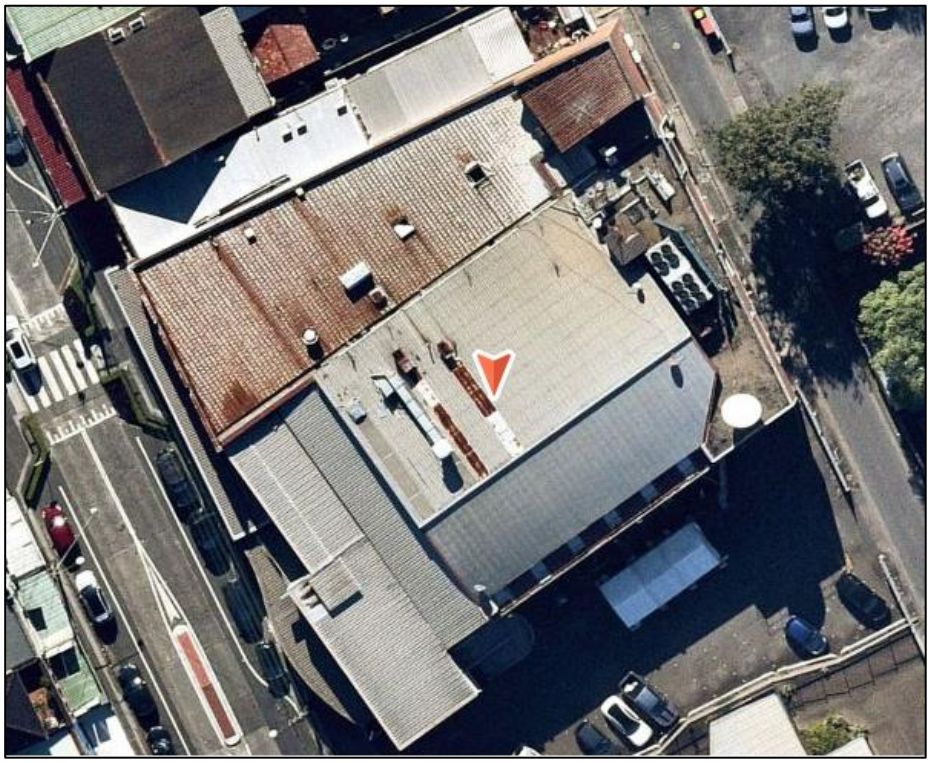
Annexure D to this report provides a detailed assessment of the proposal against ALL relevant Deemed-to-Satisfy Provisions of the BCA.

1 BASIS OF ASSESSMENT

1.1. Location and Description

The building development, the subject of this report, is located at 427 Burwood Road, Belmore. The proposed Early Childcare Centre consists of a two (2) storey building development with external carpark containing of twenty-three (23) parking spaces in which one (1) is accessible.

The site is accessible via a vehicular entrance provided to the west and east elevations off Burwood Rd and Acacia Ln respectively. Pedestrian access is provided directly from Burwood Road.



Proposed Site Location (Image courtesy of Nearmaps)

1.2. Purpose

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

1.3. Building Code of Australia

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

1.4. Limitations

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

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

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

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

This report does not include, or imply compliance with:

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

(b) the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010)

(c) The Deemed-to-Satisfy provisions of Part D3, E3.6 and F2.4 of BCA2019;

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

(e) Work Health and Safety Act 2011;

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

(g) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and

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

1.5. Design Documentation

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

2 BUILDING DESCRIPTION

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

2.1. Rise in Storeys (Clause C1.2)

The building has a rise in storeys of two (2)

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
Class 9b	Ground, First floor	Early Childhood Centre

2.3. Effective Height (Clause A1.0)

The building has an *effective height* of less than 12 metres. (RL28.830 – RL23.480 = 5.35m)

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

The building is required to be of Type B Construction.

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

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

Class 9b	Maximum Floor Area	5 500 m^2
	Maximum Volume	33 000 m^3

2.6. Fire Compartments

The following *fire compartments* have been assumed:

(a) The whole building is considered one fire compartment.

2.7. Exits

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

Ground floor

(a) Swinging door from non-fire-isolated stair to external carpark / shared zone

(b) Swinging door to Acacia Lane

First floor

(a) First riser of each non-fire-isolated stairs leading to ground floor

2.8. Climate Zone (Clause A1.0)

The building is located within Climate Zone 6

2.9. Location of Fire-source features

The fire source features for the subject development are:

North: The side allotment boundary

South: The side allotment boundary

East: The far boundary of Acacia Lane

West: The far boundary of Burwood Road

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

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

(b) is neither transparent nor translucent.

3 MATTERS FOR FURTHER CONSIDERATION

3.1. General

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

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

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

3.2. Dimensions and Tolerances

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

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

3.3. Performance Based Design – Performance Solutions

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

Table 2. Non-fire-engineered Performance Solutions

Item	Description of Performance Solution	DTS Provision
1.	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.	No DtS Provisions – FP1.4 Performance Provisions Only
2.	The ability to supervise children from the kitchen area has not been provided where the Early Childhood Centre accommodates children younger than 2 years of age.	BCA Clause F2.3

3.4. Further information Required

3.4.1. BCA Clause C1.9 - Façade Construction (Non-Combustible)

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

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

(A) a Class 9 building; and

(B) …

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

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

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

(i) Plasterboard.

(ii) Perforated gypsum lath with a normal paper finish

(iii) Fibrous-plaster sheet.

(iv) Fibre-reinforced cement sheeting.

(v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.

(vi) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5.

(vii) Bonded laminated materials where—

(A) each lamina, including any core, is *non-combustible*; and

(B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and

(C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.

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

- Northern elevation – No external wall construction nominated on plans – further assessment required as design progresses to ensure *non-combustible* wall construction complies with above.
- Southern elevation – No external wall construction nominated on plans – further assessment required as design progresses to ensure *non-combustible* wall construction complies with above.
- Eastern elevation – No external wall construction nominated on plans – further assessment required as design progresses to ensure *non-combustible* wall construction complies with above.
- Western elevation – No external wall construction nominated on plans – further assessment required as design progresses to ensure *non-combustible* wall construction complies with above.

It is also noted that this clause also prohibits the use of in situ formwork containing combustible elements including PVC lined formwork products where the PVC lining remains in place for the life of the building

where proposed to be used as an external wall element, common walls, the flooring and floor framing of lift pits, services riser shafts or non-*loadbearing* internal walls required to be fire resisting.

Note: Due to industry wide changes to Professional Indemnity Insurance which include exclusions to external combustible cladding, BCA Logic are not in a position to recommend, advocate for, or undertake performance-based solutions for any combustible wall elements including external claddings or the use of PVC lined formwork products and the like. A reference to the use of any of these products within this report is not to be taken as support for their use in the building. BCA Logic are not responsible for the selection of any materials and our report outlines compliance pathways and whether or not compliance is achieved only.

3.4.2. BCA Clause F1.4 – External Above Ground Membrane

To achieve compliance with Clause F1.4, AS 4654.1 & 2 the external balconies are required to be provided with a minimum step-down or hob of 70mm (N3 wind class) between the internal and external finished floor levels, or a grated drain where sufficient step down is not achieved.

It is the opinion of BCA logic that where there is no hob or step down provided from the internal to external areas a grated drain is required to be provided. It is to be noted that the grated drain is required along the length of the opening.

It is recommended that a Waterproofing Specialist review all external waterproofing details in particular external walkways, balconies and planter boxes which are susceptible to failure.

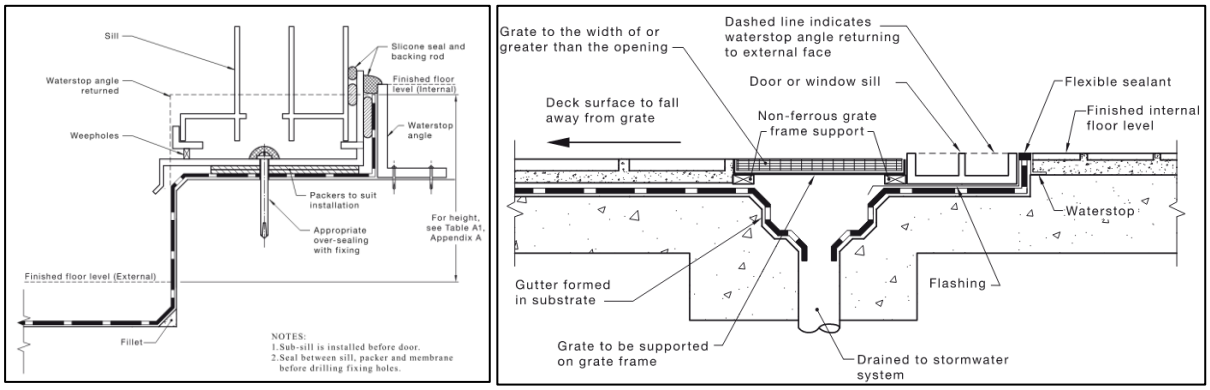


Figure 1 – Typical Details (External Waterproofing)

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 Supercontext Studio			
Drawing Number	**Date**	**Revision**	**Title**
A002	29/11/2022	06	FRONT PAGE
A003	29/11/2022	02	SCHEDULES
A050	29/11/2022	06	EXISTING SITE PLAN
A100	29/11/2022	07	GROUND FLOOR DEMO PLAN
A101	29/11/2022	07	FIRST FLOOR DEMO PLAN
A102	29/11/2022	07	GROUND FLOOR PLAN
A103	29/11/2022	07	FIRST FLOOR PLAN
A104	29/11/2022	07	ROOFTOP PLAN
A105	29/11/2022	02	NEIGHBOUR NOTIFICATION PLANS
A200	29/11/2022	06	ELEVATIONS – DEMOLITION
A201	29/11/2022	07	ELEVATIONS
A300	29/11/2022	06	SECTIONS

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.	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
2.	Lightweight construction	**BCA2019 C1.1, Spec. C1.1** **BCA2019 C1.8, Spec C1.8** **BCA2019 D2.8** (Enclosure of Space under Stairs and ramps) AS1530.4:2014
General		
3.	Portable fire extinguishers	**BCA2019 E1.6** AS 2444–2001
General Egress		
4.	Automatic fail safe devices > Auto open Sliding Exit doors	**BCA2019 D2.21** (Operation of Latches) AS 1670.1:2018 (Fire)
5.	Operation of Door latches > Failsafe > Manual Push Button Control	**D2.21** (Operation of Latch) AS 1670.1:2018
6.	Required Automatic Doors	**D2.19** (Doorways and Doors)
7.	Warning & operational signs	**BCA2019 D3.6** (Braille Exit Signs) (Note: E4.5 (Exit Signs)) **BCA2019 E3.3** (Lift Signs)
Lifts		
8.	Access to Lift Pits > Located at lowest level	**BCA2019 D1.17** (Access to Lift Pits)
Electrical Services		

