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BCA Assessment Report

St Aloysius College, Rozelle

Project:	St Aloysius College, Rozelle
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Document Control

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EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings for the proposed alteration to the existing development at St Aloysius College, Rozelle, 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
Further Information Required – Future Works to be Undertaken		
1.	Façade Construction – Non Combustible	Clause C1.9
2.	Fire-resistance of building elements	Specification C1.1
3.	Protection of openings in external walls	Clause C3.2
4.	Dimensions of exits and paths of travel to exits	Clause D1.6
5.	Enclosure of space under stairs and ramps	Clause D2.8
6.	Goings and risers	Clause D2.13
7.	Handrails	Clause D2.17
8.	Operation of latch	Clause D2.21

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 St Aloysius College, Rozelle. This Report is based upon the works being undertaken within the building located at 48 Victoria Road, Rozelle.

1.2. Purpose

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

1.3. Building Code of Australia

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

1.4. Limitations

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

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

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

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

This report does not include, or imply compliance with:

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

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

(c) the deemed to satisfy provision of Part D3, E3.6 , F2.4 and F2.9 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 Floor Part Level 1	School Buildings (Classrooms)
Class 5	Part Level 1	Staff Room (associated with school building)

2.3. Effective Height (Clause A1.0)

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

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

The building is required to be of Type 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	5,500m^2
	Maximum Volume	33,00m^3

2.6. Fire Compartments

The entire building is considered to be a single fire compartment.

2.7. Exits

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

(a) The first tread of each non-fire isolated stairway on the First Floor

(b) Each of the doorways leading to open space on the Ground Floor

2.8. Climate Zone (Clause A1.0)

The building is located within Climate Zone 5

2.9. Location of Fire-source features

The fire source features for the subject development are:

North: The far boundary of Victoria Road

South: The far boundary of Prince Street

East: The far boundary of Gordon Street

West: The side boundary of the allotment

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

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

(b) is neither transparent nor translucent.

3 MATTERS FOR FURTHER CONSIDERATION

3.1. General

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

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

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

3.2. Dimensions and Tolerances

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

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

3.3. 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 A or B construction, the following building elements and their components must be *non-combustible*:

  (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.

  (ii) The flooring and floor framing of lift pits.

  (iii) Non-*loadbearing* internal walls where they are required to be fire-resisting.

(b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of *non-combustible* construction in—

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

    (A) a Class 2, 3 or 9 building; and

(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.

The external walls of the existing building are generally noted to be masonry and assumed to be in accordance with this Clause. However, it is noted that there is provision of timber fascia board located above the main entry door into the building that will need to be removed.

Any new works being undertaken to the external walls will need to ensure compliance is provided with this Clause.

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. Protection of openings in external walls – Clause C3.2

The existing building is found to have openings located within 3m to the boundary and would need to be protected in accordance with this Clause for a suitable building upgrade.

It would be required that the windows are provided with a method of protection in accordance with Clause C3.4.

It is noted that the existing windows are openable, however as part of the new works it is proposed that mechanical ventilation will be provided throughout and therefore it would be possible to fix close these windows to allow for a method of protection being applied in accordance with Clause C3.4.

3.5. Fire-resistance of building elements – Specification C1.1

Due to the Classification of the building, it would be required that the floor separating the storeys is provided in accordance with this Specification and maintained one of the following options:

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

3.6. Dimensions of exits and paths of travel to exits – Clause D1.6

It is noted that each of the doors used for egress on the Ground Floor near the Office is not provided with a 750mm clear width to one of the door leafs. It is noted that the two door leafs will accommodate the required egress width but one of the doors if fitted with a latch that would hold the door closed. As part of the new works, would need to be removed to allow for both door leafs to be openable in the doorway to allow for compliance with this Clause

Furthermore, at the top of the western stair it is noted that there is an electrical board that will reduce the clear width to less than 1000mm. It would be required that this board is relocated as part of the new works to ensure that it does not impact on the egress widths.

Additionally, with the required works to the handrails under Clauses D2.17 and D3.3 it is considered that there will be a point on the western stair where the clearance between the handrails will be less than 1000mm and may need to be addressed via a Performance Solution – Refer to separate Access Report for more details.

3.7. Enclosure of space under stairs and ramps – Clause D2.8

Each of the non-fire isolated stairways are found to have an existing cupboard provided underneath that would not maintain the required FRL in accordance with this Clause.

It would be required that these enclosures are upgraded in accordance with this Clause to be at least 60/60/60 and contain a -/60/30 self closing fire door.

3.8. Goings and risers – Clause D2.13

There are no nosing strips which have been provided to the existing stairways and therefore as part of the new works these shall be installed to each of the goings in accordance with this Clause.

3.9. Barriers to prevent falls – Clause D2.16

It is noted that there existing barriers provided to the landing of the stairways are less than 1000mm and would not comply with this Clause. Additionally, the gaps provided within the barriers to the handrails would exceed 125mm and would not comply.

The barriers throughout will need to be replaced to ensure compliance is maintained in accordance with this Clause.

3.10. Handrails – Clause D2.17

It is noted that there existing handrails provided to the landing of the stairways are less than 865mm and would not comply with this Clause. The handrails throughout will need to be replaced to ensure compliance is maintained in accordance with this Clause.

Furthermore, it is noted that the existing stair configurations did not provide an offset riser and therefore it would not be possible to maintain a consistent height throughout in accordance with Clause 12 of AS1428.1-2009. It would be possible to seek a Performance Solution to omit this requirement.

3.11. Operation of latch – Clause D2.21

It was found that several of the existing latches onsite were not a lever action, and it would be required that these are replaced as part of the new works.

Furthermore, it would be required that any of the egress doors are not provided with any additional latches which would impact compliance with this Clause. The ground floor egress doors were found to have bolts into the ground which would not be compliant. These must be removed.

