BCA LOGIC

Building Regulation, BCA,
Fire, Access and Energy Consultants

To:	Investec Australia Limited Level 23, Chifley Tower, 2 Chifley Square Sydney NSW 2000
Project:	Wickham Woolstore Development – Building 1
Report:	BCA Assessment Report – DA Version
Reference No:	107528-BCA-r1
Date:	3rd May 2017
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DOCUMENT CONTROL

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107528-BCA-r1	15/3/2017	Description:	Preliminary BCA Assessment Report		
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			Prepared By	Checked By	Approved By
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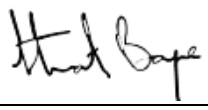
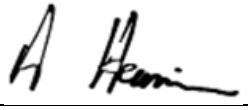
		Signature:			
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1 BASIS OF ASSESSMENT

1.1 Location and Description

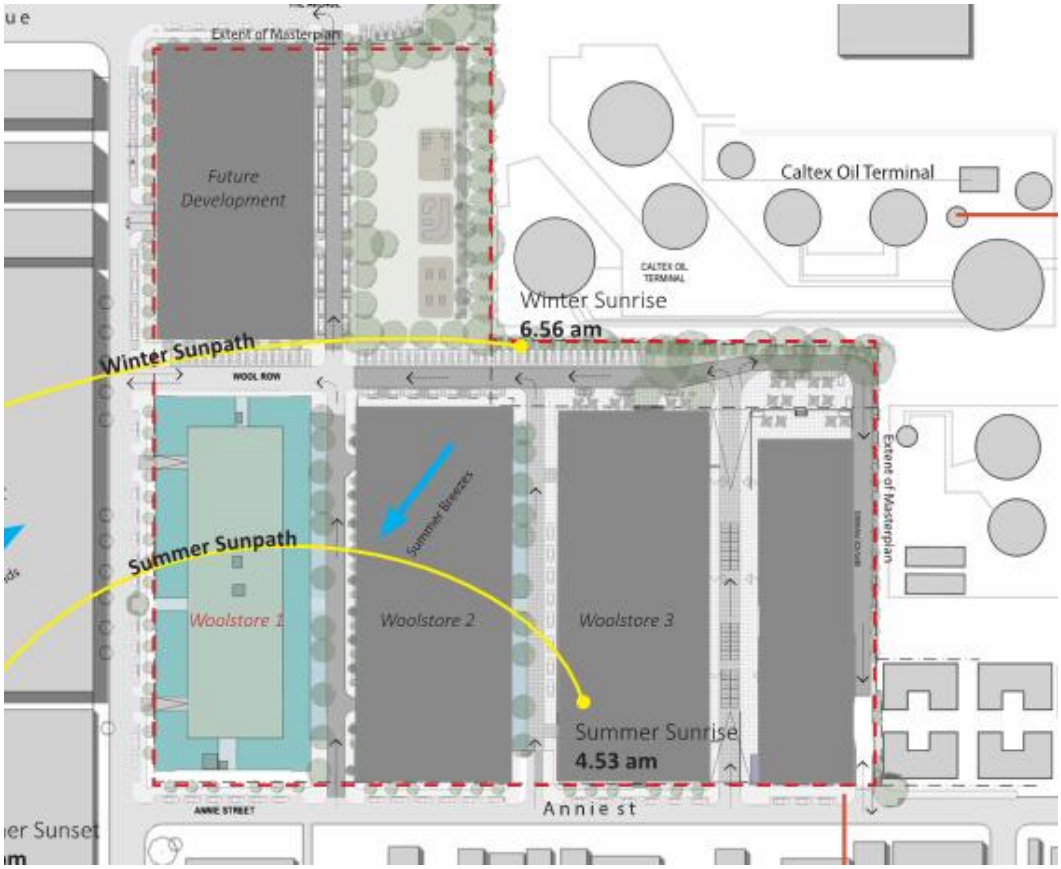
The building development, the subject of this report, is the change in use and internal alterations and additions of the existing Wickham Woolshed building located on the corner of Milford Street and Annie Street, Wickham.

The existing building will have an adaptive reuse as a residential apartment building with apartments at ground, first, second, third and fourth (mezzanine) levels and internal carparking at ground and first floor level.

The existing external masonry walls and internal timber beams, columns and timber floors are proposed to remain and the alterations of the building will ensure that existing heritage elements are retained. The Building 1 Woolstore is the first Stage in a Masterplan for the entire overall site which will be consolidated into the one single site. Each Building will be created as a Separate Strata Plan with Community Title areas being the common areas between the buildings located on the site.

Access to the Stage 1 development is via driveways leading from Milford Street to the ground floor level carpark.

Masterplan Site Plan showing Woolstore 1 location.



1.2 Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA 2016, 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 2016. 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, 2016 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 existing or proposed building;

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

(c) the design basis and/or operating capabilities of any existing or 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 provisions of Part D.3 and F2.4 of BCA2016;

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

(e) Work Healthy and Safety Act 2011;

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

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

1.5 Design Documentation

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

2 BUILDING DESCRIPTION

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

2.1 Rise in Storeys (Clause C1.2)

The proposed building has a rise in storeys of five (5). It is noted that the level 4 Mezzanine portion contains in some areas fully enclosed bedrooms thus is counted in the overall rise in storeys with this mezzanine level actually being defined as a storey within the terms of BCA2016.

2.2 Classification (Clause A3.2)

The building has been classified as follows.

Class	Level	Description
2	Part Ground (Level 1), Part Level 2, Level 3, 4 and Level 4 Mezzanine	Residential Sole Occupancy Units
7a	Part Ground (Level 1) and Part Level 2	Carparking

2.3 Effective Height (clause A1.1)

The building has an effective height of less than 25 metres however greater than 12 metres being circa 13.64m.

Note: The definition of the effective height of a building changed on 1 May 2016. Any Construction Certificate **submitted after this date** will need to comply with the new definition.

The BCA2016 definition is as follows:

"*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).*"

2.4 Type of Construction Required (Table C1.1)

The base building is required to be of Type A Construction.

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

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

Class 7a	The carpark is to be sprinkler protected and as such there are no maximum floor area or volume limitations for this area.
Class 2	The Class 2 portions of the building are not subject to floor area and volume limitations of C2.2 as Table 3 of Specifications C1.1 and Clause C3.11 of the BCA regulates the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 classifications.

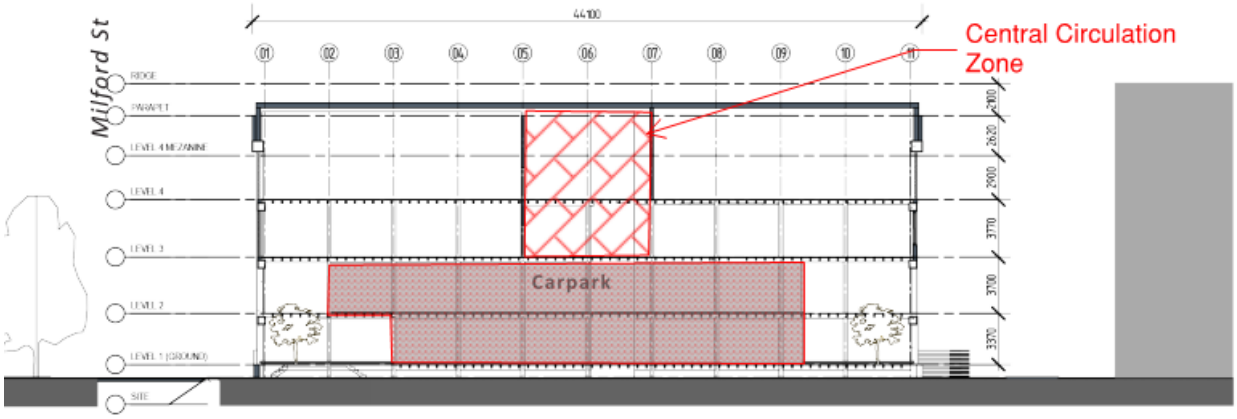
2.6 Fire Compartments

The following fire compartments have been assumed:

1. Carpark at ground and first floor level (connected by ramp)

2. Residential apartment building portions at Ground (Level 1) and Level 2 (due to separation by fire rated floors and walls to carpark portion), and

3. Residential portions at level 3 to Level 4 Mezzanine due to connection by internal Circulation zone as detailed below:



2.7 Exits

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

(a) South, central and northern fire isolated stairs to residential levels at all levels.

(b) Top riser of non fire isolated stair at level 4 northern end.

(c) External doorways to open space at ground floor level.