Item	Essential Fire and Other Safety Measures	Standard of Performance
9.	Automatic fire detection & alarm: > Clause 4 – AS 1670.1:2018 system	**BCA2019 E2.2**, NSW Table E2.2a, Table 2.2b, **Spec E2.2a** - Clause 4 (Smoke detection system) **Spec E2.2a** – Clause 6 (Smoke detection for smoke control systems) **Spec E2.2a** - Clause 7 (BOWS) AS 1670.1:2018 (Fire) – Section 4 and 5 (Detectors) AS 1670.1:2018 (Fire) – Section 7 (Smoke Control)
10.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1:2018
11.	Exit signs	**BCA2019 E4.5** (Exit Signs) **BCA2019 E4.6** (Direction Signs) **BCA2019 E4.8** (Design and Operation - Exits) AS/NZS 2293.1:2018
12.	Smoke detectors & heat detectors 1. Auto-shutdown of Air-handling System. > (NSW Table E2.2b) - Any system in a Class 9b assembly building which does not form part of a smoke hazard management system, other than: ○ non-ducted individual room units with a capacity of not more than 1000 L/s; or ○ miscellaneous exhaust are systems installed as per Section 5 and 6 of AS/NZS 1668.1:2015.	**BCA2019 E2.2, Spec E2.2a** AS 1668.1:2015
Hydraulic Services		
13.	Fire hydrant systems	**BCA2019 E1.3** AS 2419.1:2005 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'
14.	Hose reel systems	**BCA2019 E1.4** AS 2441:2005
Mechanical Services		

Item	Essential Fire and Other Safety Measures	Standard of Performance
15.	1. Auto-shutdown of Air-handling System. > (NSW Table E2.2b) - Any system in a Class 9b assembly building which does not form part of a smoke hazard management system, other than: > non-ducted individual room units with a capacity of not more than 1000 L/s; or > miscellaneous exhaust are systems installed as per Section 5 and 6 of AS 1668.1:2015.	**BCA2019 E2.2, Table E2.2a, Table E2.2b** **Spec E2.2a** AS 1668.1:2015 (Amdt 1)

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 B Construction

Table 5. Type B Construction

Item	Class 9b
Loadbearing External Walls - Less than 1.5m to a *fire- source feature* - 1.5 – less 3m from *fire- source feature* - 3 – less 9m from *a fire- source feature* - 9 – less 18m from a *fire- source feature* - 18m or more from a *fire- source feature*	120/120/120 120/90/60 120/30/30 120/30/- -/-/-
Non-Loadbearing External Walls - Less than 1.5m to a *fire- source feature* - 1.5 – less 3m from *fire- source feature* - 3m or more from a *fire- source feature*	-/120/120 -/90/60 -/-/-
Loadbearing External Columns - Less than 18m - 18m or more	120/-/- -/-/-
Non-Loadbearing External Columns	-/-/-
Common Walls & Fire Walls	120/120/120
Stair and Lift Shafts required to be fire-resisting - Loadbearing Stair & Lift shaft - Non-loadbearing Stair shaft only	120/120/120 -/120/120
Internal walls bounding sole occupancy units - Loadbearing - Non-loadbearing	120/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: - Loadbearing - Non-loadbearing	120/-/- -/-/-
Other loadbearing internal walls and columns	120/-/-
Roofs	-/-/-

ANNEXURE D DETAILED BCA 2019 ASSESSMENT

Annexure D – Detailed BCA 2019 Assessment

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

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

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

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

Deemed to Satisfy Clause Assessment

Table 6. Deemed to Satisfy Clause Assessment

Clause	Clause Requirements	Comment	Status
Section B: Structure			
Part B1 – Structural Provisions			
B1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
B1.1: Resistance to actions	The resistance of the building must be greater than the most critical action effect resulting from different combinations of actions, where the most critical action has been determined in accordance with this Part	Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
B1.2: Determination of individual actions	The magnitude of actions must be determined in accordance with this Clause.	Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
B1.4: Determination of structural resistance of materials and forms of construction	The structural resistance of materials and forms of construction must be determined in accordance with this Clause.	Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
B1.5: Structural software	Structural software used in computer aided design of a building or structure within the geometrical limits of (b) of this Clause must comply with the ABCB Protocol for Structural Software.	Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
B1.6 Construction of buildings in flood hazard areas	A Class 2 or 3 building, Class 9a health care building, Class 9c aged-care building or Class 4 part of a building, in a flood hazard area (refer to Council maps) must	Structural Engineer to certify at CC stage.	CRA – Refer Annexure F

Section B: Structure			
	comply the ABCB Standard for Construction of Buildings in Flood Hazard Areas.		

Section C: Fire Resistance			
Part C1 – Fire Resistance and Stability			
C1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C1.1: Type of construction required	The building is required to be of Type B Construction. Refer to Specification C1.1 requirements at the end of this Section.	This building requires Type B Construction	CRA – Refer Annexure F
C1.2: Calculation of rise in storeys	(a) The rise in storeys is the sum of the greatest number of storeys at any part of the external walls of the building and any storeys within the roof space – (i) Above the finished ground next to that part; or (ii) If part of the external wall is on the boundary of the allotment, above the natural ground level at the relevant part of the boundary.	The building has a rise in storeys of two (2)	Noted
C1.3: Buildings of multiple classification	Informational	Noted	Noted
C1.4: Mixed Types of construction	A building may be of mixed Types of construction where it is separated in accordance with C2.7 and the Type of construction is determined in accordance with C1.1 or C1.3.	The building will contain solely Type B Construction.	N/A

Section C: Fire Resistance				
C1.5:	Two Storey Class 2, 3 or 9c buildings	N/A	N/A	N/A
C1.6:	Class 4 Parts of building	N/A	N/A	N/A
C1.7:	Open spectator stands and indoor sports stadium	N/A	N/A	N/A
C1.8:	Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8.	No details of lightweight construction readily shown for a DA stage assessment. To be further assessed with design development at CC stage where compliance is readily achievable.	CRA – Refer Annexure F
C1.9:	Non-combustible building elements	(a) In a building required to be of Type 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 B construction, subject to C2.10, in—	The building is deemed to be Type B Construction and will require non-combustible construction in accordance with BCA Clause C1.9. No details have been provided for assessment of materials or building elements to confirm non-combustibility in accordance with this clause. Further details for building elements to be provided at CC stage for assessment where compliance is assumed to be readily achievable.	CRA – Refer Annexure F

Section C: Fire Resistance			
	(A) a Class 9 building; and (B) … (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		

Section C: Fire Resistance			
	of the adhesive layers does not exceed 2 mm; and (C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively. This clause also prohibits the use of in situ formwork containing combustible elements including PVC lined formwork products where the PVC lining remains in place for the life of the building. Where the use of such products is proposed – in all instances the material must be the subject of a site specific Performance Assessment Report.		
C1.10: Fire hazard properties	Fire hazard properties of internal linings, materials and assemblies must comply with C1.10 of the BCA and Specification C1.10, including floor, wall and ceiling linings, air-handling ductwork, lift cars, insulation, *sarking-type materials* and attachments, or be considered *non-combustible*.	Specific details with regards to the linings of internal floors, walls and ceilings have not been provided at this stage. The following is to be achieved in a non-sprinkler protected building; **Class 9b** Floor Linings A critical radiant flux of 2.2 kW/m^2 A maximum smoke development rate of 750 percent-minutes; Wall & ceiling Linings Public Corridors; Group 1 Ceilings; Public Corridors; Group 1 Rigid and flexible ductwork must comply with the fire hazard properties set out in AS 4254.1and AS 4254.2.	CRA – Refer Annexure F

Section C: Fire Resistance			
		A BCA specification and schedule of proposed materials and finishes are to be provided as part of an updated architectural set for further assessment at CC stage.	
C1.11: Performance of external walls in fire	N/A	N/A	N/A
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.	Noted	Noted
C1.13: Fire-protected timber: Concession	N/A	N/A	N/A
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be *non-combustible* unless it is one of the following: (a) An ancillary element that is *non-combustible*. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grille not more than 2 m² in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and	Based upon the proposed plans, there is an awning overhang located above ground floor which is shown to be glass construction. Due to the awning being attached to the external wall which is required to be non-combustible, it will be necessary to confirm that the proposed awning will be of non-combustible construction in accordance with the provisions of this clause at CC stage for further assessment.	CRA – Refer Annexure F

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	(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. (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k).		
Part C2 – Compartment and Separation			
C2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C2.1: Application of Part	Informational -	Noted	Noted

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	C2.2, C2.3 and C2.4 do not apply to a carpark provided with a sprinkler system complying with Specification E1.5 (other than an FPAA101D or FPAA101H system), an open-deck carpark or an open spectator stand.		
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 ground floor and first floor are not proposed to be separated and will be deemed as a single fire compartment for the provisions of this clause. The size of the fire compartment of the building does not exceed the general floor area and volume limitations in accordance with this clause.	**Complies**
C2.3: Large isolated buildings	N/A	N/A	N/A
C2.4: Requirements for open spaces and vehicular access	N/A	N/A	N/A
C2.5: Class 9 Buildings	N/A	N/A	N/A
C2.6: Vertical separation of openings in external walls	N/A	This Clause does not apply to Type B Construction. This clause is not applicable.	N/A
C2.7: Separation by fire walls	N/A	N/A	N/A
C2.8: Separation of classifications in the same storey	N/a	The building is solely Class 9b, this is not applicable.	N/A
C2.9: Separation of classifications in different storeys	N/A	The building is solely Class 9b, this is not applicable.	N/A

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C2.10: Separation of lift shafts	N/A	The single proposed lift connects two (2) storeys. This clause is not applicable.	N/A
C2.11: Stairways and lifts in one shaft	A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft.	The stairways and single proposed lift are located separate from one another. This clause is not applicable.	N/A
C2.12: Separation of equipment	Any of the following equipment located in the building must be separated from the remainder of the building: > lift motors and lift control panels; or > emergency generators used to sustain emergency equipment operating in the emergency mode; or > 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.	This clause does not apply to the equipment proposed in this building. It is assumed that all fire services have a battery back-up system, further details to assess if the total voltage is 12 volts or more and contain storage capacity of 200kWh or more at CC stage.	CRA – Refer Annexure F