ANNEXURE A DESIGN DOCUMENTATION

Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 2. Architectural Plans

Architectural Plans Prepared by PMDL			
Drawing Number	**Revision**	**Date**	**Title**
DA103	-	Oct 2021	Plan LO (Ground) Proposed
DA104	-	Oct 2021	Plan L1 Proposed

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 3. 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 Spec C3.15** AS1530.4:2014 & AS4072.1-2005
2.	Fire shutters (where proposed)	**BCA2019 C3.4** (Acceptable methods of protection) **BCA2019 Spec. C3.4** AS1905.2-2005
3.	Fire windows (where proposed)	**BCA2019 C3.4** (Acceptable Methods of Protection) **BCA2019 Spec. C3.4** identical to tested porotype
4.	Lightweight construction	**BCA2019 C1.1, Spec. C1.1** **BCA2019 C1.8, Spec C1.8**
General		
5.	Portable fire extinguishers	**BCA2019 E1.6** AS 2444–2001
6.	Operation of Door latches	**D2.21** (Operation of Latch)
7.	Swing of Exit Doors	**D2.20** (Swinging Doors)
8.	Warning & operational signs	**BCA2019 D3.6** (Braille Exit Signs) (Note: E4.5 (Exit Signs)) **BCA2019 E3.3** (Lift Signs)
Lifts		
9.	Access to Lift Pits > Located at lowest level or if >3m provided through an access door	**BCA2019 D1.17** (Access to Lift Pits) 'DANGER LIFT WELL – ENTRY OF UNAUTHORISED PERSONS PROHIBITED – KEEP CLEAR AT ALL TIMES'
Electrical Services		
10.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1:2018

Item	Essential Fire and Other Safety Measures	Standard of Performance
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
Hydraulic Services		
12.	Fire hydrant systems (Street system)	**BCA2019 E1.3** AS 2419.1:2005
13.	Wall-wetting sprinkler / drenchers (where proposed)	**BCA2019 C3.4,** AS 2118.2: Wall-wetting sprinkler / drenchers
Mechanical Services		
14.	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,** **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 4. Type B Construction

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

Item	Class 9b
Internal walls bounding public corridors, public lobbies and the like: - Loadbearing - Non-loadbearing	 120/-/- -/-/-
Other loadbearing internal walls and columns	120/-/-
Roofs	-/-/-

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—

(a) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or

(b) have an *FRL* of at least 30/30/30; or

(c) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal; and

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 5. 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	N/A	Clause is not applicable due to the building classification	N/A

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.	The building will need to comply with Specification C1.1 for Type B construction where applicable.	CRA – Refer Annexure F
C1.2: Calculation of rise in storeys	The building has a rise in storeys of two (2).	Number of storeys have been noted.	Noted
C1.3: Buildings of multiple classification	Informational	Noted	Noted
C1.4: Mixed Types of construction	Noted	The building will all be one type of construction	Noted
C1.5: Two Storey Class 2, 3 or 9c buildings	N/A	Clause is not applicable due to the building classification	N/A
C1.6: Class 4 Parts of building	N/A	Clause is not applicable due to the building classification	N/A
C1.7: Open spectator stands and indoor sports stadium	N/A	Clause is not applicable due to the use of the building	N/A
C1.8: Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8.	Where lightweight construction is used for fire rating, it must be provided in accordance with this clause.	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*:	All elements within the wall must be non-combustible in accordance with this clause. The external walls of the existing building are generally noted to be masonry and assumed to be in accordance	**FI**

Section C: Fire Resistance			
	(i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (ii) The flooring and floor framing of lift pits. (iii) Non-loadbearing internal walls where they are required to be fire-resisting. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of *non-combustible* construction in— (i) a building required to be of Type A construction; and (ii) a building required to be of Type B construction, subject to C2.10, in— (A) a Class 2, 3 or 9 building; and (B) Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys. (c) A loadbearing internal wall and a loadbearing *fire wall*, including those that are part of a loadbearing shaft, must comply with Specification C1.1. (d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants, termite management systems, Glass including laminated glass, thermal breaks associated with glazing systems and damp-proof courses. (e) The following materials, may be used wherever a *non-combustible* material is required: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet.	with this Clause. However, it is noted that there is provision of timber fascia board located above the main entry door into the building that will need to be removed. Any new works being undertaken to the external walls will need to ensure compliance is provided with this Clause.	

Section C: Fire Resistance			
	(iv) Fibre-reinforced cement sheeting. (v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. (vi) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5. (vii) Bonded laminated materials where— (A) each lamina, including any core, is *non-combustible*; and (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and (C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively. This clause also prohibits the use of in situ formwork containing combustible elements including PVC lined 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. See comments at part 3.4 above.		
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*.	Linings provided within the building must be compliance with this clause and Specification C1.10. No details have been provided at this stage.	CRA – Refer Annexure F

Section C: Fire Resistance			
C1.11: Performance of external walls in fire	N/A	Clause not applicable due to the existing nature of the building.	Noted
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.	Noted	Noted
C1.13: Fire-protected timber: Concession	N/A	There is no fire protected timber being proposed	N/A
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be *non-combustible* unless it is one of the following: (a) An ancillary element that is *non-combustible*. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grille not more than 2 m² in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and (iii) does not extend beyond one fire compartment; and	Ancillary elements provided to the building are required to be provided in accordance with this clause.	CRA – Refer Annexure F

Section C: Fire Resistance			
	(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
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 building is considered to be of a suitable size to allow for compliance with the provisions of this clause	Complies

Section C: Fire Resistance			
C2.3: Large isolated buildings	N/A	The building is not considered to be a large isolated building.	N/A
C2.4: Requirements for open spaces and vehicular access	N/A	The building is not considered to be a large isolated building.	N/A
C2.5: Class 9a and 9c Buildings	N/A	Not applicable due to the building classification.	N/A
C2.6: Vertical separation of openings in external walls	N/A	Cause is not applicable due to the rise in storeys of the building	N/A
C2.7: Separation by fire walls	N/A	The building is all considered to be a single fire compartment with no fire walls required. Fire rated walls for any enclosures will need to be installed in accordance with this Clause.	Noted
C2.8: Separation of classifications in the same storey	Noted	It is considered that the Class 9b and 5 will maintain the same FRL requirements and therefore there would be no need to separate these classifications.	Noted
C2.9: Separation of classifications in different storeys	The floor separating the Class 2, 3 or 4 part from the storey below must: (i) be a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or (ii) have an *FRL* of at least 30/30/30; or (iii) have a fire-protective covering on the underside of the floor, including beams	Cause is not applicable due to the building classification	N/A