2.8 Climate Zone (Clause A1.1)

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 adjoining building located on subject site that is greater than 6.0m, clear of the northern wall

South: Far side of roadway adjoining the allotment being Annie Street

East: The adjacent Woolstore 2 building that is greater than 6.0m clear of the eastern wall

West: Far side of roadway adjoining the allotment being Milford Street

3 ESSENTIAL FIRE SAFETY MEASURES

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

Item	Proposed Essential Fire Safety Measure	Minimum Standard of Performance
1.	Access panels, doors and hoppers to fire resisting shafts	BCA2016 Clause C3.13
2.	Automatic fail safe devices	BCA2016 Clauses D2.21, AS1670.1-2015 and Manufacturer's Specification.
3.	Automatic fire detection and alarm system	BCA2016 Clause E2.2a, Clause 3, 4, 6 of Specification E2.2a and AS1670.1-2015 except where modified by proposed future fire engineering report
4.	Automatic fire suppression system (sprinkler system)	BCA2016 Clause E1.5, AS2118.1-1999
5.	Emergency lighting	BCA2016 Clauses E4.2 & E4.4, AS2293.1-2005
6.	Exit signs	BCA2016 Clauses E4.5, E4.6 & E4.8, AS2293.1-2005
7.	Fire dampers	BCA2016 Specification C3.15, AS/NZS1668.1-2015, AS1682.1 & 2
8.	Fire doors	BCA2016 Specification C3.4, C3.5, C3.8, C3.10, C3.11, AS1905.1-2015
9.	Fire hose reel system (carpark portion only)	BCA2016 Clause E1.4, AS2441-2005
10.	Fire hydrant system	BCA2016 Clause E1.3, AS2419.1-2005
11.	Fire seals protecting openings in fire resisting components of the building	BCA2016 Clause C3.15 & Specification C3.15
12.	Lightweight Fire Rated Construction	BCA2016 Clause / Specification C1.8
13.	Mechanical air handling systems	BCA2016 Clause F4.5, F4.11, AS/NZ1668.2-2012
14.	Paths of travel, stairways, passageways or ramps	BCA2016 Section D & EP&A Regulation 2000 Clause 184 to 186, except where modified by proposed future fire engineering report
15.	Portable fire extinguishers	BCA2016 Clause E1.6, AS2444-2001
16.	Required (automatic) exit doors	BCA2016 Clause D2.19, AS1670.1-2015
17.	Warning and operational signs	BCA2016 Clause D2.23, EP&A Regulation 2000 Clause 183

18.	Additional Fire Engineering Issues to address: • Retention of timber framed construction via the use of sprinklers • Non Fire Isolated Stair connecting level 4 to level 3 without discharging at ground level • Distance between alternate exits to some residential levels exceed 45m – being in the order of 55m. • Lack of smoke separation of corridors / open walkway that exceed 40m in length. • Hydrant Booster Assembly will not possess the radiant heat protection as required by AS2419.1-2005 • Sprinkler Valve room may not have direct access to open space • Non Fire Isolated Stair connects levels 4 to 3 and does not discharge at ground level	Proposed future Fire Engineering Report to be prepared under separate cover

4 FIRE RESISTANCE LEVELS

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

Type A Construction

Item	Class 2	Class 7a
Loadbearing External Walls • Less than 1.5m to a fire source feature • 1.5 – less than 3m from a fire source feature; • 3m or more from a fire source feature	 90/90/90 90/60/60 90/60/30	 120/120/120 120/90/90 120/60/30
Non-Loadbearing External Walls • Less than 1.5m to a fire source feature • 1.5 – less than 3m from a fire source feature; • 3m or more from a fire source feature	 -/90/90 -/60/60 -/-/-	 -/120/120 -/90/90 -/-/-
External Columns • Loadbearing • Non-loadbearing	 90/-/- -/-/-	 120/-/- -/-/-
Common Walls & Fire Walls	90/90/90	120/120/120
Stair and Lift Shafts required to be fire-resisting • Loadbearing • Non-loadbearing	 90/90/90 -/90/90	 120/120/120 -/120/120
Internal walls bounding sole occupancy units • Loadbearing • Non-loadbearing	 90/90/90 -/60/60	 120/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: • Loadbearing • Non-loadbearing	 90/90/90 -/60/60	 120/-/- -/-/-
Ventilating, pipe, garbage and like shafts: • Loadbearing • Non-loadbearing	 90/90/90 -/90/90	 120/90/90 -/90/90
Other loadbearing internal walls, beams trusses and columns	90/-/-	120/-/-
Floors	90/90/90	120/120/120
Roofs[1]	90/60/30	120/60/30

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

5 MATTERS FOR FURTHER CONSIDERATION

5.1 General

Assessment of the Architectural design documentation against the Deemed-to Satisfy Provisions of the Building Code of Australia, 2016 (BCA) has revealed the following areas where compliance with the BCA may require further consideration and/or may involve assessment as Performance Based (Fire Engineered) Performance Solutions. Any Performance Solutions will be required to clearly indicate methodologies for achieving compliance with the relevant Performance Requirements.

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

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

5.2 Dimensions and Tolerances

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

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

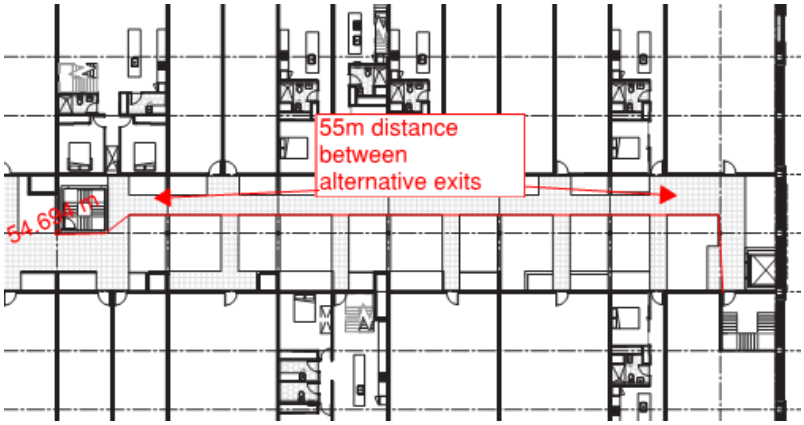
5.3 Performance Based Design – Performance Solutions

There are specific areas throughout the development where strict Deemed-to-Satisfy BCA Compliance will not be achieved by the proposed design and site constraints. These matters will need to be address in a detailed Fire Safety Engineering Report to be prepared for this development under separate cover. Additional items may be added to this list with the ongoing design development:

Item	Description of Performance Solution	DTS Provision
1.	Retention of existing exposed loadbearing combustible timber columns, beams and roof construction due to the sprinkler protection of building including penetrations of existing timber roof trusses penetrating through SOU fire separating walls.	Spec C1.1 of BCA2016
2.	Distance between alternate exits to level 3 and 4 residential levels exceed 45m – being in the worst case 55m	D1.5 of BCA2016
3.	Lack of smoke separation of corridors / open walkway that exceed 40m in length	C2.14 of BCA2016
4.	Hydrant Booster Assembly will not possess the radiant heat protection as required by AS2419.1-2005	E1.3 of BCA2-016 and AS2419.1-2005
5.	Sprinkler Valve room may not have direct access to open space	E1.5 of BCA2016 and AS2118.1-1999
6.	Natural light to Bedrooms at level 3 adjoining the central Circulation zone area	F4.1 and F4.3 of BCA2016
7.	Non Fire Isolated Stair connects levels 4 to 3 and does not discharge at ground level	D1.9 of BCA2016

1. **Distance between alternative exits – BCA Clause D1.5**

   The distance between alternative exits exceeds 45m (55m proposed). This matter will need to be considered as a Performance Solution at the Construction Certificate Stage.



2. **Walkways – BCA Clause C2.14**

   Public corridors at levels 3 & 4 that exceed 40 m in length must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Specification C2.5. The central void area over the level 3 and 4 portion is considered to connect two storeys as the central circulation void area will be fully fire separated from the level 4 mezzanine areas. As such there is an interpretation issue as to whether or not this central circulation area is a defined corridor or not.

   It is not physically possible to smoke separate the circulation area up into intervals of not greater than 40m thus this issue will need to be conservatively addressed as a Performance Solution at the Construction Certificate Stage.

3. **Fire Rating of existing Timber Structure – BCA Clause / Specification C1.1**

   The existing timber structure being the columns and floors will be retained as part of the repurposing of the development. As such the issue of fire rating the structure will need to be addressed as a Performance Solution at the Construction Certificate Stage. The proposed solution will be that the existing timber columns and beams will be retained as load bearing and a new concrete floor structure constructed on top of the existing timber flooring system such that in the event of a fire scenario, the existing timber floor will be essentially sacrificial and could collapse away without affecting the structural integrity of the new concrete flooring system.

   Further detailed assessment will be required with regards to the charring rates of the existing timber columns and beams that the new concrete flooring system will be structurally supported off.

4. **Fire Hydrants – BCA Clause E1.3**

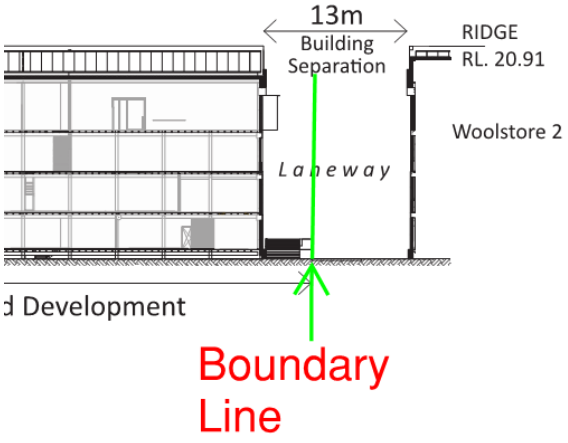
   The location of the fire hydrant booster being on the southern elevation is within sight of the main entrance in accordance with AS2419.1-2005, however radiant heat protection behind such booster is not proposed as part of the design. As such this issue will be addressed as a Performance Solution at the Construction Certificate Stage. The solution will be based on the draft requirements of AS2419.1-2016 that detail in a fully sprinkler protected building – radiant heat protection is not required to the Booster Assembly.

5. **Fire Sprinkler System – BCA Clause E1.5 and AS2118.1-1999**

   The location of the fire sprinkler valve room has not at this stage been documented. The provisions of E1.5 of BCA2016 and AS2118.1-1999 require such sprinkler valve room to have direct access to open space – as such this location may require assessment as a Performance Solution at the Construction Certificate Stage depending on its final location.