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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;	No details of an electricity supply system provided at this stage, to be further assessed with design development at CC stage.	CRA – Refer Annexure F

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	○ hose reel pumps; ○ 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. Note: Consideration should be given to the location of Electrical Substations on adjoining sites in regards to proximity to Fire Hydrant Boosters being within 10.0m		
C2.14: Public corridors in Class 2 and 3 Buildings	N/A	N/A	N/A
Part C3 – Protection of Openings			
C3.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C3.1: Application of Part	(a) The Deemed-to-Satisfy Provisions of this Part do not apply to– (i) Control joints, weep holes and the like in external walls of masonry construction and joints between panels in external walls of pre-cast concrete panel construction if, in all cases they are not larger than necessary for the purpose; and (ii) Non-combustible ventilators for subfloor or cavity ventilation, if each does not exceed 45 000 mm2 in face area and is spaced not less than 2 m from any other ventilator in the same wall; and	Noted	Noted

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	(iii) Openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like; and (iv) In a carpark– (A) Service penetrations through; and (B) Openings formed by a vehicle ramp in, (aa) A floor other than a floor that separates a part not used as a carpark, providing the connected floors comply as a single fire compartment for the purposes of all other requirements of the Deemed-to-Satisfy Provisions of Sections C, D and E. (b) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings in building elements required to be fire-resisting include doorways, windows (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL. (c) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings, other than those covered under (a)(iii), between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the building, are deemed to be openings in an external wall.		
C3.2: Protection of openings in external walls	Openings in an external wall that is required to have an *FRL* must be protected in accordance with C3.4 if the distance between the opening and the *fire-source feature* is:	Based upon scaled measurements of the available details of the development, all openings in external walls are located more than 3m to a side allotment boundary and more than 6m to the far boundary of a road deemed	**Complies**

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		> less than 3 m from a side or rear boundary; or > less than 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or > less than 6 m from another building on the allotment that is not Class 10; and if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand. Where wall-wetting sprinklers are used, they must be located externally.	as a fire-source feature, therefore no protection under this clause would be required.	
C3.3:	Separation of external walls and associated openings in different fire compartments	N/A	The building is considered one fire compartment. This clause is not applicable.	N/A
C3.4:	Acceptable methods of protection	Where protection is required, openings must be protected as follows: <u>Doorways:</u> (ii) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or (iii) –/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	No openings are required to be protected under Clause C3.2, therefore this clause is not applicable.	N/A

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	(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	N/A	N/A	N/A
C3.6: Sliding fire doors	N/A	N/A	N/A
C3.7: Protection of doorways in horizontal exits	N/A	N/A	N/A
C3.8: Openings in fire-isolated exits	N/A	N/A	N/A
C3.9: Service penetrations in fire-isolated exits	N/A	N/A	N/A
C3.10: Openings in fire-isolated lift shafts	N/A	The single lift shaft will not be required to be fire isolated. This clause is not applicable.	N/A
C3.11: Bounding Construction: Class 2, 3 and 4 Buildings	N/A	N/A	N/A

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C3.12: Openings in floors and ceilings for services	Where services pass through a floor which is required to achieve an *FRL* or a ceiling required to have a *resistance to the incipient spread of fire*, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15. 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.	No details for services passing through openings in floors and ceilings for a DA stage assessment. To be further assessed with design development at CC stage where compliance is readily achievable.	CRA – Refer Annexure F
C3.13: Openings in shafts	N/A	N/A	N/A
C3.15: Openings for service installations	Where services pass through an element which is required to achieve an *FRL* (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15. **Note:** contractors should check with PCA to confirm compliance with their proposed fire stopping method.	There are no details provided for the protection of service installations. This shall be further assessed at CC stage.	CRA – Refer Annexure F
C3.16: Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4:2014 to achieve the required *FRL*.	There are no details provided for the construction joints. This shall be further assessed at CC stage.	CRA – Refer Annexure F
C3.17: Columns protected with lightweight construction to achieve an FRL	A column protected by lightweight construction to achieve an *FRL* which passes through a building element that is required to have an *FRL* or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required *FRL* or resistance to the incipient spread of fire.	There are no details provided for the lightweight columns (if any). This shall be further assessed at CC stage.	CRA – Refer Annexure F
Specification C1.1 – Fire-Resisting Construction			

Section C: Fire Resistance				
2.0:	General Requirements	Informational	Noted	Noted
2.1:	Exposure to fire-source features	A building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the *fire-source feature*, or vertical projection of the feature, is not obstructed by another part of the building that– (iii) has an *FRL* of not less than 30/–/–; and (iv) is neither transparent nor translucent.	Noted	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.	As per the requirements of Type B Construction, any fire-rated construction to the columns and walls of the first floor are to be provided with a supporting slab that will not reduce the FRL required to the above as per this clause. Structural Engineer to certify any retained components and new components for applications associated with the requirements of this clause at CC stage.	CRA – Refer Annexure F
2.3:	Lintels	A lintel must have the FRL required for the part of the building in which it is situated unless it does not contribute to the support of a fire door, fire window or fire shutter and meets the requirements of Spec C1.1 clause 2.3 (a) & (b).	Not enough details provided for a DA stage assessment of any proposed lintels in this building. Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
2.4:	Attachments not to impair fire-resistance	The method of attaching or installing a finish, lining, ancillary element or service installation to a building element must not reduce the fire-resistance of that element to below that required.	Not enough information available for a DA stage assessment. Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
2.5:	General concessions	Structures on roofs — A *non-combustible* structure situated on a roof need not comply with the other provisions of this Specification if it only contains—	There are no concessions applied to this building based on available details.	Noted

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		(i) lift motor equipment; or (ii) one or more of the following: (A) Hot water or other water tanks. (B) Ventilating ductwork, ventilating fans and their motors. (C) Air-conditioning chillers. (D) Window cleaning equipment. (E) Other service units that are *non-combustible* and do not contain flammable or combustible liquids or gases.		
2.6:	Mezzanine floors: Concession	N/A	N/A	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.	The proposed single lift shaft will not be required to be fire-rated, as such this clause is not applicable. Subject to further design development at CC stage where compliance is readily achievable.	N/A
2.8:	Carparks in Class 2 and 3 Buildings	N/A	This is not applicable to this building.	N/A
2.9:	Residential Aged Care building: Concession	N/A	N/A	N/A

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4.0:	Type B Fire-Resisting Construction	Type B fire-resisting construction is applicable to the development.	Refer to part 3 clauses below for the relevant Type B Construction requirements appliable to the project.	Noted
4.1:	Fire-resistance of building elements	The *FRL*'s of all elements are to be in accordance with the *FRL*'s detailed in the Table contained within Part 4.0 of this report. > External walls, common walls and the flooring and floor framing of lift pits must be *non-combustible* (Note: insulation and sarking used must be *non-combustible*) > if a stair shaft supports any floor or a structural part of it— (i) the floor or part must have an *FRL* of 60/–/– or more; or (ii) the junction of the stair shaft must be constructed so that the floor or part will be free to sag or fall in a fire without causing structural damage to the shaft; and > Internal walls required to be fire rated must extend to– (i) to the underside of the floor next above if that floor has an *FRL* of at least 30/30/30; or (ii) the underside of a roof complying with Table 3; or (iii) the underside of a ceiling having a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes; or (iv) the underside of the roof covering if it is *non-combustible* and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-*	Not enough information available for a DA stage assessment of existing and proposed FRL's. To be further assessed with design development to ensure any new and retained building elements will be constructed with FRL's as prescribed in Spec C1.1 for Type B Construction where required to the development.	CRA – Refer Annexure F

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	type material, must not be crossed by timber or other combustible building elements; or (v) 450 mm above the roof covering if it is combustible; and > Load bearing internal walls (including those part of a loadbearing shaft) and *fire walls* must be of concrete or masonry. (or fire protected timber…) > Non-loadbearing internal walls required to be fire rated must be of *non-combustible* construction. **Note:** This includes *non-combustible* insulation. When an insulation material is not certified as *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage. > in a Class 9 building, in the storey immediately below the roof, internal columns and internal walls other than *fire walls* and shaft walls, need not comply with Table 4; and > lift, subject to C2.10, ventilating, pipe, garbage, and similar shafts which are not for the discharge of hot products of combustion and not loadbearing, must be of *non-combustible* construction in— (i) a Class 9 building; and (ii) … > in a Class 9b building, a floor separating storeys or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, must— (i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a resistance to		

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	the incipient spread of fire to the space above itself of not less than 60 minutes; or (ii) have an *FRL* of at least 30/30/30; or (iii) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal.		
4.2: Carparks	N/A	The carpark is located external to the building. This clause will not be applicable.	N/A
4.3: Class 2 and 3 buildings: Concession	N/A	N/A	N/A
Section D: Access and Egress			
Part D1 – Provision for Escape			
D1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
D1.1: Application of Part	The Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or a Class 4 part of a building.	Noted	Noted
D1.2: Number of exits required	(a) **All buildings –** Every building must have at least one exit from each storey. (b) **Class 2 to 8 buildings –** In addition to any horizontal exit, not less than 2 exits must be provided from the following; (i) Each storey if the building has an effective height of more than 25m. (ii) A Class 2 or 3 building subject to C1.5.	The ground floor and first floor are provided with at least two (2) exits as required. <u>Ground Floor</u> The southern portion of the building contains a swinging door from a non-fire-isolated stair directly into 'open space' via the external carpark.	**Complies**

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	(c) **Class 9 buildings –** In addition to any horizontal exit, not less than 2 exits must be provided from the following: (i) Each storey if the building has a rise in storeys of more than 6 or an effective height of more than 25m. (ii) Each storey in a Class 9b building used as an early childhood centre. (iii) Any storey or mezzanine that accommodates more than 50 persons, calculated under D1.13. (d) **Access to exits** – Without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to – (i) An exit; or (ii) At least 2 exits if 2 or more exits are required.	The eastern portion of the development is provided with an exit via a non-fire-isolated stair and associated swinging door leading to open space via Acacia Lane. <u>First Floor</u> The first floor of the development contains three (3) separate exit points identified. Two (2) exits are available to the western portion via the first risers of the non-fire-isolated stairs discharging to ground floor. A third exit is available via the top riser of the non-fire-isolated which discharges directly to the external parts of the building which leads to a gate to Acacia Lane.	
D1.3: When fire-isolated stairways and ramps are required	(a) Every stairway or ramp serving as a required exit must be fire-isolated unless – (i) Except in a Class 9c building, it connects, passes through or passes by not more than 2 consecutive storeys.	The building is two (2) storeys and will be permitted to contain stairways or ramps which are non-fire isolated.	N/A
D1.4: Exit travel distances	(a) <u>Class 9 buildings –</u> Subject to (d), (e) and (f) – (i) no point on a floor must be more than 20m from an exit or from a point at which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40m.	<u>Ground Floor</u> Based on scaled measurements of the floor plans, portions of the ground floor are located more than 20m to a single exit, however where measured to a point of choice, an exit is readily available where travel of up to 40m is permitted. <u>First floor</u> The first floor is provided with exits distributed to the east and west elevations of the building. Based on scaled	**Complies**