Section C: Fire Resistance			
	incorporated in it, if the floor is combustible or of metal.		
C2.10: Separation of lift shafts	N/A	Cause is not applicable due to the rise in storeys of the building	N/A
C2.11: Stairways and lifts in one shaft	N/A	Cause is not applicable due to the rise in storeys of the building	N/A
C2.12: Separation of equipment	Noted	It is not considered that the building will be provided with equipment in accordance with this Clause.	Noted
C2.13: Electricity supply system	> A main switchboard which sustains emergency equipment operating in the emergency mode must be fire separated from any other part of the building by construction having an *FRL* of not less than 120/120/120 and have the doorway fitted with self-closing fire door having an *FRL* of not less than –/120/30. > Any electrical conductors located within the building that supply a substation or main switchboard for emergency equipment must comply with BCA clause C2.13. > Emergency equipment switchgear must be separated from non-emergency equipment switchgear by metal partitions designed to minimize the spread of a fault from the non-emergency equipment switchgear. > Emergency equipment includes but is not limited to the following: o fire hydrant booster pumps; o sprinkler pumps; o hose reel pumps;	Any 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. Based on the services specification it is noted that that MSB is proposed to be within a 2hr fire rated enclosure.	CRA – Refer Annexure F

Section C: Fire Resistance			
	○ 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	Cause is not applicable due to the building classification	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 (iii) Openings in the vertical plane formed between building elements at the construction edge or	Noted	Noted

Section C: Fire Resistance			
	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: > less than 3 m from a side or rear boundary; or	The existing building is found to have openings located within 3m to the boundary and would need to be protected in accordance with this Clause for a suitable building upgrade. It would be required that the windows are provided with a method of protection in accordance with Clause C3.4.	**FI**

Section C: Fire Resistance				
		> 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.		
C3.3:	Separation of external walls and associated openings in different fire compartments	N/A	The building is all considered to be one fire compartment	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 (ii) –60/– fire windows that are automatically closing or permanently fixed in the closed position; or (iii) –/60/– automatic closing fire shutters.	The methods of protecting the windows exposed to the boundary will need to be provided in accordance with this Clause. It is noted that the existing windows are openable, however as part of the new works it is proposed that mechanical ventilation will be provided throughout and therefore it would be possible to fix close these windows to allow for a method of protection being applied.	CRA – Refer Annexure F

Section C: Fire Resistance			
	Other openings: (i) Excluding voids – internal or external wall-wetting sprinklers; or (ii) Construction having an *FRL* not less than –/60/– Fire doors, fire windows and fire shutters must comply with BCA Specification C3.4.		
C3.5: Doorways in fire walls	N/A	There are no fire walls proposed within the building	N/A
C3.6: Sliding fire doors	N/A	There are no sliding fire doors proposed	N/A
C3.7: Protection of doorways in horizontal exits	N/A	There are no horizontal exits proposed	N/A
C3.8: Openings in fire-isolated exits	N/A	Clause not applicable as there are no fire isolated exits provided	N/A
C3.9: Service penetrations in fire-isolated exits	N/A	Clause not applicable as there are no fire isolated exits provided	N/A
C3.10: Openings in fire-isolated lift shafts	N/A	Clause not applicable as the lift shaft is not required to maintain an FRL	N/A
C3.11: Bounding Construction: Class 2, 3 and 4 Buildings	N/A	Cause is not applicable due to the building classification	N/A
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.	Openings in floor and ceilings are required to be protected in accordance with Clause C3.15.	CRA – Refer Annexure F

Section C: Fire Resistance			
	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.		
C3.13: Openings in shafts	N/A	Cause is not applicable due to the type of construction	N/A
C3.15: Openings for service installations	Where services pass through an element which is required to achieve an *FRL* (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15. **Note:** contractors should check with PCA to confirm compliance with their proposed fire stopping method.	Services provided throughout the building must be protected in accordance with this clause and Specification C3.15	CRA – Refer Annexure F
C3.16: Construction joints	N/A	Clause not applicable due to the existing nature of the building.	Noted
C3.17: Columns protected with lightweight construction to achieve an FRL	N/A	Clause not applicable due to the existing nature of the building.	Noted
Specification C1.1 – Fire-Resisting Construction			
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.	The building is noted to be exposed to the fire source features being the adjacent property boundaries.	Noted

Section C: Fire Resistance				
2.2:	Fire protection for a support of another part	Where a part of a building required to have an *FRL* depends upon direct vertical or lateral support from another part to maintain its *FRL*, that supporting part must have an *FRL* not less than that required by other provisions of this Specification; and if located within the same *fire compartment* as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	The FRL of supporting elements must be provided in accordance with this clause.	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).	Any lintels within the building must be in accordance with this clause.	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.	Any attachments to the building must be in accordance with this clause.	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— (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.	This concession would be applicable to any applicable structure located on the roof.	CRA – Refer Annexure F

Section C: Fire Resistance				
		(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	There are no mezzanines proposed	N/A
2.7:	Enclosure of shafts	Noted	Clause is not applicable as it is note consider to provide any fire rated shafts.	Noted
2.8:	Carparks in Class 2 and 3 Buildings	N/A	Cause is not applicable due to the building classification	N/A
2.9:	Residential Aged Care building: Concession	N/A	Cause is not applicable due to the use of the building	N/A
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.	-
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	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. It is noted that this is an existing building and the structural elements of the building are not forming part of the new works. However it would be required that a Structural Engineer confirm the existing FRLs maintained throughout the building to ensure that compliance is maintained. Due to the Classification of the building, it would be required that the floor separating the storeys is provided in accordance with this Specification and maintained one of the following options: (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	**FI**

Section C: Fire Resistance			
	> 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-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. > 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.	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;	

Section C: Fire Resistance				
		> 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 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	No carparking is proposed as part of the new works	N/A
4.3:	Class 2 and 3 buildings: Concession	N/A	Cause is not applicable due to the building classification	N/A
Specification C1.10 – Fire Hazard Properties				
1.	Scope	Informational	Noted	-
2.	Application	Informational	Noted	Noted
3.	Floor linings and floor coverings	A floor lining or floor covering must have– (a) a *critical radiant flux* not less than that listed in Table 2; and (b) in a building not protected by a sprinkler system complying with Specification E1.5, a maximum smoke development rate of 750 percent-minutes; and	The floor linings or covering must be provided in accordance with this clause.	CRA – Refer Annexure F