5.4 BCA Discussion Issues

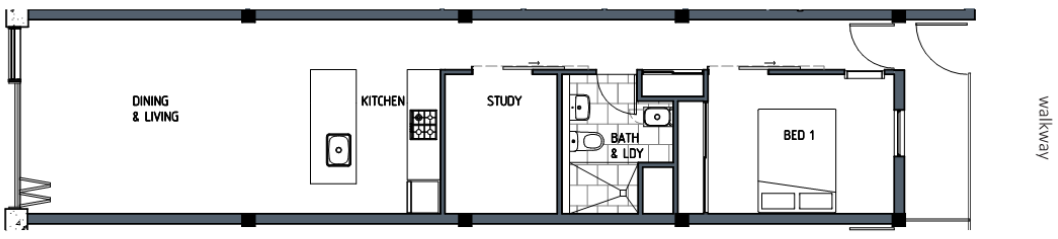
1. **Exit to open space**
   The level 1 units to the eastern elevation have the ability to egress to the laneway (rather than back through the carpark). However, unless the laneway is a dedicated road then an exit/egress path to this location would not technically comply with the provisions of the BCA2016. To address this issue – we have been advised that the overall site will be consolidated into one Allotment and each Building will be created as a separate Strata Plan with Community Space in between each building. This will resolve the egress issue across another allotment of land that currently exists.

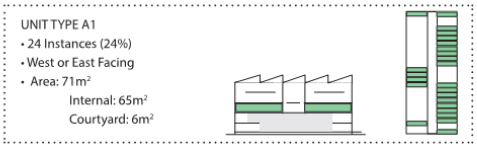


2. **Staff/Maintenance Sanitary Facility – BCA Clause F2.1**
   Where 10 or more sole occupancy units are provided an employee facility that incorporates a washbasin and closet pan is required at or near ground floor level. The facility must be an accessible unisex toilet facility, compliant with AS 1428.1-2009. Detailed location of facility to be assessed at Construction Certificate stage

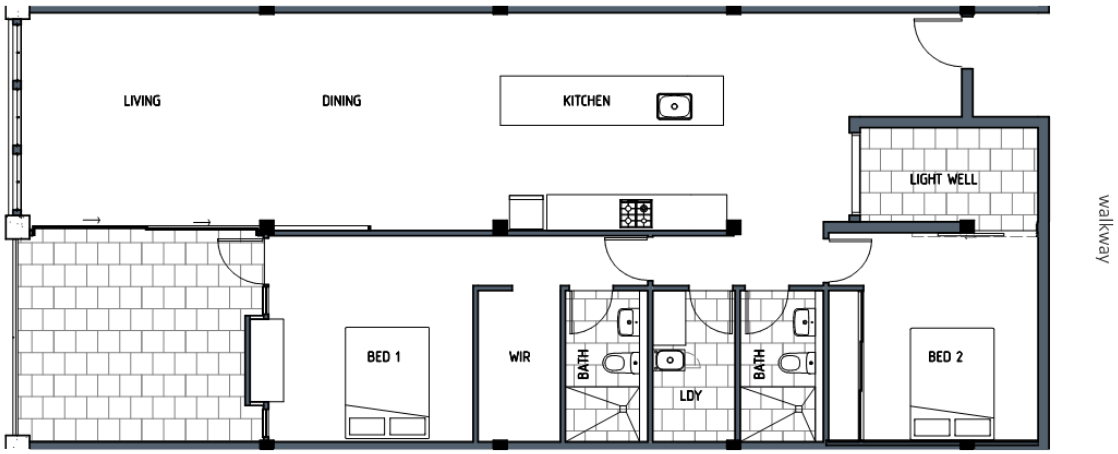
3. **Light and Ventilation – BCA Clause F4.1 & F4.6**
   Generally, all habitable rooms at levels 1, 2 and most of level 3 have direct access to natural light and ventilation either via direct light and ventilation or borrowed light and ventilation. Of particular note is the natural light and ventilation provisions to the level 3, 4 and Level 4 Mezzanine portions.

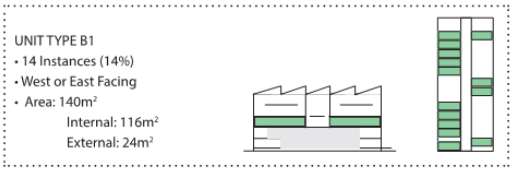
   Essentially the level 3 portions that have bedrooms facing the central circulation / corridor area will have either windows that will need to be suitably fire rated to achieve a -/60/- FRL to satisfy C3.11 of BCA2016. The natural light to these areas being borrowed light will need to be assessed as a Performance Solution Assessment at the Construction Certificate Stage. The ventilation to these rooms will need to be mechanically ventilated as such bedrooms will not have access to natural ventilation means.



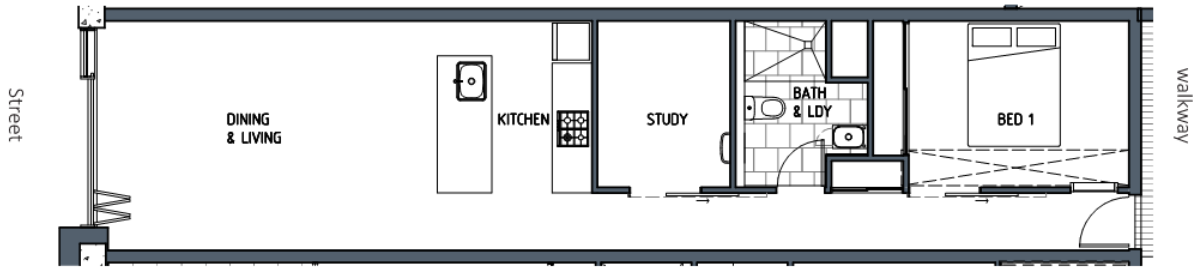


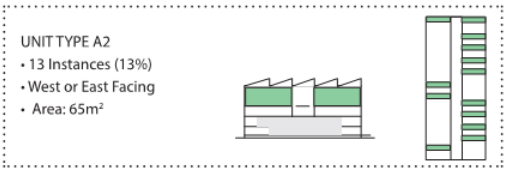
Other situations at level 3 include the creation of light wells down through the building to serve the rear bedrooms as per below:



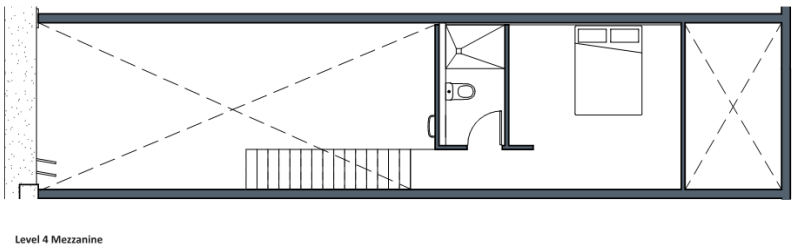


The natural light and ventilation to the level 4 bedrooms that adjoin the central circulation area will be served via light shafts and over the internal unit corridor from the above south facing sawtooth roof windows.



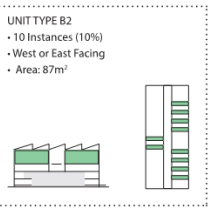


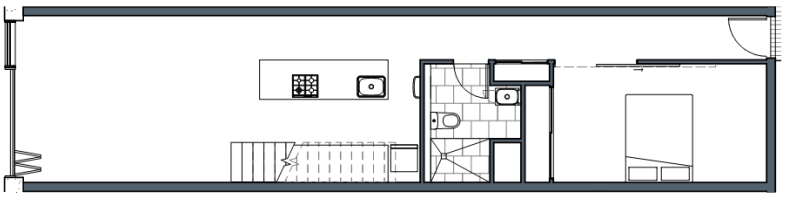
The level 4 mezzanine bedrooms will also be gaining their natural light from the south facing sawtooth roof windows.



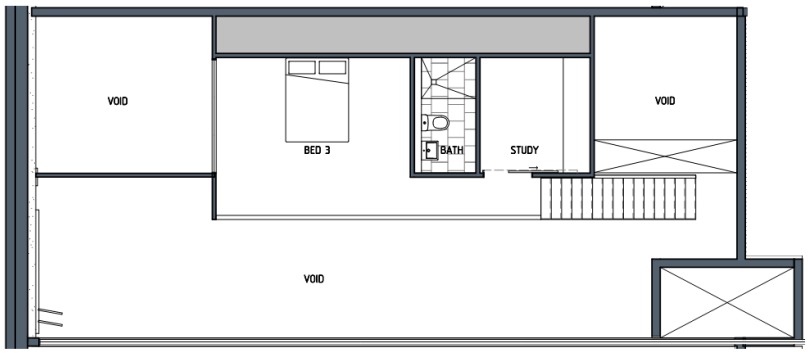
Level 4 Mezzanine

UNIT TYPE B2
- 10 Instances (10%)
- West or East Facing
- Area: 87m²



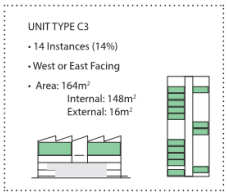


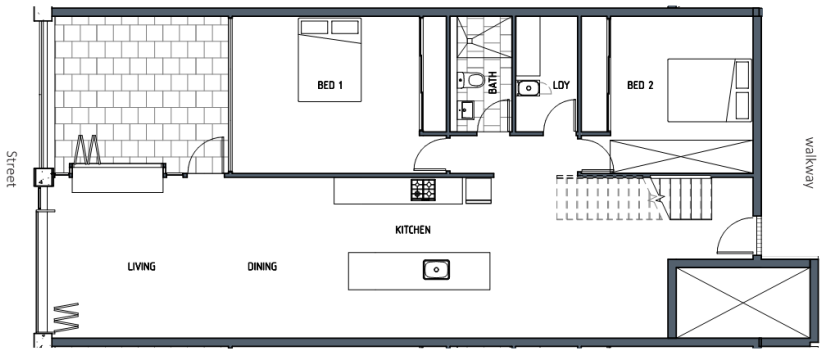
Level 4



Level 4 Mezzanine

UNIT TYPE C3
- 14 Instances (14%)
- West or East Facing
- Area: 164m²
  Internal: 148m²
  External: 16m²





Level 4

At the Construction Certificate stage a detailed assessment of the natural light and ventilation provisions will be required for each SOU.