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		measurements, an exit is available requiring travel of up to 20m as permitted, and up to 40m from a point of choice as required.	
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) 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 portions of the ground and first floor requiring alternative means of egress are located at opposite ends of the building to the east and west elevations. Based on scaled measurements these alternate exits are located not more than 60m apart for a Class 9b development and will readily comply.	**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	Not enough details of heights shown based on available drawings to confirm compliant height clearance is provided for egress in accordance with this clause. All exits or paths of travel to exits contain sufficient dimensions to meet the requirements to provide minimum 1m width throughout for egress except at doorways where a door width of 750mm or more can be readily provided to meet compliance. Further details to be provided at CC stage to confirm no service installations or reductions in dimensions will be incorporated to exits and paths of travel to exits in	CRA – Refer Annexure F

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		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.	accordance with this clause, compliance is assumed to be readily achievable.	
D1.7:	Travel via fire-isolated exits	> N/A	Fire-isolated exits are not required in the building.	N/A
D1.8:	External stairways or ramps in lieu of fire-isolated exits	(i) N/A	There are no fire-isolated exits where this clause will apply.	N/A
D1.9:	Travel by non-fire-isolated stairways or ramps	> A non-fire-isolated stairway serving as a required *exit* must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. > In a Class 9 building, the distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or non-fire-isolated ramp must not exceed 80m. > In a Class 9b building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than – (i) 20 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or (ii) 40 m from one of 2 such doorways or passageways if travel to each of them from the	All non-fire-isolated stairs proposed to the building provide a continuous means of travel by independent flights and landings from the storey served. All non-fire-isolated stairs will discharge to ground floor at a point where a road or open space is readily available less than 20m as per BCA Clause D1.9 or directly open space and will comply.	**Complies**

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	non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.		
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. min width of required *exit* if greater. If an *exit* discharges to open space that is at a different level that the public road to which it is connected, the path of travel to the road must be by a ramp or other incline not steeper than 1:8, or a BCA compliant stairway. The discharge points of alternative *exits* must be as far apart as practical.	The discharge point from the swinging door leading to the shared zone in the external carpark is to be provided with a bollard to prevent vehicles from blocking the exit. The eastern exits discharging into Acacia Lane will require suitable protection to ensure the exit is not to be obstructed due to the possible vehicular obstruction. Further details to be provided at CC stage where compliance is readily achievable. Note: The discharge points to Acacia Lane are shown to be at the allotment boundary and sufficient space is not available to implement barriers in accordance with this clause. Further design development to address the discharge point to confirm compliance.	CRA – Refer Annexure F
D1.11: Horizontal exits	*Horizontal exits* must not comprise more than half of the required *exits* from any part of a storey divided by a *fire wall*.	N/A	N/A
D1.12: Non-required stairways, ramps or escalators	N/A	N/A	N/A
D1.13: Number of persons accommodated	Informational– The number of persons accommodated in a storey, room or mezzanine must be determined within consideration to the purpose for which it is used and the layout of the floor area by– (a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person	**Ground Floor – Children** The number of occupants to the early childhood centre part can accommodate up to 72 Children.. **First Floor – Children** The number of children to the early childhood centre can accommodate up to 40 – Children.	Noted

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	listed in BCA Table D1.13 according to the use of that part, excluding spaces set aside for— (i) lifts, stairways, ramps and escalators, corridors, hallways, lobbies and the like; and (ii) service ducts and the like, sanitary compartments or other ancillary uses; or (b) reference to the seating capacity in an assembly building or room; or (c) any other suitable means of assessing its capacity. Based on floor area and Table D1.13, the population numbers are as follows:	**Ground / First Floor – Employees** The number of staff that can be accommodated is up to 20 Persons. Note: The number of occupants that is expected to be accommodated are constrained by the number of sanitary facilities, to be further assessed if more are to be provided to serve more children / staff to the building. Staff Class 9b (generally) The sanitary facilities will be more than enough to provide sufficient facilities for the intended staff numbers, see F2.3.	
D1.14: Measurement of distances	Informational – The nearest part of an *exit* means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a *horizontal exit*, the nearest part of the doorway.	Noted	Noted
D1.15: Method of Measurement	Informational	Noted	Noted

Section C: Fire Resistance			
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	N/A	N/A	N/A
D1.17: Access to lift pits	Access to lift pits must – (a) where the pit depth is not more than 3m, be through the lowest landing doors.	Access to the lift pit is assumed to be through the bottom landing doors, compliance is readily achievable.	CRA – Refer Annexure F
D1.18: Egress from early childhood centres	(a) Every part of a Class 9b early childhood centre must be wholly within a storey that provides direct egress to a road or open space. (b) The requirements of (a) do not apply in a building with a rise in storeys of not more than 2, where the Class 9b early childhood centre is the only use in that building.	The subject development has been assessed to solely be a Class 9b early childhood centre and does not contain a rise in storeys of more than two (2).	Complies
Part D2 – Construction of Exits			
D2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
D2.1: Application of Part	Informational	Noted	Noted
D2.2: Fire-isolated stairways and ramps	N/A	N/A	N/A
D2.3: Non-fire-isolated stairways and ramps	N/A	N/A	N/A
D2.4: Separation of rising and descending stair flights	N/A	N/A	N/A

Section C: Fire Resistance				
D2.5:	Open access ramps and balconies	N/A	N/A	N/A
D2.6:	Smoke lobbies	N/A	N/A	N/A
D2.7:	Installations in exits and paths of travel	> Access to service shafts and services other than to fire-fighting or detection equipment must not be provided from a fire-isolated stairway or fire-isolated passageway. > Gas or other fuel services must not be installed in a required *exit*. > Any electricity meters, distribution boards or ducts, or telecommunications distribution boards or equipment installed in corridors/hallways/lobbies or the like must be enclosed with *non-combustible* construction or a fire protective covering with doorways suitably sealed against smoke spread. > Electrical wiring may be installed in a fire-isolated *exit* if the wiring is associated with: ○ a lighting, detection, or pressurization system serving the *exit*; or ○ a security, surveillance or management system serving the *exit*; or ○ an intercommunication system or an audible or visual alarm system in accordance with D2.22; or ○ the monitoring of hydrant or sprinkler isolating valves.	Not enough information available for a DA stage assessment for installations in exits and paths of travel, to be further assessed with design development at CC stage where compliance is readily achievable.	CRA – Refer Annexure F
D2.8:	Enclosure of space under stairs and ramps	The space under the fire-isolated stairways within the shaft must not be enclosed to form a cupboard or similar enclosed space.	Based on available details, there appears to be an enclosed space underneath the non-fire-isolated ramp serving the plant room / staff room, further details to be	CRA – Refer Annexure F

Section C: Fire Resistance			
	The space below a required non fire-isolated stairway (including an external stairway) or non-fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless the enclosing walls and ceilings have an FRL of not less than 60/60/60 and the doorway is fitted with a self-closing –/60/30 fire door.	shown to confirm further details if space and fire-rating as per D2.8 if required. Where enclosed to form a cupboard or other space, the enclosing walls and ceilings are to have an FRL of not less than FRL60/60/60 and fire door with FRI--/60/30. Subject to design development at CC stage, compliance is assumed to be readily achievable.	
D2.9: Width of stairways and ramps	Informational– A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2 m.	Noted	Noted
D2.10: Pedestrian ramps	> N/A	There are no ramps serving as a required exit in this building, this clause is not applicable.	N/A
D2.11: Fire-isolated passageways	N/A	N/A	N/A
D2.12: Roof as open space	N/A	N/A	N/A
D2.13: Goings and risers	Stairways must comply with the following: > Stairways must have not more than 18 and not less than 2 risers in each flight; > Goings must be between 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;	Based on available floor details, the building development contains stairways serving the ground and first level throughout. However, there is not enough information available to confirm construction of the proposed stairs including the goings and risers and details of slip-resistance to confirm compliance with BCA Clause D2.13. Further information to be provided with typical 1:50 stair details at CC stage to confirm compliance in accordance with this clause.	CRA – Refer Annexure F

Section C: Fire Resistance			
	> Risers must be between 115 mm high and 190 mm high; > The slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700; > The goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (R) are considered constant if the variation between– (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm. > Risers must not contain any openings that would permit a 125 mm sphere to pass through. > Each tread must have a non-slip finish or an adequate non-skid strip near the edge of the nosings; > Treads must be of solid construction (not mesh or perforated) if the stairway is more than 10 m high or connects more than 3 storeys. > In a Class 9b building, not more than 36 risers in consecutive flights without a change in direction of at least 30° > **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.		

<table>
<tr><th colspan="4">Section C: Fire Resistance</th></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>
<tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr>
</table>
</td>
<td>All landings are shown to be at least 750mm in length, no details for slip-resistance available for a DA stage assessment.

To be further assessed with design development at CC stage where compliance is readily achievable.</td>
<td>CRA – Refer Annexure F</td>
</tr>
<tr>
<td>D2.15: Thresholds</td>
<td>The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless–

(a) in a building required to be accessible, the doorway–

(i) opens to a road or open space; and

(ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1:2009; or

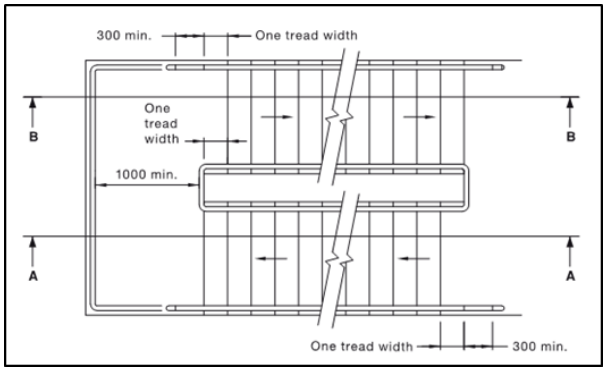
(b) in other cases–

(i) the doorway opens to a road or open space, external stair landing or external balcony; and</td>
<td>No details of thresholds are available for a DA stage assessment. Based on available details, the subject development appears to be level where thresholds are not likely to be incorporated departing any requirements of this clause.