Section C: Fire Resistance				
		(c) a *group number* complying with Clause 6(b), for any portion of the floor covering that is continued more than 150 mm up a wall.		
4.	Wall and ceiling linings	(a) A wall or ceiling lining system must comply with the *group number* specified in Table 3 and for buildings not fitted with a sprinkler system complying with Specification E1.5 have– (i) a *smoke growth rate index* not more than 100; or (ii) an *average specific extinction area* less than 250 m2/kg. (b) A *group number* of a wall or ceiling lining and the *smoke growth rate index* or *average specific extinction area* must be determined in accordance with AS 5637.1:2015.	The wall and ceiling linings must be provided in accordance with this clause.	CRA – Refer Annexure F
5.	Air-handling ductwork	Rigid and flexible ductwork must comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.	The air handling ductwork must be provided in accordance with this clause.	CRA – Refer Annexure F
6.	Lift cars	Materials used as— (a) floor linings and floor coverings must have a *critical radiant flux* not less than 2.2; and (b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1:2015.	The lift car must be provided in accordance with this clause.	CRA – Refer Annexure F
7.	Other materials	Materials and assemblies not included in Clauses 3, 4, 5 or 6 must not exceed the indices set out in Table 4.	Any other material proposed within the building must be provided in accordance with this clause.	CRA – Refer Annexure F

Section D: Access and Egress
Part D1 – Provision for Escape

Section D: Access and Egress				
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	Every building must have at least one exit from each storey. **Class 9b-** In addition to any horizontal exit, not less than 2 exist must be provided from the following: > Each storey in a primary or secondary school with a rise in storeys of 2 or more, > Any storey or mezzanine that accommodated more than 50 persons	Each storey is provided with access to two exits.	Complies
D1.3:	When fire-isolated stairways and ramps are required	N/A	Cause is not applicable due to the rise in storeys of the building	N/A
D1.4:	Exit travel distances	No point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m.	Due to the number of exits made available, it is considered that a distance to a point of choice will be located within 20m and the total travel of not more than 40m to the exit. Note: this will be subject to upgrades under Clause D1.6 and D2.21 for exits on the Ground Floor.	Complies
D1.5:	Distance between alternative exits	*Exits* that are required as alternative means of egress must be– (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 *exits* is readily	The alternative exit locations throughout are noted to be further than 9m and will be within 60 in accordance with this clause.	Complies

Section D: Access and Egress				
		available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (i) not more than 60 m apart; and (c) located so that alternative paths of travel do not converge such that they become less than 6 m apart. Note: the distance between *exits* must be measured through the point at which travel two *exits* is available.		
D1.6:	Dimensions of exits and paths of travel to exits	In a required *exit* or path of travel to an *exit*– > the unobstructed height throughout *exits* and paths of travel to *exits* must not be less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and > the unobstructed width of each *exit* or path of travel to an *exit*, except for doorways must be not less than 1m; > the unobstructed width of doorways must be not less than 750 mm, unless providing access for people with disabilities in which case the unobstructed width must be not less than 850 mm. > the required width of a stairway or ramp must be measured clear of all obstructions such as handrails. > the unobstructed width of a required *exit* must not diminish in the direction of travel to a road or open space.	Throughout the building, it is noted that sufficient egress width will generally be maintained throughout. However, it is noted that one of the doorsets used for egress on the Ground Floor near the Office is not provided with a 750mm clear width to one of the door leafs. It is considered that the two door leafs will accommodate the required egress width but one of the doors if fitted with a latch that would hold the door closed. This would need to be removed as part of the new works to allow for both door leafs to be openable in the doorway to allow for compliance with this Clause Additionally, with the required works to the handrails under Clauses D2.17 and D3.3 it is considered that there will be a point on the western stair where the clearance between the handrails will be less than 1000mm and may need to be addressed via a Performance Solution. Furthermore, at the top of the western stair it is noted that there is an electrical board that will reduce the clear width to less than 1000mm. It would be proposed that this board is relocated to ensure that it does not impact on the egress widths.	**FI**
D1.7:	Travel via fire-isolated exits	N/A	Clause is not applicable as there are no fire isolated exits provided	N/A

Section D: Access and Egress			
D1.8: External stairways or ramps in lieu of fire-isolated exits	N/A	Clause is not applicable due to no external stairways being provided	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 5, 6, 7, 8 or 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 5 to 8 or 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 non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.	Each of the existing stairways will provided suitable discharge in accordance with this Clause.	Complies
D1.10: Discharge from exits	*Exits* must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the *exit*. If a required *exit* leads to open space, the path of travel to the road must have an unobstructed width of not less than 1m. If an *exit* discharges to open space that is at a different level that the public road to which it is connected, the	Egress from the final discharge doors are noted to lead to Gordon Street via a walkway with a suitable width and gradient.	CRA – Refer Annexure F

Section D: Access and Egress			
	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		
D1.11: Horizontal exits	N/A	There are no horizontal exits proposed within the building.	N/A
D1.12: Non-required stairways, ramps or escalators	N/A	There are no non-required stairways, or the like proposed within the building.	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 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:	The number of persons accommodated is based upon the number of indicative seats shown on the plans, based on this it would be considered the First Floor would accommodate 104, while the ground floor would be 84. (Based on 2 staff per class)	Noted

Section D: Access and Egress			
D1.14: Measurement of distances	Informational	Noted	Noted
D1.15: Method of Measurement	Informational	Noted	Noted
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	Informational	There are no plant rooms, or the like detailed at this stage that would require the use of this concession	Noted
D1.17: Access to lift pits	Access to the lift pit is assumed to be through the bottom landing doors as the pit is assumed to be less than 3m deep.	Access to the lift pits must be provided in accordance with this clause	CRA – Refer Annexure F
D1.18: Egress from early childhood centres	N/A	Clause is not applicable due to the use of the building	N/A
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	Clause is not applicable due to the rise in storeys of the building	N/A
D2.3: Non-fire-isolated stairways and ramps	N/A	Clause is not applicable due to the rise in storeys of the building	N/A
D2.4: Separation of rising and descending stair flights	N/A	Cause is not applicable due to no fire isolated stairways	N/A