6 STATEMENT OF COMPLIANCE

The architectural design documentation as referred to in this report has been assessed against the applicable provision of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying (as outlined in Annexure B) with that Code subject to ongoing design development and the issues identified in Part 5.3 and 5.4 being addressed at the Construction Certificate Stage.

ANNEXURE A - DESIGN DOCUMENTATION

This report has been based on the following design documentation.

Architectural Plans Prepared by Fairweather Jemmott (DA Package)		
Drawing Number	**Revision**	**Title**
1	-	Development Review
2	-	Site Analysis
3	-	Site Elevation
4	-	Site Context
5	-	Existing Level 1 Plan
6	-	Existing Level 2 Plan
7	-	Existing Level 3 Plan
8	-	Existing Level 4 Plan
9	-	Existing Elevations
10	-	Existing Elevations
11	-	Proposed Level 1 Plan
12	-	Proposed Level 2 Plan
13	-	Proposed Level 3 Plan
14	-	Proposed Level 4 Plan
15	-	Proposed Level 4 Mezzanine Plan
16	-	Proposed Roof Plan
17	-	Proposed Sections
18	-	Proposed Elevations
19	-	Proposed Elevations
20	-	Apartment Layouts
21	-	Apartment Layouts
22	-	Apartment Layouts
23	-	Apartment Layouts
23	-	Apartment Layouts
24	-	Apartment Layouts
25	-	Apartment Layouts
26	-	Apartment Layouts
27	-	Precedents
28	-	Precedents
29	-	Precedents
30	-	Precedents

ANNEXURE B - DETAILED BCA 2016 ASSESSMENT

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

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

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

N/A	Not Applicable. The Deemed-to-Satisfy clause is not applicable to the proposed design.
Complies	The relevant provisions of the Deemed-to-Satisfy clause have been satisfied by the proposed design.
CRA	'COMPLIANCE READILY ACHIEVABLE'. It is considered that there was not enough information included in the documentation to accurately determine strict compliance with the individual clause requirements. However, subject to noting the requirements of each clause, compliance can be readily achieved.
FI	Further Information is necessary to determine the compliance potential of the building design.
PS	Performance Solution with respect to this Deemed-to-Satisfy Provision is necessary to satisfy the relevant Performance Requirements.
DNC	Does Not Comply.
Noted	BCA Clause simply provides a statement not requiring specific design comment or confirmation.
Base Building	No change to existing base building – existing level of compliance assumed adequate

DEEMED TO SATISFY CLAUSE ASSESSMENT

Clause	Comment	Status
SECTION B: STRUCTURE		
PART B1 – STRUCTURAL PROVISIONS		
B1.0: Deemed-to-Satisfy Provisions	Informational	Noted
B1.1: Resistance to actions	Structural Engineer to certify compliance with this clause at CC stage.	CRA – Refer Annexure C
B1.2: Determination of individual actions	Structural Engineer to certify compliance with this clause at CC stage.	CRA – Refer Annexure C
B1.4: Determination of structural resistance of materials and forms of construction	Structural Engineer, Architect and Manufacturers to certify at CC stage. It is noted that the base building structure is proposed to be upgraded from an earthquake loading compliance point of view	CRA – Refer Annexure C
B1.5 Structural software	Structural Engineer to certify compliance with this clause at CC stage.	CRA – Refer Annexure C
B1.6 Construction of buildings in flood hazard areas	A Class 2, in a flood hazard area (refer to Council maps) must comply the ABCB Standard for Construction of Buildings in Flood Hazard Areas.	CRA – Refer Annexure C
SECTION C: FIRE RESISTANCE		
PART C1 – FIRE RESISTANCE AND STABILITY		
C1.0: Deemed-to-Satisfy Provisions	Informational	Noted
C1.1: Type of construction required	The building is required to be of Type A Construction.	Noted
C1.2: Calculation of rise in storeys	The building has a rise in storeys of five (5) Note: Level 4 mezzanine is considered to be a defined storey.	Noted
C1.3: Buildings of multiple classification	Informational	Noted
C1.4: Mixed Types of construction	The building is to be a single Type of Construction being Type A	Noted
C1.5: Two Storey Class 2, 3 or 9c buildings	N/A	N/A
C1.6: Class 4 Parts of building	N/A	N/A
C1.7: Open spectator stands and indoor sports stadium	N/A	N/A
C1.8: Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8. This will be critical in achieving the fire separation requirements of the existing Timber farmed building as part of the detailed fire engineering assessment.	CRA – Refer Annexure C
C1.10: Fire hazard properties	Fire hazard properties must comply with C1.10 of the BCA and Specification C1.10 for floor, wall and ceiling linings, air-handling ductwork, lift cars, insulation, sarking-type materials and attachments, or be considered non-combustible.	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
C1.11: Performance of external walls in fire	N/A	N/A
C1.12: Non-combustible materials	The following materials, though *combustible* or containing *combustible* fibres, may be used wherever a *non-combustible* material is *required*: (a) Plasterboard. (b) Perforated gypsum lath with a normal paper finish. (c) Fibrous-plaster sheet. (d) Fibre-reinforced cement sheeting. (e) 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. (f) Bonded laminated materials where— (i) each laminate is *non-combustible*; and (ii) each adhesive layer does not exceed 1 mm in thickness; and (iii) the total thickness of the adhesive layers does not exceed 2 mm; and (iv) the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the laminated material as a whole does not exceed 0 and 3 respectively.	Noted
C1.13: Fire-protected timber: Concession	*Fire-protected timber* building may be constructed in accordance with this clause with the building is existing being of masonry external walls with timber internal floors, columns and beams – the fire rating of the existing timber structure will be subject to a detailed fire engineering assessment at the CC stage.	PS Refer Part 5.3 of Report
PART C2 – COMPARTMENT AND SEPARATION		
C2.0: Deemed-to-Satisfy Provisions	Informational	Noted
C2.1: Application of Part	Informational - C2.2, C2.3 and C2.4 do not apply to a carpark provided with a sprinkler system complying with Specification E1.5, an open-deck carpark or an open spectator stand.	Noted
C2.2: General floor area and volume limitations	The floor area of each level is approx. 4638m^2. However, the requirements of this clause do not apply as the carpark portion and for that matter the whole building will be sprinkler protected as per BCA Spec E1.5 and the remainder of the building is class 2 residential with bounding construction.	N/A
C2.3: Large isolated buildings	N/A	N/A
C2.4: Requirements for open spaces and vehicular access	N/A	N/A
C2.5: Class 9a and 9c Buildings	N/A	N/A
C2.6: Vertical separation of openings in external walls	Due to the presence of existing timber structural elements it is proposed to sprinkler protect the entire building and therefore, the spandrel separation requirements under this clause do not apply.	N/A
C2.7: Separation by fire walls	• **Construction -** A fire wall must be constructed in accordance with the following:	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	– Any openings in a fire wall must not reduce the FRL required by Specification C1.1 for the fire wall, except where permitted by the Deemed-to-Satisfy Provisions of Part C3. – Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire resisting performance of the fire wall is maintained. • **Separation of fire compartments –** A part of a building separated from the remainder of the building by a fire wall may be treated as a separate fire compartment if it is constructed in accordance with this clause and the fire wall extends to the underside of – – a floor having an FRL required for a fire wall; or – the roof covering. The only fire separating walls will be those separating the carpark portion from the residential portions.	
C2.8: Separation of classifications in the same storey	Where a storey has different classifications located alongside one another: • each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; or • the parts must be separated in that storey by a fire wall having the higher FRL prescribed in Table 3; or • where one part is a carpark complying with Table 3.9 of Specification C1.1, the parts may be separated by a fire wall complying with the appropriate Table. To summarise the above, there is a concession to allow the wall separating the class 7a carpark and the residential areas with a fire wall with a reduced FRL of 60/60/60 (if non-loadbearing) and FRL90/90/90 (if loadbearing). This will need to be further assessed within proposed Fire Engineering Report for the use of existing timber columns/beams.	CRA – Refer Annexure C
C2.9: Separation of classifications in different storeys	Floors separating storeys of different classifications must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey which includes FRL90/90/90 to residential areas and typically FRL 120/120/120 to carpark but a concession under table 3.9 of Spec C1.1 applies to reduce the FRL to carpark to FRL60/60/60. This will need to be further assessed within proposed Fire Engineering Report for the use of existing timber columns/beams.	CRA – Refer Annexure C
C2.10: Separation of lift shafts	Passenger lifts must be separated from the remainder of the building by enclosure in a fire rated shaft achieving an FRL prescribed by Table 3 of Specification C1.1.	CRA – Refer Annexure C

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	The lifts appear to be detailed in separate shafts as required with these new shafts being of concrete construction as required which will be used in part for the structural strengthening of the building and Earthquake loading upgrade.	
C2.11: Stairways and lifts in one shaft	Stairways and lift are detailed in separate shafts as required. It is noted all stairs to the development will be new stairs.	Complies
C2.12: Separation of equipment	Any of the following equipment located in the building must be separated from the remainder of the building: • lift motors and lift control panels; or • emergency generators used to sustain emergency equipment operating in the emergency mode; or • central smoke control plant; or • boilers; or • a battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours. Equipment need not be separated in if the equipment comprises: • smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or • stair pressurizing equipment installed in compliance with the relevant provisions of AS/NZS 1668.1; or • a lift installation without a machine room; or • equipment otherwise adequately separated from the remainder of the building. Separation must be by construction having an FRL as required by Specification C1.1, but not less than FRL 120/120/120 with openings protected by self-closing fire doors having an FRL of not less than –/120/30. Separation of on-site fire pumps must comply with the requirements of AS 2419.1-2005.	CRA – Refer Annexure C
C2.13: Electricity supply system	• Any electrical substation located within the building must be separated from the remainder of the building by construction having an FRL of not less than 120/120/120, and doorways protected with self-closing fire doors having an FRL of not less than –/120/30. • A main switchboard which sustains emergency equipment operating in the emergency mode must be fire separated from any other part of the building by construction having an FRL of not less than 120/120/120 and have the doorway fitted with self-closing fire door having an FRL of not less than –/120/30. • Any electrical conductors located within the building that supply a substation or main switchboard for emergency equipment must comply with BCA clause C2.13. • Emergency equipment switchgear must be separated from non-emergency equipment	CRA – Refer Annexure C