However, subject to further design development incorporating typical thresholds details where applicable to confirm compliance at CC stage.</td>
<td>CRA – Refer Annexure F</td>
</tr>
</table>

Section C: Fire Resistance			
	(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.		
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– o a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and o the opening between rails must not be more than 460 mm <u>Balustrade openings – other than fire-isolated stairs</u> > A 125 mm sphere must not be able to pass through any opening and for stairways, the 125 mm is measured above the nosing line of the stair treads. <u>Climbability – other than fire-isolated stairs</u> For floors more than 4m above the surface beneath, the balustrade must not incorporate any horizontal or near	There are insufficient details of barriers or balustrades shown to the proposed stairways or ramps in accordance with this clause for a DA stage assessment. Typical 1:50 details of barriers to be provided for further assessment in accordance with this clause at CC stage.	CRA – Refer Annexure F

Section C: Fire Resistance			
	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. <u>Clause 12 of AS 1428.1:2009</u> A required *exit* (fire isolated or non-fire isolated) serving an area required to be accessible must be fitted with handrails in accordance with Clause 12 of 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.	Based upon available plans, there are insufficient handrail details to the proposed stairs and ramps, further design development is required to confirm all stairs and ramps are provided with handrails in accordance with this clause and BCA Clause D3.3. For a Development Application there is sufficient space available to incorporate compliant handrails subject to design development at Construction Certificate stage. Further design development to provide 1:50 typical handrail detail of stairs and ramps for further assessment, compliance is assumed to be readily achievable. Note: BCA2022 requirements are to be considered to be incorporated to the handrails provided to the stairways and ramps of the development.	CRA – Refer Annexure F

Section C: Fire Resistance			
	 Figure 28 in AS 1428.1:2009		
D2.18: Fixed platforms, walkways stairways and ladders	Plant areas may be accessed via stairs and ladders compliant with AS 1657:2018.	N/A	N/A
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.	No details for door operation available for a DA stage assessment. To be further assessed as part of an updated architectural set at CC stage where compliance is assumed to be readily achieved.	CRA – Refer Annexure F

Section C: Fire Resistance			
D2.20: Swinging doors	Swinging doors in a required *exit* must not encroach– (i) at any part of its swing by more than 500 mm on the required 1m width of the *exit* and (ii) when fully open, by more than 100 mm on the required 1m *exit* width; and the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door. A swinging door in a required *exit* must swing in the direction of egress unless– > it serves a building or part with a floor area not more than 200 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).	All swinging doors used in a required exit are to swing in the direction of egress as required and are not to encroach more than permitted in accordance with BCA Clause D2.20. No details of door handles or attachments are available for a DA stage assessment however it is assumed compliance can be readily achieved.	CRA – Refer Annexure F
D2.21: Operation of latch	All doors in a required *exit* or forming part of a required *exit* AND doors in a path of travel to a required *exit* must be readily openable without a key from the side that faces a person seeking egress, by– (iii) a single hand downward action or pushing action on a single device which is located between 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	No details for latch operation available for a DA stage assessment. All doors in a required exit, forming part of a required exit and doors in a path of travel to a required exit are to be operatable in accordance with BCA Clause D2.21. To be further assessed with design development at CC stage where compliance is assumed to be readily achievable.	CRA – Refer Annexure F

Section C: Fire Resistance			
	grip section of the handle of not less than 35mm and not more than 45mm; or (iv) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor. (v) where the latch operation device referred to in (ii) is not located on the door leaf itself— (A) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located— (aa) not less than 500 mm from an internal corner; and (bb) for a hinged door, between 1 m and 2 m from the door leaf in any position; and (cc) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position. (B) braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. The above requirements do not apply to a door that – (i) with a floor area not more than 200m2; or (ii) 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.		

Section C: Fire Resistance			
D2.22: Re-entry from fire-isolated exits	N/A	N/A	N/A
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.	There are no fire or smoke doors proposed.	N/A
D2.24: Protection of openable windows	(a) A window opening must be provided with protection, if the floor below the window is 2m or more above the surface beneath in a Class 9b early childhood centre. (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–	All windows on the first floor are to be protected in accordance with this clause where the floor below is 2m or more in accordance with this clause. Not enough details to confirm the form of protection to be provided to any openable windows at first floor. Subject to further details in updated architectural set and window schedule at CC stage to confirm compliance in accordance with this clause where readily achievable.	CRA – Refer Annexure F

Section C: Fire Resistance			
	(aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (c) A barrier with a height not less than 865 mm above the floor is required to an openable window– (i) in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and (ii) where the floor below the window is 4m or more above the surface beneath if the window is not covered by (a). (d) A barrier covered by (c) except for (e) must not– (i) permit a 125 mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. (e) A barrier required by (c) to an openable window in— (i) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and **Note:** when considering the preferred option to comply with this clause consideration will need to be given to natural ventilation required under Clause F4.6.		

Section C: Fire Resistance			
D2.25: Timber stairways: concession	N/A	N/A	N/A
D3.0: Deemed-to-Satisfy Provisions	Noted	To be assessed in a separate Access Report by Access Consultant	Noted

Section E: Services and Equipment			
Part E1 – Fire Fighting Equipment			
E1.0: Deemed-to-Satisfy Provisions	Informational	Noted	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. > Hydrant booster assembly location. The booster location must comply with the following: o be within 8m of a hardstand for fire brigade appliance; o be within sight of the main entry; > Assuming it is attached to the building, be separated from the building by construction achieving FRL 90/90/90 for 2m either side of and 3m above the upper hose connections > Hydrant pump room location (if a pumpset is required). An internal pump room must have a door opening to a road or open space or egress to open space via a fire-isolated *exit*;	As the total floor area of the building is greater than 500m^2, a fire hydrant system complying with AS2419.1-2005 is to be provided to serve the building. Subject to an accredited practitioner (Hydraulic Engineer) certifying design and suitability at CC stage to confirm compliance, where assumed to be readily achievable.	CRA – Refer Annexure F

Section E: Services and Equipment			
	> 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. Note: Consideration should be given to the location of Electrical Substations on adjoining sites in regards to proximity to Fire Hydrant Boosters being within 10.0m		
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 Classes 2, 3, 4, 5, 8 and 9c). 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— (ii) doorways in walls referred to in C2.5(a)(v) in a Class 9a building and C2.5(b)(iv) in a Class 9c building, separating ancillary use areas of high potential fire hazard; and (iii) doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (iv) doorway openings to shafts referred to in C3.13.	The building is deemed one fire compartment and will require fire hose reels to be provided in accordance with this clause. No details available for a DA stage assessment to confirm compliance for design, location and system coverage of fire hose reels to the Class 9b parts of the building. Subject to further design development at CC stage, compliance is readily achievable.	CRA – Refer Annexure F

Section E: Services and Equipment			
E1.5: Sprinklers	The building must be provided with a sprinkler system complying with Table E1.5 and Specification E1.5 installed throughout.	The building has a rise in storeys of (2) This building will not require a fire sprinkler system.	N/A
E1.6: Portable fire extinguishers	Portable fire extinguishers must be provided in accordance with clause E1.6 & Table E1.6 of the BCA and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444:2001.	No details of portable fire extinguishers shown at this stage. Further details to be provided at CC stage to confirm portable fire extinguisher type and distribution are in accordance with this clause, compliance is readily achievable.	CRA – Refer Annexure F
E1.8: Fire control centres	N/A	This is not applicable to this building.	N/A
E1.9: Fire precautions during construction	Informational– > During construction, not less than one portable fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required / temporary *exit*; 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.	During construction, not less than one portable fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required / temporary exit.	Noted
E1.10: Provision for special hazards	Suitable additional provisions must be made if special problems of firefighting could arise because of the nature or quantity of stored materials or the location of the building in relation to a water supply. If any mechanical car stackers are proposed – Assessment to be made against NSWFR Guidelines for Car stackers that will need to form	There are no special hazards to be present in this building, therefore this clause will not be applicable.	N/A

Section E: Services and Equipment			
	part of a Performance Solution Assessment Process		
Part E2 – Smoke Hazard Management			
E2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E2.1: Application of Part	Informational	Noted	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— (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	<u>Ducted Mechanical Ventilation</u> Where ducted mechanical ventilation system is proposed it will be necessary due to the class 9b use to activate an automatic shutdown system in accordance with the additional provisions under NSW Table E2.2b. <u>Class 9b Use</u> Due to the class 9b assembly building use in accordance with NSW Table E2.2b it will be necessary for a smoke detection and alarm system to be installed throughout due to the floor area of the fire compartment being in excess of 2000m2.	Noted

Section E: Services and Equipment			
	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*. <u>Auto shutdown for Class 9b</u> > (NSW Table E2.2b) - Any system in a Class 9b assembly building which does not form part of a smoke hazard management system, other than: o non-ducted individual room units with a capacity of not more than 1000 L/s; or o miscellaneous exhaust are systems installed as per Section 5 and 6 of AS 1668.1:2015.		
E2.3: Provisions for special hazards	N/A	N/A	N/A
Specification E2.2a – Smoke Detection and Alarm System			

Section E: Services and Equipment				
1.	Scope	Informational	Noted	Noted
2.	Type of system	A required automatic smoke detection and alarm system must be provided in accordance with the following: (a) Class 7 or 9b buildings— a smoke detection system complying with Clause 4.	Due to the connections formed between the lower ground and ground floor, the subject development is deemed a single fire compartment. However, due to having a total floor area of more than $2000m^2$ and the requirement to have automatic shutdown as per NSW Table E2.2b, and where provided, the mechanical ventilation system installed to the development, the building is required to have a smoke detection and alarm system installed in accordance with BCA Clause E2.2.	CRA – Refer Annexure F
3.	Smoke alarm system	(A) N/A	N/A	N/A
4.	Smoke detection system	(b) All Class 2 - 9 buildings— (i) A smoke detection system must— (A) subject to (b) and (c), comply with AS 1670.1; and (B) activate a building occupant warning system in accordance with Clause 7. (ii) In kitchens and other areas where the use of the area is likely to result in smoke detectors causing spurious signals— (A) any other detector deemed suitable in accordance with AS 1670.1 may be installed provided that smoke detectors are installed elsewhere in the sole-occupancy unit in accordance with the requirements for alarms in Clause 3(b)(i) and Clause 3(b)(ii); or	The subject development is to be provided with a smoke detection system complying with AS1670.1. Based on available plans, a smoke detection system has not been shown to be installed and will require to be incorporated in accordance with Clause 4 of Specification E2.2a Further details to be assessed at CC stage.	CRA – Refer Annexure F