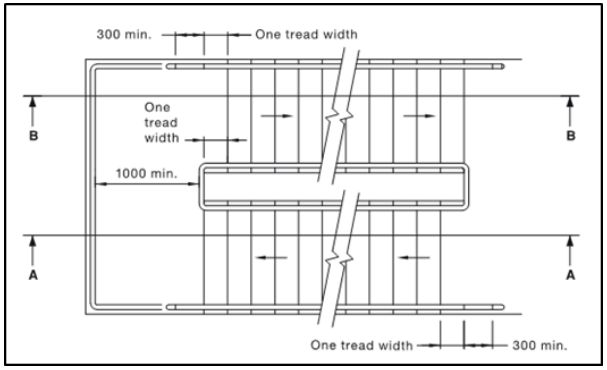
Section D: Access and Egress			
D2.5: Open access ramps and balconies	N/A	There are no open access ramps, or the like provided in accordance with this clause.	N/A
D2.6: Smoke lobbies	N/A	There are no smoke lobbies required to be provided.	N/A
D2.7: Installations in exits and paths of travel	> Access 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.	Any electricity meters, distribution boards or ducts, or telecommunications distribution boards or equipment installed in the common areas or along an egress path must be smoke sealed in accordance with this clause.	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. 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.	Each of the non-fire isolated stairways are found to have an existing cupboard provided underneath that would not maintain the required FRL in accordance with this Clause. It would be required that these enclosures are upgraded in accordance with this Clause and has been suitable detailed on the plans.	CRA – Refer Annexure F
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.	There are no stairways which are required to have a width greater than 2m	Noted

Section D: Access and Egress			
D2.10: Pedestrian ramps	> A ramp serving as a required *exit* must— (i) where the ramp is also serving as an accessible ramp under Part D3, be in accordance with AS 1428.1:2009; or (ii) in any other case, have a gradient not steeper than 1:8. > 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.	There are no ramps detailed as being provided at this stage.	Noted
D2.11: Fire-isolated passageways	N/A	There are no fire isolated passageways proposed	N/A
D2.12: Roof as open space	N/A	No portion of the roof is considered to be used as open space	N/A
D2.13: Goings and risers	Stairways must comply with the following: > Stairways must have not more than 18 and not less than 2 risers in each flight; > Goings must be between 250 mm and 355 mm; > Risers must be between 115 mm high and 190 mm high; > The slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700; > The goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (R) are considered constant if the variation between– (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and	Each of the risers and goings to the existing stairways are noted to be provided in accordance with the range of this Clause. However, there are no nosing strips which have been provided and therefore as part of the new works these shall be installed to each of the goings.	CRA – Refer Annexure F

<table>
<tr><th colspan="4">Section D: Access and Egress</th></tr>
<tr><td></td><td>(B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm.
> Risers must not contain any openings that would permit a 125 mm sphere to pass through.
> Each tread must have a non-slip finish or an adequate non-skid strip near the edge of the nosings;
> Treads must be of solid construction (not mesh or perforated) if the stairway is more than 10 m high or connects more than 3 storeys.
> In the case of a required stairway, no winders in lieu of a landing
> Treads must have a surface or nosing strip with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with AS 4586-2013 Slip resistance classification of new pedestrian surface materials.</td><td></td><td></td></tr>
<tr><td>D2.14: Landings</td><td>Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Condition</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
</table></td><td>The landings are considered to be provided in accordance with this clause. It was not possible to determine the level of slip resistance to the existing stairways – it would be required if any new linings or paint is provided that it must allow for compliance being maintained in accordance with this Clause.</td><td>CRA – Refer Annexure F</td></tr>
</table>

Section D: Access and Egress			
	<table><tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr><tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr></table>		
D2.15: Thresholds	The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless– (a) in a building required to be accessible, the doorway– (i) opens to a road or open space; and (ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1:2009; or (b) in other cases– (i) the doorway opens to a road or open space, external stair landing or external balcony; and (ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.	Throughout the existing building, it is found that there are several located where a step of change is level is provided at the doorway. It would be required that each of the rooms are accessible and therefore a level threshold will need to be provided to allow for compliance access. Once a level threshold is maintained it is considered that compliance would be achieved with this Clause. Refer to separate Access Report for further requirements under AS1428.1-2009.	CRA – Refer Annexure F
D2.16: Barriers to prevent falls	Balustrades must be provided to stairs and balconies, driveway ramps etc where there is a fall of more than 1m. Balustrades must comply with the following: <u>Balustrade minimum heights</u> > 865 mm above stair nosings; > 865 mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length; and > 1 m in all other locations. <u>Balustrade openings – other than fire-isolated stairs</u>	It is noted that there existing barriers provided to the landing of the stairways are less than 1000mm and would not comply with this Clause. Additionally, the gaps provided within the barriers to the handrails would exceed 125mm and would not comply. The barriers throughout will need to be upgraded as part of the new works to ensure compliance is maintained in accordance with this Clause. The plans have detailed new barriers being provided; this will need to be documented during detailed design stages.	**FI**

Section D: Access and Egress			
	> 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. Climbability – other than fire-isolated stairs For floors more than 4m above the surface beneath, the balustrade must not incorporate any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that could facilitate climbing.		
D2.17: Handrails	Handrails to stairways must: > be located along at least one side of the ramp or flight (a flight being 2 or more risers); and > located along each side if the total width of the stairway or ramp is 2m or more; and > be fixed at a height of not less than 865 mm above the nosings of the stair treads and the floor surface of the ramp, landing, or the like; and > be continuous between stair flight landings and have no obstruction that will break a hand-hold. > be constructed to comply with clause 12 of AS 1428.1:2009 (including handrails to the fire stairs). > Handrails in common areas (other than fire stairs) must also accord with D3.3. Clause 12 of AS 1428.1:2009 A required *exit* (fire isolated or non-fire isolated) serving an area required to be accessible must be fitted with handrails in accordance with Clause 12 of 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	It is noted that there existing handrails provided to the landing of the stairways are less than 865mm and would not comply with this Clause. The handrails throughout will need to be replaced to ensure compliance is maintained in accordance with this Clause. The plans have detailed new handrails being provided; this will need to be documented during detailed design stages. Furthermore, it is noted that the existing stair configurations did not provide an offset riser and therefore it would not be possible to maintain a consistent height throughout in accordance with Clause 12 of AS1428.1-2009. It would be possible to seek a Performance Solution to omit this requirement.	FI