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	switchgear by metal partitions designed to minimize the spread of a fault from the non-emergency equipment switchgear. Emergency equipment includes but is not limited to the following: – fire hydrant booster pumps; – sprinkler pumps; – hose reel pumps; – 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. No details at this stage of any internal substations or the location of the main switch room.	
C2.14: Public corridors in Class 2 and 3 Buildings	Public corridors in Class 2 parts that exceed 40 m in length must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Specification C2.5. The only corridors are considered to be those at levels 3 and 4 being the central circulation zone. The smoke separation of this portion will be physically impossible to achieve, thus this matter will need to be assessed as part of a Performance Solution at the CC stage	PS Refer to Part 5.3 of Report
PART C3 – PROTECTION OF OPENINGS		
C3.0: Deemed-to-Satisfy Provisions	Informational	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 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 mm^2 in face area and is spaced not less than 2 m from any other ventilator in the same wall; and (iii) Openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like; and (iv) In a carpark– (A) Service penetrations through; and (B) Openings formed by a vehicle ramp in, 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-	Noted

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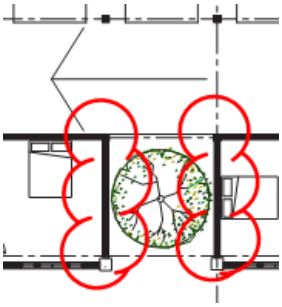
	Satisfy Provisions of Sections C, D and E. (b) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings in building elements required to be fire-resisting (including doorways, windows including any associated fanlight), infill panels and fixed or openable glazed areas that do not have 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	The external wall of the building to the eastern elevation is more than 3 metres to the boundary at the laneway between building 1 & 2. And more than 6 metres distance is between buildings 1 & 2. To the north of the site the property boundary is proposed to extend to the far side of the proposed communal area which is more than 3 metres from the northern elevation. Therefore, no protection of openings is required. It is also noted that the entire site will be consolidated into one allotment as part of the Masterplan process. This will the result in all fire source features being greater than 6.0m from the external walls of the subject building.	N/A
C3.3: Separation of external walls and associated openings in different fire compartments	The only external walls of fire compartments that are exposed to each other are the external walls to units that are adjacent to the breezeways at level 1 & 2. These external walls would require FRL60/60/60 due to proximity to carpark openings. To be further assessed with design development at CC stage. 	CRA – Refer Annexure C
C3.4: Acceptable methods of protection	At this stage there is no protection required to openings, other than possibly those detailed in C3.3 above. Where protection is required, openings must be protected as follows: <u>Doorways:</u> (i) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or (ii) –/60/30 fire doors that are self-closing.	CRA – Refer Annexure C

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	Windows: (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. Other openings: (i) Excluding voids – internal or external wall-wetting sprinklers; or (ii) Construction having an FRL not less than –/60/– Fire doors, fire windows and fire shutters must comply with BCA Specification C3.4.	
C3.5: Doorways in fire walls	Doorways in the fire walls must be protected by a self-closing fire door that achieves an FRL of not less than that required by Specification C1.1 for the fire wall except that each door must have an insulation level of at least 30.	CRA – Refer Annexure C
C3.6: Sliding fire doors	There are no sliding fire doors proposed at this stage	N/A
C3.7: Protection of doorways in horizontal exits	There are no required horizontal exits proposed or required at this stage. Fire walls/doors to the carpark at level 2 could be utilised but aren't required as exit travel distance complies to the exits located in the residential parts.	N/A
C3.8: Openings in fire-isolated exits	Doorways that open to fire-isolated stairways, fire-isolated passageways or fire-isolated ramps, and are not doorways opening to a road or open space, must be protected by –/60/30 fire doors that are self-closing, or automatic-closing in accordance with (ii) and (iii) of Clause C3.8. It is noted that all fire isolated stairs will be new fire isolated stairs.	CRA – Refer Annexure C
C3.9: Service penetrations in fire-isolated exits	The fire isolated exits are not to be penetrated by any services **other** than: • electrical wiring associated with: – a lighting, detection, or pressurization system serving the exit; or – a security, surveillance or management system serving the exit; or – an intercommunication system or an audible or visual alarm system in accordance with D2.22; or – the monitoring of hydrant or sprinkler isolating valves. • ducting associated with a pressurisation system if it; (i) is constructed of material having an FRL of not less than –/120/60 where it passes through any other part of the building; and (ii) does not open into any other part of the building; or	CRA – Refer Annexure C

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	• water supply pipes for fire services.	
C3.10: Openings in fire-isolated lift shafts	• Lift landing doors are required to be fire doors with an FRL of -/60/- that comply with AS 1735.11-1986, and be set to remain closed except when discharging or receiving, passengers, goods or vehicles. • Panels in the wall of the lift shaft must be backed by construction having an FRL of not less than –/60/60 if it exceeds 35 000 mm^2 in area.	CRA – Refer Annexure C
C3.11: Bounding Construction: Class 2, 3 and 4 Buildings	The doorways between sole occupancy units and the public lobbies and any common / service rooms and the public lobbies (class 2 parts) must be protected by self–closing -/60/30 fire doors. There are also windows at level 3 that will adjoin the central circulation void area that will need to be installed as -/60/- windows.	CRA – Refer Annexure C
C3.12: Openings in floors and ceilings for services	Where services pass through a floor which is required to achieve an FRL or a ceiling required to have a resistance to the incipient spread of fire, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15.	CRA – Refer Annexure C
C3.13: Openings in shafts	Openings in shafts must be protected by: a) if it is in a sanitary compartment – a door or panel which together with its frame, is non-combustible or has an FRL of not less than –/30/30; or b) a self-closing –/60/30 fire door or hopper; or c) an access panel having an FRL of not less than –/60/30; or d) if the shaft is a garbage shaft – a door or hopper of non-combustible construction.	CRA – Refer Annexure C
C3.15: Openings for service installations	Where services pass through an element which is required to achieve a 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.	CRA – Refer Annexure C
C3.16: Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL.	CRA – Refer Annexure C
C3.17: Columns protected with lightweight construction to achieve an FRL	A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire. The existing timber columns and beams will be included in detailed fire engineering assessment at the CC stage	CRA – Refer Annexure C
SPECIFICATION C.1.1 – FIRE-RESISTING CONSTRUCTION		
2.0: General Requirements	Informational	Noted

SECTION C: FIRE RESISTANCE			
2.1:	Exposure to fire-source features	A building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that– (i) has an FRL of not less than 30/–/–; and (ii) is neither transparent nor translucent. With the future lot consolidation, all fire source features will be greater than 6.0m clear of the external walls of the subject building.	Noted
2.2:	Fire protection for a support of another part	Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL not less than that required by other provisions of this Specification; and if located within the same fire compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	CRA – Refer Annexure C
2.3:	Lintels	A lintel must have the FRL required for the part of the building in which it is situated unless it does not contribute to the support of a fire door, fire window or fire shutter and meets the requirements of Spec C1.1 clause 2.3 (a) & (b). Existing lintels in the external masonry walls will need to be upgraded as part of the concrete restoration works	CRA – Refer Annexure C
2.4:	Attachments not to impair fire-resistance	Where a combustible material is used as a finish or lining to a wall or roof, or sunscreen, or awning, to a building element required to have an FRL– • the material must be exempted under C1.10 or comply with the fire hazard properties prescribed under C1.10; and • the material must not be located near or directly above a required exit so as to make the exit unusable in a fire; and • the material must not otherwise constitute an undue risk of fire spread via the façade of the building or compromise egress from the building. Note: The above includes any aluminium panels which, where containing plastic strengthening elements, would be considered combustible. Where aluminium composite panels are proposed as an attachment to a fire rated element, the panels and their location must comply with the above. Details, including fire hazard properties of the panels are to be provided for review. It is likely that Aluminium Composite Panels if used will need to be the subject of an Alternate Solution Report. The current elevations do not detail any combustible attachments – to be further assessed at CC stage.	CRA – Refer Annexure C
2.5:	General concessions	There are no concessions that apply	N/A
2.6:	Mezzanine floors: Concession	No details at this stage but it is likely that due to internal walls that the upper level 4 mezzanine is not considered to be a true mezzanine under this clause	N/A

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2.7:	Enclosure of shafts	Fire-isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction having an FRL required for the walls of a non-load-bearing shaft in the same building, as per specification C1.1. This fire rating is required in two directions. The above does not apply to shafts extending beyond the roof covering, other than fire isolated stair and lift shafts and the bottom of non-combustible shafts laid directly on the ground. Note: Garbage chutes which are contained within fire resistant shafts through the building will discharge into a garbage room. As it is difficult to fire rate the bottom of the garbage chute, the garbage room becomes an extension of the fire-resistant shaft and therefore must have walls with an FRL of a non-loadbearing shaft in the same building and doorways protected as per C3.13.	CRA – Refer Annexure C
2.8:	Carparks in Class 2 and 3 Buildings	The building contains more than 4 storeys thus concession under this clause does not apply	N/A
2.9:	Residential Aged Care building: Concession	N/A	N/A
3.0:	Type A fire-resisting construction	Noted	-
3.1:	Fire-resistance of building elements	• The FRL's of all elements are to be in accordance with the FRL's detailed in the Table contained within Part 4.0 of this report. As existing timber, framed construction is to be retained then this will need to be addressed via Fire Engineering Report • External walls, common walls and the flooring and floor framing of lift pits must be non-combustible which being of masonry would meet this criteria; and • Internal walls required to be fire rated must extend to– (i) to the underside of the floor next above; or (ii) the underside of a roof complying with Table 3; or (iii) if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements; or (iv) a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes. Load bearing internal walls (including those part of a loadbearing shaft) and fire walls must be of concrete or masonry. As existing timber framed construction is to be retained then this will need to be addressed via Fire Engineering Report. Non-loadbearing internal walls required to be fire rated, as well as non-load bearing lift, ventilating, pipe, garbage or similar shaft wall must be of non-combustible	PS Refer to Part 5.3 of Report