Section E: Services and Equipment				
		(B) an alarm acknowledgement facility may be installed, except where the kitchen or other area is in a building protected with a sprinkler system complying with Specification E1.5 (other than a FPAA101D or FPAA101H system), the detectors need not be installed in the kitchen or other areas likely to result in spurious signals.		
5.	Combined smoke alarm and smoke detection system	N/A	N/A	N/A
6.	Smoke detection for smoke control system	(c) Smoke detectors required to activate air pressurisation systems for fire-isolated exits and zone pressurisation systems must— (i) be installed in accordance with AS 1670.1; and (ii) have additional smoke detectors installed adjacent to each bank of lift landing doors set back horizontally from the door openings by a distance of not more than 3 m. (d) Smoke detectors required to activate— (i) automatic shutdown of air-handling systems in accordance with Table E2.2b; or (ii) a smoke exhaust system in accordance with Specification E2.2b, must— (iii) be spaced—	The subject development contains Class 9b Early Childhood Centre parts which require additional provisions in accordance with NSW Table E2.2b. In order to activate automatic shutdown of any air-handling systems and miscellaneous exhaust air systems installed as per Clause 5 and 6 of AS1668.1, the building is to be provided with a smoke detection for smoke control system complying with Clause 6 of Specification E2.2a. No details are shown at this stage to confirm compliance, an updated architectural set is to be provided incorporating further details of a smoke detection for smoke control system in accordance with this clause.	CRA – Refer Annexure F

Section E: Services and Equipment			
	(A) not more than 20 m apart and not more than 10 m from any wall, bulkhead or smoke curtain; and (B) in enclosed malls and walkways in a Class 6 building not more than 15 m apart and not more than 7.5 m from any wall, bulkhead or curtain; and (iv) have a sensitivity— (A) in accordance with AS 1670.1 in areas other than a multi- storey walkway and mall in a Class 6 building; and (B) not exceeding 0.5% smoke obscuration per metre with compensation for external airborne contamination as necessary, in a multi- storey walkway and mall in a Class 6 building. (e) Smoke detectors provided to activate a smoke control system must— (i) (A) form part of a building fire or smoke detection system complying with AS 1670.1; or (B) be a separate dedicated system incorporating control and indicating equipment complying with AS 1670.1; and (ii) activate a building occupant warning system complying with Clause 7, except that smoke detectors provided solely to initiate automatic shutdown of air-		

Section E: Services and Equipment				
		handling systems in accordance with (b)(i) need not activate a building occupant warning system.		
7.	Building occupant warning system	Subject to E4.9, a building occupant warning system provided as part of a smoke hazard management system must comply with clause 3.22 of AS 1670.1 to sound through all occupied areas except— (f) in a Class 2 and 3 building or Class 4 part of a building provided with a smoke alarm system in accordance with Clause 3(b)(iii)— (i) the sound pressure level need not be measured within a sole-occupancy unit if a level of not less than 85 dB(A) is provided at the door providing access to the sole-occupancy unit; and (ii) the inbuilt sounders of the smoke alarms may be used to wholly or partially meet the requirements;	The building is to be provided with a Clause 4 smoke detection system in accordance with Specification E2.2a which is to activate a building occupant warning system in accordance with this clause. Further assessment to be made at CC stage with design development where compliance can be achieved.	CRA – Refer Annexure F
8.	System Monitoring	N/A	N/A	N/A
Part E3 – Lift Installations				
E3.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E3.1:	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1	No details of lift to be installed to the building available at this stage. Further details to be provided at CC stage to confirm proposed lift will readily comply in accordance with this clause.	CRA – Refer Annexure F
E3.2:	Stretcher facility in lifts	N/A	N/A	N/A

Section E: Services and Equipment			
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.	No details of signage to the proposed lift available for a DA stage assessment. Further information to be provided at CC stage as part of typical signage details where compliance is readily achievable.	CRA – Refer Annexure F
E3.4: Emergency lifts	N/A	N/A	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.	Based on available details, lift landings can readily comply in accordance with this clause.	CRA – Refer Annexure F
E3.6: Passenger lifts	**To be assessed in separate Access Report.**	Noted	Noted
E3.7: Fire service controls	N/A	N/A	N/A
E3.8: Aged care buildings	N/A	N/A	N/A
E3.9: Fire service recall switch	N/A	N/A	N/A
E3.10: Lift car service drive control switch	N/A	N/A	N/A
Specification E3.1 – Lift Installations			
1. Scope	Informational	To be confirmed at CC stage.	CRA – Refer Annexure F
Part E4 – Visibility In An Emergency, Exit Signs And Warning Systems			
E4.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted

Section E: Services and Equipment			
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.	No details of emergency lighting system provided for a DA stage assessment. Further details to be provided at CC stage to confirm emergency lighting system is provided in accordance with BCA Clause E4.2 and AS/NZS 2293.1-2018 where compliance is readily achievable.	CRA – Refer Annexure F
E4.3: Measurement of distance	Informational	Noted	Noted
E4.4: Design and operation of emergency lighting	The emergency lighting system must comply with AS/NZS 2293.1:2018.	No details of emergency lighting available for a DA stage assessment. Emergency lighting system to be provided to the building shall be in accordance with AS/NZS 2293.1-2018 where compliance is readily achievable.	CRA – Refer Annexure F
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.	No details of exit signage provided for a DA stage assessment, further details to be provided at CC stage where compliance for exit signage is readily achievable in accordance with this clause.	CRA – Refer Annexure F
E4.6: Direction signs	Where an *exit* is not readily apparent, directional signage is to be installed indicating the direction of egress.	No details of direction signage provided for a DA stage assessment, further details to be provided at CC stage where compliance for direction signage is readily achievable in accordance with this clause.	CRA – Refer Annexure F
E4.7: Class 2 and 3 buildings and Class 4 Parts: Exemptions	N/A	N/A	N/A
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.	No details of exit signage provided at this stage. Ensure exit signage to be provided is in accordance with AS/NZS2293.1-2018 where compliance is readily achievable.	CRA – Refer Annexure F

Section E: Services and Equipment			
E4.9: Emergency warning and intercom systems	An Emergency warning and intercom system complying where applicable with AS 1670.4:2018 must be installed within the building.	N/A	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.	No details of external weatherproofing methods provided at this stage. Further details to be provided at CC stage to confirm method of prevention of water that could cause; a) unhealthy or dangerous conditions, or lost of amenity for occupants; and b) under dampness or deterioration of building elements. It is recommended to engage a waterproofing consultant and/or façade engineer to certify at CC stage.	PS – Refer to Part 3.3 of Report
F1.1: Stormwater drainage	Stormwater drainage to comply with AS/NZS 3500.3:2018.	No details of the stormwater drainage have been provided for a DA stage assessment. Further details to be provided at CC stage where compliance is readily achievable. Hydraulic Engineer / Waterproofing Consultant to confirm compliance at CC stage.	CRA – Refer Annexure F
F1.4: External above ground membranes	Waterproofing membranes for external above ground use to comply with AS 4654 Parts 1 and 2:2012.	No details of external waterproofing membranes in accordance with this clause to the external perimeter of the building and in accordance with F1.0. Further details to be provided at CC stage.	FI – Refer to Part 3.4 of Report

Section F: Health and Amenity				
			It is recommended to engage a waterproofing consultant to certify at CC stage.	
F1.5:	Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	No details of construction or material for proposed roof covering however compliance is readily achievable subject to design development at CC stage to confirm roof coverings in accordance with BCA Clause F1.5 is readily provided.	CRA – Refer Annexure F
F1.6:	Sarking	*Sarking-type materials* used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2:2017.	No details of sarking-type materials provided for a DA stage assessment. Further details to be provided at CC stage where compliance is readily achievable.	CRA – Refer Annexure F
F1.7:	Water proofing of wet areas in buildings	Wet areas must be constructed in accordance with AS 3740:2010 and F1.7 of the BCA.	No details of type of waterproofing to be provided to the wet areas in the building for a DA stage assessment. It is assumed compliance is readily achievable subject to design development at CC stage.	CRA – Refer Annexure F
F1.9:	Damp-proofing	Moisture is to be prevented from reaching the walls above a damp-proof course, and the underside of the suspended floors.	No details available at this stage to confirm compliance. Further details to be provided at CC stage where compliance is readily achievable. It is recommended to engage a waterproofing consultant to certify at CC stage.	CRA – Refer Annexure F
F1.10:	Damp-proofing of floors on the ground	If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870:2011 (N/A to areas that do not require weatherproofing – refer specific clause exemptions).	No details available at this stage to confirm compliance. Further details to be provided at CC stage where compliance is readily achievable. It is recommended to engage a waterproofing consultant to certify at CC stage.	CRA – Refer Annexure F

Section F: Health and Amenity			
F1.11: Provision of floor wastes	N/A	N/A	N/A
F1.12: Sub-floor ventilation	N/A	N/A	N/A
F1.13: Glazed Assemblies	Glazed assemblies are to comply with AS 2047:2014 and AS 1288:2006.	No details of glazing to be provided to the building to confirm compliance in accordance with this clause. Subject to design development at CC stage, compliance for glazed assemblies where provided will readily comply in accordance with this clause.	CRA – Refer Annexure F
Part F2 – Sanitary and Other Facilities			
F2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F2.1: Facilities in residential buildings (including Table F2.1)	N/A	N/A	N/A
F2.2: Calculation of number of occupants and facilities	Informational – (a) The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means (b) Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females (c) In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility required for people with a disability may be counted once for each sex	Noted	Noted