Section D: Access and Egress			
	accordance with Figure 28 in AS 1428.1:2009 or with larger landings to accommodate required handrail extensions.  Figure 28 in AS 1428.1:2009		
D2.18: Fixed platforms, walkways stairways and ladders	N/A	It is considered there are no rooms which will require the use of this concession	Noted
D2.19: Doorways and doors	> *Exit* doors that are power operated must be able to be opened manually under a force of not more than 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.	Each of the final discharge doors are noted as being swinging doors that are not automatic opening	Noted

Section D: Access and Egress			
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).	Each of the final discharge doors are noted as being swinging doors that swing in the direction of egress and would be suitable in accordance with this Clause.	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 grip section of the handle of not less than 35mm and not more than 45mm; or	The latches provided throughout the building are required to be provided in accordance with this Clause and will require a single lever action handle to comply. It was found that several of the existing latches onsite were not a lever action, and it would be required that these are replaced as part of the new works. Furthermore, it would be required that any of the egress doors are not provided with any additional latches which would impact compliance with this Clause. The ground floor egress doors were found to have bolts into the ground which would not be compliant. These must be removed and addressed as part of the new works.	FI

Section D: Access and Egress			
	(iv) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor. (v) where the latch operation device referred to in (ii) is not located on the door leaf itself— (A) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located— (aa) not less than 500 mm from an internal corner; and (bb) for a hinged door, between 1 m and 2 m from the door leaf in any position; and (cc) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position. (B) braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. The above requirements do not apply to a door that – (i) serves only or is within a *sole-occupancy unit* in a Class 2 building; or (ii) serves a *sole-occupancy unit* in a Class 5, 6, 7 or 8 building with a floor area not more than 200m2; or (iii) are fitted with a fail-safe device which automatically unlocks the door upon the activation of an AS 1670.1 detection system installed throughout the building and is readily openable when unlocked.		

Section D: Access and Egress			
D2.22: Re-entry from fire-isolated exits	N/A	Clause is not applicable due to the rise in storeys of the building	N/A
D2.23: Signs on doors	N/A	Signage is not required due to fire doors not being proposed in accordance with this Clause.	N/A
D2.24: Protection of openable windows	(a) Where the lowest level of the window opening is less than 1.7m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with– (A) a device to restrict the window opening; or (B) a screen with secure fittings. (ii) A device or screen required by (i) must– (A) not permit a 125 mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the– (aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (b) 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 (a)(ii)(C); and	Window protection must be provided in accordance with this clause.	CRA – Refer Annexure F

Section D: Access and Egress			
	(ii) where the floor below the window is 4m or more above the surface beneath if the window is not covered by (a). (c) A barrier covered by (b) 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. **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.		
D2.25: Timber stairways: concession	N/A	There are no timber stairways proposed in accordance with this clause.	N/A
Part D3 – Access for People with A Disability			
Refer to separate Access Report for an assessment on this Part			

Section E: Services and Equipment			
Part E1 – Fire Fighting Equipment			
E1.0: Deemed-to-Satisfy Provisions	Informational	Noted	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.	The building is required to be provided with coverage from a fire hydrant. Based on the services correspondence it is noted that street hydrants will be relied upon for coverage. Confirmation would be required as to the available pressures and flows to allow for compliance being maintained with AS2419.1-2005.	CRA – Refer Annexure F

Section E: Services and Equipment			
E1.4: Fire hose reels	N/A	Clause is not applicable due to the classification and uses of the building	N/A
E1.5: Sprinklers	N/A	Cause is not applicable due to the rise in storeys of the building	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.	Portable fire extinguishers must be provided in accordance with clause E1.6 & Table E1.6 of the BCA and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444:2001.	CRA – Refer Annexure F
E1.8: Fire control centres	N/A	Clause is not applicable due to the rise in storeys of the 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*;	These precautions will need to be provided during construction.	Noted
E1.10: Provision for special hazards	N/A	The building is not considered to be a special hazard	N/A
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)	**Automatic Shutdown** Any system in a Class 9b assembly building which does not form part of a smoke hazard management system, other than:	There are initially no smoke hazard management system which are required to be provided in accordance with this clause due to the rise in storeys.	CRA – Refer Annexure F

Section E: Services and Equipment			
	○ 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.	However, pending the mechanical ventilation being provided, it would be required to maintain an automatic shutdown with smoke detectors in accordance with Clause 6 of Specification E2.2a.	
E2.3: Provisions for special hazards	N/A	The building is not considered to be a special hazard	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	The passenger lift must be provided in accordance with Specification E3.1	CRA – Refer Annexure F
E3.2: Stretcher facility in lifts	N/A	Clause not applicable due to the effective height of the building	N/A
E3.3: Warning against use of lifts in fire	Warning signs indicating “DO NOT USE LIFTS IF THERE IS A FIRE” shall be displayed near every call button for a passenger lift or group of lifts throughout a building as per E3.3.	Suitable signage must be provided to the lift in accordance with this clause.	CRA – Refer Annexure F
E3.4: Emergency lifts	N/A	No emergency lift is required to be provided	N/A
E3.5: Landings	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D.	The landings to the lift throughout each of the storeys are noted to be of a sufficient size to allow for access to be provided.	CRA – Refer Annexure F
E3.6: Passenger lifts	In an accessible building, every passenger lift must be one of the types specified in Table E3.6a, have accessible features in accordance with Table E3.6b, and	Due to the effective height it would be required that the lift car maintains a clear dimension of 1100mm x 1400mm.	CRA – Refer Annexure F