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		construction. As existing timber framed construction is to be retained then this will need to be addressed via Fire Engineering Report. The intent is to retain the timber columns and beams exposed based on charring rate calculations and superimpose a concrete floor over the existing timber floor which would then become sacrificial in the event of a fire and the new concrete floors would be supported back to the existing timber beams and columns – further detailed assessment to be undertaken as the design progresses through to CC stage.	
3.2:	Concessions for floors	A floor need not comply with Table 3 if— (a) it is laid directly on the ground; or (b) it is within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building; or	Noted
3.3:	Floor Loading of Class 5 and 9b buildings: Concession	N/A	N/A
3.4:	Roof superimposed on concrete slab: Concession	N/A	N/A
3.5:	Roof: Concession	A roof need not comply with Table 3 if its covering is non-combustible and the building— a) has a sprinkler system complying with Specification E1.5 installed throughout; or b) is of Class 2 or 3; or	CRA – Refer Annexure C
3.6:	Roof flights	The roof is an existing sawtooth roof and does not contain any roof lights at this stage. The sawtooth windows are in the vertical plane and do not require protection as they are not defined as roof lights.	N/A
3.7:	Internal columns and walls: Concession	For a building with an *effective height* of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the *storey* immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and *internal walls* other than *fire walls* and *shaft* walls may have— (a) in a Class 2 or 3 building: FRL 60/60/60; or To be further assessed with design development	CRA – Refer Annexure C
3.8:	Open spectator stands and indoor sports stadiums concession	N/A	N/A
3.9:	Carparks	The proposed carpark will be sprinkler protected and forms part of the class 2 building so is granted the ability for a concession to reduced FRL's to 60 minutes in accordance with this clause. However, due to the retention of timber beams, columns and roof members then a fire engineering report is needed which may potentially reverse the reduced FRLs possible by this clause. To be further assessed with design development	CRA – Refer Annexure C
3.10:	Class 2 and 3 buildings Concession	N/A	N/A

SPECIFICATION C1.10 – FIRE HAZARD PROPERTIES			
1.	Scope	Informational	-
2.	Application	Informational	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 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.	CRA – Refer Annexure C
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.	CRA – Refer Annexure C
5.	Air-handling ductwork	Rigid and flexible ductwork in a Class 2 to 9 building must comply with the *fire hazard properties* set out in AS 4254 Parts 1 and 2.	CRA – Refer Annexure C
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.	CRA – Refer Annexure C
7.	Other materials	Materials and assemblies in a Class 2 to 9 building not included in Clauses 3, 4, 5 or 6 must not exceed the indices set out in Table 4.	CRA – Refer Annexure C
SPECIFICATION C3.4 – FIRE DOORS, SMOKE DOORS, FIRE WINDOWS AND SHUTTERS			
1.	Scope	Noted	-
2.	Fire doors	Fire door sets must comply with AS1905.1 and not fail by radiation through any glazed part during the period specified for integrity in the required FRL.	CRA – Refer Annexure C
3.	Smoke doors	No smoke doors required or proposed	N/A
4.	Fire shutters	No fie shutters required or proposed	N/A
5.	Fire windows	Fire window must be identical to the prototype which achieved the required FRL and be installed in the same manner and in an opening that is not larger than the tested prototype.	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
PART D1 – PROVISION FOR ESCAPE		
D1.0: Deemed-to-Satisfy Provisions	Informational	Noted
D1.1: Application of Part	The *Deemed-to-Satisfy Provisions* of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or a Class 4 part of a building.	Noted
D1.2: Number of exits required	There is a single stair to each level as required	Complies
D1.3: When fire-isolated stairways and ramps are required	Every exit stairway must be fire-isolated as the stairs serve a total of four (4) storeys. The stairs at this stage will be fire isolated stairs contained within new stair shafts. The only new stair that will not be fire isolated will be the northern stair connecting level 4 to 3 that will be assessed as a Performance Solution at CC stage.	Complies
D1.4: Exit travel distances	<u>Class 2 residential —</u> • The entrance doorway of each sole-occupancy unit must be not more than – – 6 m from an exit or from a point from which travel in different directions to 2 exits is available; or – 20 m from a single exit serving the storey at the level of egress to a road or open space; and • No point on the floor of a room which is not in a sole-occupancy unit must be more than 20 m from an exit or from a point at which travel in different directions to 2 exits is available. <u>Class 7a carpark—</u> No point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m. • no point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m; and • in a Class 5 or 6 building, the distance to a single exit serving a storey at the level of access to a road or open space may be increased to 30 m. There are some minor extended travel distances which will need to be addressed in a Performance Solution at the CC stage – refer Part 5.3 of Report.	PS Refer to Part 5.3 of Report
D1.5: Distance between alternative exits	The distance between alternate exits is less than 60 metres as required to carpark areas. To residential areas, the distance between alternate exits at levels 3 & 4 exceeds 45 metres with a distance of 55 metres measured. This issue will need to be assessed as a Performance Solution at the CC stage	PS Refer to Part 5.4 of Report

SECTION D: ACCESS AND EGRESS		
D1.6: Dimensions of exits and paths of travel to exits	The exit width provided by the three (3) stairs is adequate to serve the estimated populations under BCA Clause D1.13. In a required exit or path of travel to an exit– • the unobstructed height throughout exits and paths of travel to exits must not be less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and • the unobstructed width of each exit or path of travel to an exit, except for doorways must be not less than 1m; • the unobstructed width of doorways must be not less than 750 mm, unless providing access for people with disabilities in which case the unobstructed width must be not less than 850 mm. • the required width of a stairway or ramp must be measured clear of all obstructions such as handrails. • the unobstructed width of a required exit must not diminish in the direction of travel to a road or open space.	CRA – Refer Annexure C
D1.7: Travel via fire-isolated exits	• A doorway from a room must not open directly into a stairway that is required to be fire-isolated unless it is from – (i) a public corridor, public lobby or the like; or (ii) a sole-occupancy unit occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. • D1.7 (b) - Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (i) to a road or open space; or (ii) to a point— (A) in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and (B) from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or (iii) into a covered area that— (A) adjoins a road or open space; (B) and is open for at least 1/3 of its perimeter; and (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and	Complies

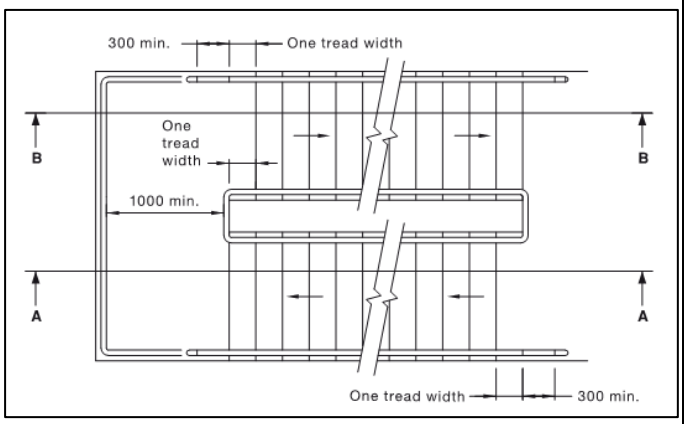
SECTION D: ACCESS AND EGRESS		
	(D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m. • D1.7 (c) - Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4, for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. The current fire isolated stair design is as required and discharges direct to a road or open space.	
D1.8: External stairways or ramps in lieu of fire-isolated exits	N/A	N/A
D1.9: Travel by non-fire-isolated stairways or ramps	At this stage, the only Non FIS is connecting the northern end of level 4 to 3. This stair does not strictly comply with this clause as the stair does not discharge at ground level, thus will need to be assessed under a Performance Solution at the CC stage	PS Refer to Part 5.3 of Report
D1.10: Discharge from exits	• Exits must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit. • If a required exit leads to open space, the path of travel to the road must have an unobstructed width of not less than 1m. min width of required exit if greater. • If an exit discharges to open space that is at a different level that the public road to which it is connected, the path of travel to the road must be by a ramp or other incline not steeper than 1:8, or a BCA compliant stairway. • The discharge points of alternative exits must be as far apart as practical	CRA – Refer Annexure C
D1.11: Horizontal exits	There are no required horizontal exits as exit travel distance can be reached without reliance upon fire walls to level 2.	N/A
D1.12: Non-required stairways, ramps or escalators	N/A	N/A
D1.13: Number of persons accommodated	Informational– Based on floor area and Table D1.13, the population numbers are as follows: Carpark – Not more than 200 persons assumed at any one time Residential Apartments – The maximum population would be at level 4 where there are 40 units x estimate of 6 persons/unit = 240 persons	CRA – Refer Annexure C
D1.14: Measurement of distances	Informational –	Noted