<table>
<tr><th colspan="4">Section F: Health and Amenity</th></tr>
<tr><td></td><td>(d) For the purpose of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels</td><td></td><td></td></tr>
<tr><td>F2.3: Facilities in Class 3 to 9 buildings (including Table F2.3)</td><td>(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) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females.
(e) A class 9b early childhood centre must be provided with –
(i) a kitchen or food preparation area with a kitchen sink, separate hand washing facilities, space for a refrigerator and space for cooking facilities, with –
(A) the facilities protected by a door or gate with child proof latches to prevent unsupervised access to the facilities by children younger than 5 years old; and
(B) the ability to facilitate supervision of children from the facilities if the early</td><td>The subject Class 9b early childhood centre contains sanitary facilities to serve the children and staff of the development. The architectural plans indicate the following to be proposed;
<table><tr><td>Staff</td><td>WC</td><td>Urinals</td><td>WB</td></tr><tr><td>Male</td><td>1 (x1 Acc counted here)</td><td>1</td><td>2 (x2 Acc counted here)</td></tr><tr><td>Female</td><td>2 (x2 Acc counted here)</td><td>N/A</td><td>2 (x2 Acc counted here)</td></tr></table>
Based on the provided sanitary compartments up to 20 staff can be served, supplementary compartments are also provided to the Staff room on first floor in excess of the expected number of staff in this development.
<table><tr><td>Children</td><td>WC</td><td>Urinals</td><td>WB</td></tr><tr><td>M/F</td><td>9</td><td>N/A</td><td>9</td></tr></table>
Based on the provided sanitary facilities for children, up to 135 children can be served which is in excess of the proposed number occupying the building as per D1.13, which was up to 112.
Further details of construction of children junior pans to be assessed at CC stage to confirm washbasins contain a rim height not exceeding 600mm.
The facilities proposed to the building to serve Class 9b parts have been summarised below to each separate floor;</td><td>CRA – Refer Annexure F
CRA – Refer Annexure F
CRA – Refer Annexure</td></tr>
</table>

Section F: Health and Amenity			
	childhood centre accommodates children younger than 2 years old; and (ii) one bath, shower or shower-bath; and (iii) if the centre accommodates children younger than 3 years old – (A) a laundry facility comprising a washtub and space in the same room for a washing machine; and (B) a bench type baby bath, which is within 1 m of the nappy change bench; and (C) a nappy changing bench which – (aa) is within 1 m of separate adult hand washing facilities and bench type baby bath; and (bb) must be not less than 0.9 m^2 in area and a height of not less than 850 mm, but not more than 900 mm above the finished floor level; and (cc) must have a space not less than 800 mm height, 500 mm wide and 800 mm deep for the storage of steps; and (dd) is positioned to permit a staff member changing a nappy to have visibility of the play area at all times. (f) Not less than one washbasin must be provided where closet pans or urinals are provided.	**Ground floor;** Class 9b (Children) required to serve: 72 Junior Pans required: 6 Junior Pans provided: 6 Washbasins required: 5 Washbasins provided: 5 **First Floor;** Class 9b (Children) required to serve: 40 Junior Pans required: 3 Junior Pans provided: 3 Washbasins required: 3 Washbasins provided: 3 The provided sanitary facilities to serve the staff of the Early Childhood Centre at ground and first floor are sufficient in numbers. Based upon available details, the building is proposed to accommodate children younger than 3 years old, however the kitchen area does not contain provisions to have visibility of the play area of the 0-2 indoor areas and will require to be addressed by a performance solution. For a Class 9b early childhood centre building, where children less than 2 years are to be accommodated, a nappy changing bench is to be designed and installed as per F2.3, floor plans indicate glazed openings are provided for supervision which is subject to certifier approval at CC stage to confirm proposed orientation is acceptable.	Complies PS – Refer to Part 3.3 CRA – Refer Annexure

Section F: Health and Amenity				
F2.4:	Accessible sanitary facilities (including Table F2.4)	**To be assessed in a separate Access Report.**	Noted	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) to a height of not less than 1.5 m above the floor if primary school children are the principal users; or (iii) 1.8 m above the floor in all other cases. (b) The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F2.5, between the closet pan within the sanitary compartment and the doorway. <u>Early childhood centre</u> In an early childhood centre, facilities for use by children must have each sanitary compartment screened by a partition which, except for the doorway, is opaque for a height of at least 900 mm but not more than 1200 mm above the floor level.	Based on available details, the construction of sanitary compartments for the early childhood centre parts cannot be confirmed if provisions for partitions have been incorporated as required, further details for dimensions and opacity in accordance with F2.5 to be confirmed at CC stage. Further details for sanitary compartments to the staff and employees of the building to be provided at CC stage where compliance is readily achievable.	CRA – Refer Annexure F

Section F: Health and Amenity			
F2.6: Interpretation: urinals and washbasins	Informational– (a) A urinal may be— (i) an individual stall or wall-hung urinal; or (ii) each 600 mm length of a continuous urinal trough; or (iii) a closet pan used in place of a urinal. (b) A washbasin may be— (i) an individual basin; or (ii) a part of a hand washing trough served by a single water tap.	Noted	Noted
F2.8: Waste Management	N/A	N/A	N/A
F2.9: Accessible adult change facilities	N/A	N/A	N/A
Part F3 – Room Heights			
F3.0: Deemed-to-Satisfy Provisions	Informational	Noted	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 9b building— (i) a school classroom or other assembly building or part that accommodates not more than 100 persons — 2.4 m; and (ii) a theatre, public hall or other assembly building or part that accommodates more than 100 persons — 2.7 m; and	Based on available details, the building can readily provide sufficient height throughout all rooms and other spaces as per this clause. Further details to be provided at CC stage to confirm all areas pertaining to the 9b building are not less than required as per F3.1.	CRA – Refer Annexure F

Section F: Health and Amenity			
	(iii) a corridor— (A) that serves an assembly building or part that accommodates not more than 100 persons — 2.4 m; or (B) that serves an assembly building or part that accommodates more than 100 persons — 2.7 m; and (iv) the number of persons accommodated must be calculated according to D1.13		
Part F4 – Light and Ventilation			
F4.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F4.1: Provision of natural light	Natural light must be provided to all playrooms or the like for the use of children in an early childhood centre.	Natural light is required to be provided to all playrooms or the like for the children in the early childhood centre, see further discussion in BCA Clause F4.2.	Noted
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	The ground floor indoor play areas are provided with window sills located at 500mm above the floor and are sufficient in size to provide light transmitting area of more than 10% to the floor area of the 0-2 indoor play area served. The remaining children's play areas face an open corridor throughout and further details are to be provided at CC stage to confirm the openings provided to these children's rooms will be sufficient in size and location to meet the provisions of this clause. The first floor 3-6 indoor play areas are provided with windows where not less than 50% are located 500mm below the floor level to each children room served and will be sufficient in size to ensure an aggregate light	CRA – Refer Annexure F

Section F: Health and Amenity			
	(iii) a proportional combination of windows and roof lights required by (i) and (ii). (b) In a Class 9b early childhood centre, the sills of 50% of windows in children's rooms must be located not more than 500 mm above the floor level. (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 – (d) 1m; and (e) 50% of the square root of the exterior height of the wall in which the window is located, measured from its sill.	transmitting area of not less than 10% of each indoor play area is served as required.	
F4.3: Natural light borrowed from adjoining room	N/A	N/A	N/A
F4.4: Artificial Lighting	Lighting to all areas is to comply with AS/NZS 1680.0:2009.	No details of artificial lighting to be provided to the building for a DA stage assessment. All artificial lighting incorporated to the building shall comply in accordance with AS/NZS 1680:0-2009, compliance is readily achievable.	CRA – Refer Annexure F
F4.5: Ventilation of rooms	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2:2012.	No details of form of ventilation to be relied upon to each room in accordance with this clause. Natural ventilation appears to be readily available to all rooms based on available openings. Further details for openings and ventilation to each room to be provided at CC stage where compliance is readily achievable.	CRA – Refer Annexure F

Section F: Health and Amenity			
F4.6: Natural ventilation	(a) Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened— (i) with an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated; and (ii) open to— (A) a suitably sized court, or space open to the sky; or (B) an open verandah, carport, or the like; or (C) an adjoining room in accordance with F4.7.	Natural ventilation to be available via openings to all habitable rooms, bathroom sanitary compartment, laundry or the like unless provided with mechanical ventilation as per F4.6. Detailed window schedule and other openings providing ventilation to be provided at CC stage where compliance is readily achievable.	CRA – Refer Annexure F
F4.7: Ventilation borrowed from adjoining room	Ventilation may be 'borrowed' from adjoining rooms in some instances in accordance with this clause.	N/A	N/A
F4.8: Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a – > kitchen or pantry > workplace normally occupied by more than one person.	All sanitary compartments do not open into areas as listed under F4.8 and comply.	Complies
F4.9: Airlocks	If sanitary compartments are prohibited from opening directly to another room: > access must be by an airlock, hallway or other room with a floor area of not less than 1.1m2 and fitted with self-closing doors at all access doorways; or > the sanitary compartments must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.	N/A	N/A

Section F: Health and Amenity			
F4.11: Carparks	N/A	N/A	N/A
F4.12: Kitchen local exhaust ventilation	Any commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1:2015 and AS 1668.2:2012 where: > any cooking apparatus has: o a total maximum electrical power input exceeding 8 kW; or o a total gas power input exceeding 29 MJ/h; or > the total maximum power input to more than one apparatus exceeds: o 0.5 kW electrical power; or o 1.8 MJ gas, Per m2 of floor area of the room or enclosure.	No details provided with respect to the proposed kitchen room and associated kitchen exhaust hood to confirm compliance, to be further assessed at CC stage.	CRA – Refer Annexure F
Part F5 – Sound Transmission and Insulation			
F5.0: Deemed-to-Satisfy Provisions	N/A	The Deemed-to-Satisfy Provisions of this Part apply to Class 2 and 3 buildings and Class 9c buildings.	N/A
Part F6 – Condensation Management			
F6.0: Deemed-to-satisfy provisions	Informational	The Deemed-to-Satisfy Provisions of this Part apply to a sole-occupancy unit of a Class 2 building and a Class 4 part of a building.	N/A

Section G: Ancillary Provisions
Part G1 – Minor Structures and Components

Section G: Ancillary Provisions			
G1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
Part G6 – Occupiable Outdoor Areas			
G6.1: Application of part	(a) The Deemed-to-Satisfy Provisions of this Part apply to buildings containing an occupiable outdoor area in addition to the other Deemed-to-Satisfy Provisions of the BCA. (b) The Deemed-to-Satisfy Provisions of this Part take precedence where there is a difference to the Deemed-to-Satisfy Provisions of Sections C, D, E, F and G. (c) Except for G6.2, the Deemed-to-Satisfy Provisions of this Part do not apply to – (i) an occupiable outdoor area of a *sole-occupancy unit* in a Class 2 or 3 building, Class 9c building or Class 4 part of a building; or (ii) an occupiable outdoor area with an area less than $10m^2$.	This part will apply to the outdoor areas of the early childhood centre.	Noted
G6.2: Fire hazard properties	(a) Subject to (b), a lining material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element. (b) The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C1.10: (i) *Average specific extinction area.* (ii) Smoke-Developed Index. (iii) Smoke development rate. (iv) *Smoke growth rate index* ($SMOGRA_{RC}$).	Not enough details of lining, materials or assemblies present in the occupiable outdoor area in accordance with this clause. Further details to be provided at CC stage where compliance is readily achievable.	CRA – Refer Annexure F