Section E: Services and Equipment			
	not rely on a constant pressure device for its operation if the lift car is fully enclosed.	Based on the plans it is noted that compliance would be achievable due to the lift shaft having the dimensions 1400mm x 1600mm, however the lift car size has not been detailed at this stage. The lift controls, handrails and door openings are required to be located in accordance with AS1735.12.	
E3.7: Fire service controls	N/A	Clause not applicable due to the effective height of the building	N/A
E3.8: Aged care buildings	N/A	Not applicable due to the building classification	N/A
E3.9: Fire service recall switch	N/A	Clause not applicable due to the effective height of the building	N/A
E3.10: Lift car service drive control switch	N/A	Clause not applicable due to the effective height of the building	N/A
Part E4 – Visibility In An Emergency, Exit Signs And Warning Systems			
E4.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E4.2: Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with Clause E4.2 of the BCA and AS/NZS 2293.1:2018.	It would be required that each of the new works are provided with emergency lighting in accordance with this clause.	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.	The emergency lighting will need to comply with AS2293.1	CRA – Refer Annexure F

Section E: Services and Equipment				
E4.5:	Exit signs	*Exits* signs are to be provided above or adjacent to a door providing egress as well as directional signage throughout the entire development where necessary.	Exits signage must be provided in accordance with this clause to the new works.	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.	Where an *exit* is not readily apparent, directional signage is to be installed indicating the direction of egress.	CRA – Refer Annexure F
E4.7:	Class 2 and 3 buildings and Class 4 Parts: Exemptions	Informational	Noted	Noted
E4.8:	Design and operation of exit signs	*Exit* signs must comply with AS/NZS 2293.1:2018 and be clearly visible at all times when the building is occupied.	Exits signage must be provided in accordance with this clause.	CRA – Refer Annexure F
E4.9:	Emergency warning and intercom systems	N/A	Clause is not applicable due to the rise in storeys of the building	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.	The building structures are existing and assumed to be provided with existing weatherproofing. No new works are being undertaken to the external wall of the building that would be captured by this Clause.	PS Required
F1.1:	Stormwater drainage	Stormwater drainage to comply with AS/NZS 3500.3:2018.	Any new stormwater works will need to comply with this Clause.	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.	The building is existing and assumed to be provided with existing weatherproofing. It is considered that there	CRA – Refer Annexure F

Section F: Health and Amenity			
		would be no new works which would trigger compliance with this clause. Any new works will need to comply with this Clause.	
F1.5: Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	The building is existing and assumed to be provided with existing roof coverings. It is considered that there would be no new works which would trigger compliance with this clause. Any new works will need to comply with this Clause.	CRA – Refer Annexure F
F1.6: Sarking	*Sarking-type materials* used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2:2017.	The building is existing and assumed to be provided with existing weatherproofing. It is considered that there would be no new works which would trigger compliance with this clause. Any new works will need to comply with this Clause.	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.	The new works being undertaken to the wet areas will required compliance in accordance with this Clause.	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.	The building structures are existing and assumed to be provided with existing damp proofing. It is considered that there would be no new works which would trigger compliance with this clause. Any new works will need to comply with this Clause.	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).	The building structures are existing and assumed to be provided with existing damp proofing. It is considered that there would be no new works which would trigger compliance with this clause. Any new works will need to comply with this Clause.	CRA – Refer Annexure F
F1.11: Provision of floor wastes	In Class 2 or 3 buildings or Class 4 part of a building, a bathroom or laundry is to have a floor waste where the	New floor wastes being provided will need to comply with this clause.	CRA – Refer Annexure F

Section F: Health and Amenity			
	floor is graded to the floor waste to permit the drainage of water.		
F1.12: Sub-floor ventilation	N/A	Clause is not applicable due to due to the building being slab on ground	N/A
F1.13: Glazed Assemblies	Glazed assemblies are to comply with AS 2047:2014 and AS 1288:2006.	New glazed assemblies are to comply with AS 2047:2014 and AS 1288:2006.	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	Cause is not applicable due to the building classification	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 (d) For the purpose of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels	The number of occupants will be based upon the number of sanitary compartments provided in accordance with Table F2.3	CRA – Refer Annexure F

Section F: Health and Amenity				
F2.3:	Facilities in Class 3 to 9 buildings (including Table F2.3)	(a) Except where permitted by (b), (c), (f), F2.4(a) and F2.4(b), separate sanitary facilities for males and females must be provided for Class 3, 5, 6, 7, 8 or 9 buildings in accordance with Table F2.3. (b) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (c) If the majority of employees are one sex, not more than 2 employees of the other sex may share toilet facilities if the facilities are separated by means of walls, partitions and doors to afford privacy. (d) Employees and the public may share the same facilities in a Class 6 and 9b building (other than a school or early childhood centre) provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. (e) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females. (f) Not less than one washbasin must be provided where closet pans or urinals are provided.	The school is considered to be a male students only and therefore based on the sanitary compartments provided it would be considered that 250 students would be accommodated when using the accessible sanitary compartment and the basin within the shower. When reviewing the staff facilities it would be required to allocated two WCs to the female and 1 to the male to accommodate up to 20 staff.	CRA – Refer Annexure F
F2.4:	Accessible sanitary facilities (including Table F2.4)	N/A	This clause has not been reviewed as part of this report. Refer to separate access assessment	N/A
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	The majority of the facilities are for the principal use of school students will need to have the partitions maintain a height of no less than 1.5m. Majority of the enclosed sanitary compartments will not maintain a clearance of 1200mm between the WC and the door swing and therefore must be removable in accordance with this clause.	CRA – Refer Annexure F

Section F: Health and Amenity			
	(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.		
F2.6: Interpretation: urinals and washbasins	Informational	Noted	Noted
F2.8: Waste Management	N/A	Clause is not applicable due to the building classification	N/A
F2.9: Accessible adult change facilities	N/A	Clause is not applicable due to the building classification	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	It is noted that each part of the building will only accommodate less than 100 people except for the corridors. It would be required that a 2700mm height is maintained along these corridors to allow for compliance in this Clause. This will need to be documented as being achieved as the design develops.	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; and (c) in any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and (ii) a commercial kitchen — 2.4 m; and (iii) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like. (iv) A required accessible adult change facility – 2.4m		
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 general purpose classrooms in primary or secondary schools	Natural lighting is required to be provided all general purpose classrooms throughout the building	CRA – Refer Annexure F