SECTION D: ACCESS AND EGRESS		
	The nearest part of an exit means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a horizontal exit, the nearest part of the doorway.	
D1.15: Method of Measurement	Informational	Noted
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	Informational – (a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a floor area of not more than 100 m^2; or (ii) all but one point of egress from a plant room, a lift machine room or a Class 8 electricity network substation with a floor area of not more than 200 m^2. (b) A ladder permitted under (a)— (i) may form part of an exit provided that in the case of a fire-isolated stairway it is contained within the shaft; or (ii) may discharge within a storey in which case it must be considered as forming part of the path of travel; and (iii) for a plant room must comply with AS 1657.	CRA – Refer Annexure C
D1.17: Access to lift pits	Access to the lift pit is assumed to be through the bottom landing doors as the pit is assumed to be less than 3m deep.	CRA – Refer Annexure C
PART D2 – CONSTRUCTION OF EXITS		
D2.0: Deemed-to-Satisfy Provisions	Informational	Noted
D2.1: Application of Part	Informational– Except for D2.13, D2.14(a), D2.16, D2.17(d), D2.17 (e), D2.18 & D2.24, the deemed-to-satisfy Provisions of this Part do not apply to internal parts of the Class 2 sole-occupancy units.	Noted
D2.2: Fire-isolated stairways and ramps	The fire isolated stairways must be constructed of non-combustible materials and constructed so that if there is local failure it will not cause structural damage to, or impair the fire-resistance of the shaft. These stairs are new stairs throughout.	CRA – Refer Annexure C
D2.3: Non-fire-isolated stairways and ramps	No details of construction of the non-fire isolated stairs – to be assessed with ongoing design documentation.	N/A
D2.4: Separation of rising and descending stair flights	There are no rising/descending stairs. The central fire isolated stairway discharges down through all levels and then access to open space is via a tunnel beneath level 1	N/A

SECTION D: ACCESS AND EGRESS		
D2.5: Open access ramps and balconies	To be further assessed with design development. The level 3 and 4 central circulation zone requires in some instances at level 4 occupants to pass by SOU entrance doorways and in some instances at level 3 there will be fire rated windows located within the SOU separating wall.	CRA – Refer Annexure C
D2.6: Smoke lobbies	There are no smoke lobbies required or detailed at this stage	N/A
D2.7: Installations in exits and paths of travel	• Access to service shafts and services other than to fire-fighting or detection equipment must not be provided from a fire-isolated stairway or fire-isolated passageway. • Gas or other fuel services must not be installed in a required exit. • Any electricity meters, distribution boards or ducts, or telecommunications distribution boards or equipment installed in corridors/hallways/lobbies or the like must be enclosed with non-combustible construction or a fire protective covering with doorways suitably sealed against smoke spread. • Electrical wiring may be installed in a fire-isolated exit if the wiring is associated with: – a lighting, detection, or pressurization system serving the exit; or – a security, surveillance or management system serving the exit; or – an intercommunication system or an audible or visual alarm system in accordance with D2.22; or – the monitoring of hydrant or sprinkler isolating valves.	CRA – Refer Annexure C
D2.8: Enclosure of space under stairs and ramps	The space under the fire-isolated stairways within the shaft must not be enclosed to form a cupboard or similar enclosed space. 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. To be further assessed with design development – currently there are no enclosures indicated beneath stairs.	CRA – Refer Annexure C
D2.9: Width of stairways and ramps	Informational– A *required* stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2 m.	Noted
D2.10: Pedestrian ramps	No details of gradients of access ramps shown on plans ramps at this stage.	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586.	
D2.11: Fire-isolated passageways	The enclosing construction of a fire isolated passageway must have an FRL not less than that required for the fire isolated stair.	CRA – Refer Annexure C
D2.12: Roof as open space	There is no roof as open space in this development.	CRA – Refer Annexure C
D2.13: Goings and risers	Stairways must comply with the following: • stairways must have not more than 18 and not less than 2 risers in each flight; • goings must be between 240 mm and 355 mm within the residential units; • goings must be between 250 mm and 355 mm; • goings must be between 250 mm and 355 mm in other areas; • risers must be between 115 mm high and 190 mm high; • the slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700; • the goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (R) are considered constant if the variation between– (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm. • 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 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.* All new stairs to achieve strict compliance with this clause.	CRA – Refer Annexure C

<table>
<tr><th colspan="3">SECTION D: ACCESS AND EGRESS</th></tr>
<tr><td>D2.14: Landings</td><td>Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586.
<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Condition</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr>
</table></td><td>CRA – Refer Annexure C</td></tr>
<tr><td>D2.15: Thresholds</td><td>The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless–
a) in a building required to be accessible, the doorway–
(i) opens to a road or open space; and
(ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1; 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.</td><td>CRA – Refer Annexure C</td></tr>
<tr><td>D2.16: Barriers to prevent falls</td><td>Balustrades must be provided to stairs and balconies, driveway ramps etc where there is a fall of more than 1m. Balustrades must comply with the following:
<u>Balustrade minimum heights</u>
• 865 mm above stair nosings;
• 865 mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length; and
• 1 m in all other locations.
<u>Balustrade openings – fire-isolated stairs</u>
• maximum openings of 300 mm; or
• where rails are used–
– a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and
– the opening between rails must not be more than 460 mm</td><td>CRA – Refer Annexure C</td></tr>
</table>

SECTION D: ACCESS AND EGRESS		
	Balustrade openings – other than fire-isolated stairs • 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 (including handrails to the fire stairs). • Handrails in common areas (other than fire stairs) must also accord with D3.3. Clause 12 of AS 1428.1-2009 A required exit (fire isolated or non-fire isolated) serving an area required to be accessible must be fitted with handrails in accordance with Clause 12 of AS1428.1. The handrail shall follow the angle of the nosings and be consistent height through the stair flight and any landings with no vertical sections at the landing. Compliance can be achieved via offset risers at the bottom of the flight in accordance with Figure 28 in AS1428.1-2009 or with larger landings to accommodate required handrail extensions.  *Figure 28 in AS1428.1-2009*	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	The current stairs design appear to be capable of accommodating the above handrail configuration	
D2.18: Fixed platforms, walkways stairways and ladders	Plant areas may be accessed via stairs and ladders compliant with AS 1657-2013. This also applies to mezzanine storerooms to level 4. To be further assessed with design development.	CRA – Refer Annexure C
D2.19: Doorways and doors	• Sliding doors serving as exit doors must be openable manually under a force of not more than 110N. • Exit doors that are power operated must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source and if leading to road or open space, open automatically if there is a power failure or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door. • A power operated door in a path of travel to a required exit must be able to be opened manually under a force of not more than 110 N if there is a malfunction of the power source.	CRA – Refer Annexure C
D2.20: Swinging doors	Swinging doors in a required exit must not encroach– (i) at any part of its swing by more than 500 mm on the required 1m width of the exit and (ii) when fully open, by more than 100 mm on the required 1m exit width; and the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door. A swinging door in a required exit must swing in the direction of egress unless– • it serves a building or part with a floor area not more than 200 m^2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or • it serves a sanitary compartment or airlock (in which case it may swing in either direction). It is noted that at ground level the foyer entry doors are not a defined egress point with the adjacent doors into the fire isolated stairs defined as the required exit. Thus these foyer doors can swing in any direction.	CRA – Refer Annexure C
D2.21: Operation of latch	All doors in a required exit or forming part of a required exit AND doors in a path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by– (i) a single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – A. be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	B. have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm and not more than 45mm; or (ii) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor. 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 or 7 building with a floor area not more than 200m^2; or (iii) are fitted with a fail-safe device which automatically unlocks the door upon the activation of an AS 1670.1 detection system installed throughout the building.	
D2.22: Re-entry from fire-isolated exits	N/A to buildings less than 25m in effective height	N/A
D2.23: Signs on doors	Signage in accordance with this clause is to be located on all fire and smoke doors stating “Fire Safety Door, Do Not Obstruct, Do Not Keep Open” and the discharge door from the fire isolated stairways are to state “Fire Safety Door – Do Not Obstruct” in capital letters not less than 20mm in height. Note: Fire signage in accordance with clause 183 of the Environmental Planning and Assessment Regulation 2000 is also required.	CRA – Refer Annexure C
D2.24: Protection of openable windows	a) Bedroom windows must be provided with protection if the floor below the window is 2m or more above the surface beneath. b) Where the lowest level of the window opening is less than 1.7m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with– A. a device to restrict the window opening; or B. a screen with secure fittings. (ii) A device or screen required by (i) must– A. not permit a 125 mm sphere to pass through the window opening or screen; and B. resist an outward horizontal action of 250 N against the– aa. window restrained by a device; or bb. screen protecting the opening; and	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	C. have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. c) A barrier with a height not less than 865 mm above the floor is required to an openable window– (i) in addition to window protection, when a child resistant screen release mechanism is required by (b)(ii)(C); and (ii) where the floor below the window is 4m or more above the surface beneath if the window is not covered by (a). d) A barrier covered by (c) except for (e) must not– (i) permit a 125 mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. e) A barrier *required* by (c) to an openable window in— (i) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and must not permit a 300mm sphere to pass through it. 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	At this stage it is unclear whether timber stairs will be provided in a stair or passageway constructed of *fire protected timber* in accordance with C1.13 of BCA. To be further assessed with design development	CRA – Refer Annexure C
PART D3 - ACCESS FOR PEOPLE WITH A DISABILITY		
D3.0: Deemed-to-Satisfy Provisions	To be assessed in separate access report prepared by BCA Logic Pty Ltd	Noted

SECTION E: SERVICES AND EQUIPMENT		
PART E1 – FIRE FIGHTING EQUIPMENT		
E1.0: Deemed-to-Satisfy Provisions	Informational	Noted
E1.3: Fire hydrants	As the building has a floor area greater than 500 m^2, a fire hydrant system complying with AS 2419.1-2005 must be provided to serve the building. • Hydrant booster assembly location. The booster location must comply with the following: – be within 8m of a hardstand for fire brigade appliance; – be within sight of the main entry; – Assuming it is attached to the building, be separated from the building by construction	PS Refer to Part 5.3 of Report