Section G: Ancillary Provisions			
G6.3: Fire Separation	For the purposes of the Deemed-to-Satisfy Provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an occupiable outdoor area, however a *fire wall* cannot be used to separate an occupiable outdoor area into different *fire compartments*.	As the occupiable outdoor area is provided for the use of the early childhood centre, no fire-separation is required in accordance with C2.7, C2.8 or C2.9.	N/A
G6.4: Provision for escape	For the purposes of the Deemed-to-Satisfy Provisions of Part D1, a reference to a storey or room includes an occupiable outdoor area.	The outdoor area has been included and assessed as part of the DtS provisions of Part D1 and can readily comply subject to further design development at CC stage.	CRA – Refer Annexure F
G6.5: Construction of exits	For the purposes of the Deemed-to-Satisfy Provisions of Part D2, a reference to a storey or room includes an occupiable outdoor area.	The outdoor area has been included and assessed as part of the DtS provisions of Part D2 and can readily comply subject to further design development at CC stage.	CRA – Refer Annexure F
G6.6: Fire fighting equipment	Except for Clause 7(b)(i) of Specification E1.5, for the purposes of the Deemed-to-Satisfy Provisions of Part E1, a reference to a storey includes an occupiable outdoor area.	The outdoor area has been included and assessed as part of the DtS provisions of Part E1 and can readily comply subject to further design development at CC stage.	CRA – Refer Annexure F
G6.7: Lift installations	For the purposes of the Deemed-to-Satisfy Provisions of Part E3, a reference to a storey includes an occupiable outdoor area.	The single lift proposed to the building does not connect to an occupiable outdoor area, this clause is not applicable.	N/A
G6.8: Visibility in an emergency, exit signs and warning systems	For the purposes of the Deemed-to-Satisfy Provisions of Part E4, a reference to a storey includes an occupiable outdoor area.	Not enough details available for a DA stage assessment. Subject to further design details of visibility in an emergency, exit signage and warning systems in accordance with Part E4 to be provided at CC stage where compliance is readily achievable.	CRA – Refer Annexure F
G6.9: Light and ventilation	For the purposes of the Deemed-to-Satisfy Provisions of F4.4, F4.8 and F4.9, a reference to a room includes an occupiable outdoor area.	The outdoor area has been included and assessed as part of the DtS provisions of Parts F4.4, F4.8 and F4.9	CRA – Refer Annexure F

Section G: Ancillary Provisions			
		and can readily comply subject to further design development at CC stage.	
G6.10: Fire orders	For the purposes of the Deemed-to-Satisfy Provisions of G4.9, a reference to a storey includes an occupiable outdoor area.	Not enough information available for a DA stage assessment, subject to further design details at CC stage compliance is readily achievable.	CRA – Refer Annexure F

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

Section J: Energy Efficiency - In a separate report by Section J / Energy Consultant			
Part J0 – Energy Efficiency			
J0.1: Application of Section J	Informational	Noted	Noted

ANNEXURE E DEFINITIONS

Annexure E - Definitions

Average specific extinction area

Average specific extinction area means the average specific extinction area for smoke as determined by AS 5637.1:2015.

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m2) as determined by AS ISO 9239.1:2003.

Designated bushfire prone area

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

Effective height

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

Envelope

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

(a) the exterior of the building; or

(b) a non-conditioned space including—

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

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

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

Exit

Exit means –

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

(i) An internal or external stairway.

(ii) A ramp.

(iii) A fire-isolated passageway.

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

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

Fire compartment

Fire compartment means –

(a) the total space of a building; or

(b) when referred to in—

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

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

Fire-resistance level (FRL)

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

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order.

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

Fire-source feature

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

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

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

Fire wall

Fire wall means a wall with an appropriate resistance to the spread of fire that divides a storey or building into fire compartments.

Flammability index

Flammability Index means the index number as determined by AS 1530.2:1993.

Group number

Group number means the number of one of 4 groups of materials used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining, or attachment to a wall or ceiling.

Horizontal exit

Horizontal exit means a required doorway between 2 parts of a building separated from each other by a fire wall.

Loadbearing

Intended to resist vertical forces additional to those due to its own weight.

Non-combustible

Non-combustible means—

(a) applied to a material — not deemed combustible as determined by AS 1530.1:1994 — Combustibility Tests for Materials; and

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

Occupiable outdoor area

Occupiable outdoor area means a space on a roof, balcony or similar part of a building–

(a) that is open to the sky; and

(b) to which access is provided, other than access only for maintenance; and

(c) that is not open space or directly connected with open space.

Open space

Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

Performance Requirement

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

Performance Solution

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

Sarking-type material

Sarking-type material means a material such as a reflective insulation or other flexible membrane of a type normally used for a purpose such as waterproofing, vapour management or thermal reflectance.

Smoke developed index

Smoke developed index means the index number for smoke as determined by AS/NZS 1530.3.

Smoke development rate

Smoke development rate means the development rate for smoke as determined by testing flooring materials in accordance with AS ISO 9239.1.

Smoke growth rate index

Smoke growth rate index (SMOGRA RC) means the index number for smoke used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining or attachment to a wall or ceiling.

ANNEXURE F BCA COMPLIANCE SPECIFICATION

Annexure F – BCA Compliance Specification

The following BCA matters are to be addressed by specific BCA Design Certificate to be issued by the relevant architectural, services and engineering consultants at the Construction Certificate Stage. This schedule should be forwarded to all consultants to obtain verification that these items have and will be included in the design documentation / specifications:

Architectural Design Certification

1. The FRL's of building elements for the proposed works have been designed in accordance with Table 4 of Specification C1.1 of BCA2019 for a building of Type B 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. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. Travel distances to exits will be in accordance with Clause D1.4 of BCA2019.
13. The alternative exits will be distributed uniformly around the storey and will not be less than 9m apart, and not more that 45m apart in the residential portion or patient care areas in the health-care building or 60m, in accordance with Clause D1.5 of BCA2019.
14. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
15. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
16. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.

17. The enclosing walls and ceiling under the non-fire-isolated ramp will achieve an FRL of 60/60/60, and have a self-closing -/60/30 fire door, in accordance with Clause D2.8 of BCA2019.
18. New pedestrian ramps will comply with AS 1428.1:2009, Clause D2.10 and Part D3 of BCA2019. The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
19. 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.
20. 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.
21. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
22. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the machinery room, boiler house, lift-machine room, plant-room, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS 1657:2013 or Part D2 of BCA2019.
23. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
24. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
25. The openable portion of a window in a 9b early childhood centre 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.
26. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.
27. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2:2012.
28. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
29. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
30. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS 3740:2010.
31. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
32. 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.
33. 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.
34. Accessible sanitary facilities will be provided in the building in accordance with Clause F2.4, Table F2.4 (a) of BCA2019 and AS1428.1:2009.
35. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.

36. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
37. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.
38. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.
39. Outdoor play spaces associated with the early childhood centre will be in accordance with Clause G1.3 of BCA2019.

Electrical Services Design Certification:

40. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019.
41. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
42. Exit signage will be installed in accordance with Clause E4.5, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
43. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.
44. Lighting power and controls will be installed in accordance with Part J6 of BCA2019.

Hydraulic Services Design Certification:

45. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
46. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS 2419.1:2005 as required.
47. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2019 and AS 2441:2005.
48. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.

Mechanical Services Design Certification:

49. 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.
50. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS 1668.2:2012.
51. The 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.
52. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J5 of BCA2019
53. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

54. 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

55. Earthquake actions – AS 1170.4:2007
56. Masonry – AS 3700:2018
57. Concrete Construction – AS 3600:2018
58. Steel Construction AS 4100:1998
59. Aluminium Construction – AS/NZS 1664.1 or 2:1997
60. Timber Construction – AS 1720.1:2010
61. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
62. The FRL's of the structural elements for the proposed works have been designed in accordance with Specification C1.1 of BCA2019, including Table 4, for a building of Type B Construction.
63. The lift shaft will have an FRL in accordance with Clause C2.10 and Specification C1.1 of BCA2019.
64. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
65. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2019 to reinstate the FRL of the element concerned.
66. The concrete panel external walls will be in accordance with Specification C1.11 of BCA2019.

Lift Services Design Certification:

67. 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.
68. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification E3.1 of BCA2019.

NSW Specification Design Certificate:

69. Materials, floor and wall linings/coverings, surface finished and air-handling ductwork used in the works will comply with the fire hazard properties in accordance with Clause C1.10, NSW Clause C1.10, Specification C1.10 and NSW Specification C1.10 of BCA2019.
70. The number of exits provided to the building will be in accordance with Clause D1.2 and NSW Clause D1.2(d)(vii) of BCA2019.
71. The discharge points of exits will be in accordance with Clause D1.10, and NSW Clause D1.10(f) of BCA2019.
72. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6, and NSW Clause D1.6(f)(vi)&(j) of BCA2019.
73. Stair geometry to the new stairways will be in accordance with Clause D2.13, and NSW Clause D2.13(a)(ix)(x)(xi) 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 or a nosing strip with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
74. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15, and NSW Clause D2.15(d)&(e) 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 leads to a flight below.

75. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, NSW Clause D2.16 & NSW Table D2.16a 1 and D2.17 of BCA2019.
76. The doorways and doors will be in accordance with Clause D2.19, NSW Clause D2.19(b)(v) and D2.20 of BCA2019.
77. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 and NSW Clause D2.21(c)&(d) of BCA2019.
78. A smoke detection and alarm systems will be installed throughout the building in accordance with Table E2.2a, NSW Table E2.2a and NSW Specification E2.2a of BCA2019.
79. Exit signage will be installed in accordance with Clause E4.5, NSW Clause E4.6, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
80. A smoke exhaust system will be installed in the building in accordance with Table E2.2b, NSW Table E2.2b and Specification E2.2b of BCA2019.
81. The building will be mechanically ventilated in accordance with Clause F4.5, NSW F4.5(b) of BCA2019 and AS 1668.2:2012.