Section F: Health and Amenity			
F4.2: Methods and extent of natural lighting	(a) Natural light must be provided by: (i) Windows: (A) with an aggregate light transmitting area of not less than 10% the floor area of the room; and (B) that are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii) Rooflights, that: (A) have an aggregate light transmitting area of not less than 3% the floor area of the room; or (iii) a proportional combination of windows and roof lights required by (i) and (ii). (b) A required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must be not less than a horizontal distance from that boundary or wall that is the greater of – (c) 1m; and (d) 50% of the square root of the exterior height of the wall in which the window is located, measured from its sill.	Natural light is considered to be provided to each of the general purpose class rooms due to the provision of doorways and windows being provided to each of the class rooms. It would generally be considered that the number of openings would provide more than 10% of the floor areas of this clause. This will be confirmed via window schedules or architect confirmation.	CRA – Refer Annexure F
F4.3: Natural light borrowed from adjoining room	N/A	Each of the general purpose classrooms are generally considered to be provide with direct natural light based on the openings provided within the room.	Noted
F4.4: Artificial Lighting	Lighting to all areas is to comply with AS/NZS 1680.0:2009.	Lighting is required to be provided in accordance with this clause	CRA – Refer Annexure F

Section F: Health and Amenity			
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.	Ventilation to the rooms must be provided in accordance with this clause.	CRA – Refer Annexure F
F4.6: Natural ventilation	Noted	Based on the services documentation it is noted that the building will be provided with mechanical ventilation.	Noted
F4.7: Ventilation borrowed from adjoining room	Noted	Based on the services documentation it is noted that the building will be provided with mechanical ventilation.	Noted
F4.8: Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a – > kitchen or pantry > public dining room or restaurant > dormitory in a Class 3 building > room used for public assembly (which is not an early childhood centre, primary school or open spectator stand) > workplace normally occupied by more than one person.	Each of the sanitary compartments provided throughout the buildings are noted to be suitably located	CRA – Refer Annexure F
F4.9: Airlocks	Noted	Sanitary compartments are considered to be suitably located in accordance with F4.8.	Noted
F4.11: Carparks	N/A	Clause is not applicable due to the building classification	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	It is considered that there would be no commercial cooking facilities provided.	N/A

Section F: Health and Amenity			
	○ a total gas power input exceeding 29 MJ/h; or > the total maximum power input to more than one apparatus exceeds: ○ 0.5 kW electrical power; or ○ 1.8 MJ gas, Per m2 of floor area of the room or enclosure.		
Part F5 – Sound Transmission and Insulation			
F5.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F5.1: Application of Part	N/A	Clause is not applicable due to the building classification	N/A
Part F6 – Condensation Management			
F6.0: Deemed-to-satisfy provisions	Informational	Noted	Noted
F6.1: Application of Part	N/A	Clause is not applicable due to the building classification	N/A

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

Section J: Energy Efficiency
Refer to separate Section J Report for an assessment on this part

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.

Sole-occupancy unit

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

(a) a dwelling; or

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

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

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

ANNEXURE F BCA COMPLIANCE SPECIFICATION

Annexure F – BCA Compliance Specification

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

Architectural Design Certification

1. The FRL's of building elements for the proposed works have been designed in accordance with Table 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. Any main switch room sustaining emergency equipment required to operate in emergency mode, will be separated from the remaining building with construction having an FRL 120/120/120 and provided with self-closing -/120/130 fire doors in accordance with Clause C2.13 of BCA2019.
7. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C3.2 of BCA2019 or protected in accordance with Clause C3.4 of BCA2019.
8. Services penetrating elements required to possess an FRL including the floor slabs, walls, shafts, etc. will be protected in accordance with Clause C3.12, C3.13 and C3.15 and Specification C3.15 of BCA2019.
9. Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation will be protected in accordance with BCA Clause C3.16.
10. 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.
11. 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.
12. 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.
13. Fire shutters and fire windows will be in accordance with Specification C3.4 of BCA2019.
14. The number of exits provided to the building will be in accordance with Clause D1.2 of BCA2019.
15. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
16. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
17. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.

18. The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2019 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
19. The enclosing walls and ceiling under the non-fire-isolated stairway 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.
20. 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.
21. 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.
22. 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.
23. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
24. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
25. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
26. Window protection for 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.
27. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.
28. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2:2012.
29. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
30. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
31. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS 3740:2010.
32. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
33. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F1.11 of BCA2019.
34. Sub-floor ventilation will be provided in accordance with Clause F1.12 of BCA2019.
35. 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.
36. Sanitary facilities will be provided in the building in accordance with Clause F2.3 and Table F2.3 of BCA2019.
37. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.
38. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
39. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.

40. Water closets and urinals will be located in accordance with Clause F4.8 of BCA2019.
41. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
42. Essential fire or other safety measures must be maintained and certified on an ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2000.
43. Building Fabric and Thermal Construction will be in accordance with Part J1 of BCA2019.
44. Glazing will be in accordance with Part J1 of BCA2019.
45. Building sealing will be in accordance with Part J3 of BCA2019.
46. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2019.

Electrical Services Design Certification:

47. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
48. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
49. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.
50. Lighting power and controls will be installed in accordance with Part J6 of BCA2019.
51. Electrical conductors located within the building that supply a main switchboard that sustains emergency equipment will comply with Clause C2.13 of BCA2019.

Hydraulic Services Design Certification:

52. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
53. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS 2419.1:2005 as required.
54. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.
55. The heated water supply systems will be designed and installed to NCC Volume 3 – Plumbing code and Clause J7.2 of BCA2019.

Mechanical Services Design Certification:

56. 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.
57. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS 1668.2:2012.
58. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J5 of BCA2019
59. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

60. The material and forms of construction for the proposed works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2019 as follows:

a. Dead and Live Loads – AS/NZS 1170.1:2002
b. Wind Loads – AS/NZS 1170.2:2011
c. Earthquake actions – AS 1170.4:2007
d. Masonry – AS 3700:2018
e. Concrete Construction – AS 3600:2018
f. Steel Construction AS 4100:1998
g. Aluminium Construction – AS/NZS 1664.1 or 2:1997
h. Timber Construction – AS 1720.1:2010
i. ABCB Standard for Construction of Buildings in Flood Hazard Areas.

61. 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, including Table 5

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

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

Lift Services Design Certification:

64. 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.

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

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

66. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3.6 of BCA2019.

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