SECTION E: SERVICES AND EQUIPMENT		
	achieving FRL 90/90/90 for 2m either side of and 3m above the upper hose connections – this particular issue will be assessed as a Performance Solution relying on the Draft AS2419.1-2016 version of the standard at the CC stage • Hydrant pump room location (if a pumpset is required). An internal pump room must have a door opening to road or open space or egress to open space via a fire-isolated exit; • Internal hydrants in each fire-isolated exit at each storey providing coverage to all parts of the building. For internal fire hydrant coverage, all points on the floor must be covered by a 10m hose stream, issuing from 30 m hose length, extending not less than 1m into the room.	
E1.4: Fire hose reels	A fire hose reel system complying with BCA clause E1.4 and AS 2441-2005 must be provided to the carpark portion of the building. All points on a floor shall be within reach of a 4 m hose stream issuing from a nozzle at the end of the hose laid on floor. The hose length shall not exceed 36 m.	CRA – Refer Annexure C
E1.5: Sprinklers	Based upon the effective height of the building there is no formal requirement for sprinklers to be installed, except to the carpark as there are more than 40 car spaces. However, as the existing building contains existing timber beams, columns and roof members (which are not permitted for a residential building of Type A Construction) then as an upgrading strategy it is proposed to extend the sprinkler system throughout the building to enable the timber elements to remain. Therefore, as part of a future fire engineered alternative solution then it is proposed to recommend a sprinkler system throughout. At this early stage it is unknown what the sprinkler system configuration and coverage requirements will be and this will need to be firmed up at Construction Certificate stage with design development. If the location for sprinkler valve sets does not afford direct egress to a road or open space, such matter will need to be addressed as a Performance Solution at the CC stage.	PS Refer to Part 5.3 of Report
E1.6: Portable fire extinguishers	Portable fire extinguishers must be provided in accordance with clause E1.6 & Table E1.6 of the BCA and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444-2001. For the Class 2 parts, portable fire extinguishers must be– (i) an ABE type fire extinguisher; and (ii) a minimum size of 2.5 kg; and (iii) distributed outside a sole-occupancy unit— (A) to serve only the storey at which they are located; and	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
		(B) so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10 m.	
E1.8:	Fire control centres	N/A for this development. The Main Fire Indicator Panel will simply need to be located in the main entry foyer area at ground level	N/A
E1.9:	Fire precautions during construction	Informational– • During construction, not less than one portable fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required / temporary exit; and • After the building has reach an effective height of 12m, the required fire hydrants and fire hose reels must be operational on all floor / roof covered storeys, except for the 2 uppermost storeys; and all required booster connections must be installed.	Noted
E1.10:	Provision for special hazards	N/A – no special hazards to this development	N/A
PART E1.5 – FIRE SPRINKLER SYSTEMS			
1.	Scope	Noted	-
2.	Adoption of AS2118	For Information	Noted
3.	Separation of sprinklered and non-sprinklered areas	The entire building will be sprinkler protected	Noted
4.	Protection of openings	To be detailed further in future fire engineering report	CRA – Refer Annexure C
5.	Fast response sprinklers	To be detailed further in future fire engineering report	CRA – Refer Annexure C
6.	Sprinkler valve enclosures	Location of sprinkler valve room to be defined – If the location for sprinkler valve sets does not afford direct egress to a road or open space, such matter will need to be addressed as a Performance Solution at the CC stage	PS – Refer Part 5.3 of Report
7.	Water supply	To be detailed further in future fire engineering report	CRA – Refer Annexure C
8.	Building occupant warning system	Sprinkler system to be connected to BOWS	CRA – Refer Annexure C
9.	Connection to Other Systems	Sprinkler system to be connected to BOWS and smoke detection and alarm system	CRA – Refer Annexure C
10.	Anti-tamper Devices	To be detailed further in future fire engineering report	CRA – Refer Annexure C
11.	Sprinkler Systems in Carparks	To be detailed further in future fire engineering report	CRA – Refer Annexure C
12.	Class 9c Aged Care Buildings	N/A	N/A
13.	Sprinkler systems in lift installations	To be detailed further in future fire engineering report	CRA – Refer Annexure C
PART E2 – SMOKE HAZARD MANAGEMENT			
E2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E2.1:	Application of Part	Informational	Noted

SECTION E: SERVICES AND EQUIPMENT			
E2.2:	General requirements (including Tables E2.2a and E2.2b)	**General smoke hazard management requirements** An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment (such as lobby air supply) must— (i) be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 4.10 of AS/NZS 1668.1; and for the purposes of this provision, each sole-occupancy unit in a Class 2 building is treated as a separate fire compartment. Miscellaneous air-handling systems covered by Sections 5 and 11 of AS/NZS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. **Class 2 residential parts** Class 2 parts must be provided with an automatic smoke detection and alarm system complying with BCA Specification E2.2a. Note: Multiple smoke alarms in sole occupancy units are now required to be interconnected. **Class 7a carpark** A Class 7a building including a basement provided with a mechanical ventilation system in accordance with AS 1668.2 must comply with clause 5.5 of AS/NZS 1668.1 except that fans with metal blades for operation at normal temperatures may be used, and the electrical power and control cabling need not be fire rated. Additional smoke detection and alarm requirement will likely be applicable as a result of the future fire engineering assessment to be undertaken.	CRA – Refer Annexure C and PS – Refer Part 5.3 of Report
E2.3:	Provisions for special hazards	N/A	N/A

SPECIFICATION E2.2a – SMOKE DETECTION AND ALARM SYSTEM			
1.	Scope	Noted	-
2.	Type of system	A clause 3 and Clause 4 system will be required	Noted
3.	Smoke alarm system	Until the future fire engineering report is completed then the recommendations for smoke hazard management system will be unknown. But typically for a building like this then stand-alone AS3786 smoke alarms to be installed to sole occupancy units (or smoke detectors to sound local alarm within unit) To be further assessed with design development.	CRA – Refer Annexure C
4.	Smoke detection system	Until the future fire engineering report is completed then the recommendations for smoke hazard management system will be unknown. Typically as the building is to have a sprinkler system installed then there is no formal requirement to have smoke detectors located in common areas of the class 2 parts of the building, except in front of lifts as per the requirements of AS1670.1-2015. To be further assessed with design development.	CRA – Refer Annexure C
5.	Smoke detection for smoke control system	Not applicable to this building	N/A
6.	Building occupant warning system	Until the future fire engineering report is completed then the recommendations for smoke hazard management system will be unknown. Typically, the sprinkler system will be required to activate the building occupant warning system to sound at 100dba at the door or 75dba at the bedhead. To be further assessed with design development.	CRA – Refer Annexure C
7.	System Monitoring	Fire alarm system monitoring not required in accordance with this clause. However, will be separately required as part of the AS2118 sprinkler system requirements.	Noted
PART E3 – LIFT INSTALLATIONS			
E3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E3.1:	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1	CRA – Refer Annexure C
E3.2:	Stretcher facility in lifts	The subject lifts do not extend up to serve the level 4 mezzanine , therefore, whilst the total building has an effective height of more than 12 metres, the lift only serves levels under 12m effective height (10.84metres) and therefore, stretcher lifts capability is not formally required in accordance with this clause.	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.	CRA – Refer Annexure C
E3.4:	Emergency lifts	N/A	N/A
E3.5:	Landings	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D. Landing dimensions appear OK but to be further assessed with design development.	CRA – Refer Annexure C

E3.6:	Passenger lifts	In an accessible building, every passenger lift must be one of the types specified in Table E3.6a, have accessible features in accordance with Table E3.6b, and not rely on a constant pressure device for its operation if the lift car is fully enclosed. As per the comments in Clause E3.2 above, lifts only travel 10.84 metres and therefore, as the travel is less than 12 metres then the lift car dimensions can be as little as 1100 width x 1400mm length. The lift shafts appear to have this dimension but to be further assessed with design development.	CRA – Refer Annexure C
E3.7:	Fire service controls	As the lifts do not serve an effective height of more than 12 metres then fire service controls are not required	N/A
E3.8:	Aged care buildings	N/A	N/A
E3.9:	Fire service recall switch	As no fire service controls are required then no recall switch required.	N/A
E3.10:	Lift car service drive control switch	As no fire service controls are required then no drive control switch required.	N/A
SPECIFICATION E3.1 – LIFT INSTALLATIONS			
1.	Scope	Noted	-
2.	Lift cars exposed	The lift cars are not exposed to solar heat source	N/A
3.	Lift car emergency lighting	Emergency lighting required	CRA – Refer Annexure C
4.	Cooling of lift shaft	Cooling of lift shaft is required as per this clause	CRA – Refer Annexure C
5.	Lift foyer access	The lift foyers will be required to have required exit doors that open directly or via failsafe as per BCA D2.19 / D2.21	Complies
6.	Emergency access doors in a single enclosed lift shaft	N/A	N/A
PART E4 – VISIBILITY IN AN EMERGENCY, EXIT SIGNS AND WARNING SYSTEMS			
E4.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E4.2:	Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with Clause E4.2 of the BCA and AS 2293.1-2005.	CRA – Refer Annexure C
E4.3:	Measurement of distance	Informational	Noted
E4.4:	Design and operation of emergency lighting	The emergency lighting system must comply with AS 2293.1-2005.	CRA – Refer Annexure C
E4.5:	Exit signs	Exits signs are to be provided above or adjacent to a door providing egress as well as directional signage throughout the entire development where necessary.	CRA – Refer Annexure C
E4.6:	Direction signs	Where an exit is not readily apparent, directional signage is to be installed indicating the direction of egress.	CRA – Refer Annexure C
E4.7:	Class 2 and 3 buildings and Class 4 Parts: Exemptions	Informational	Noted
E4.8:	Design and operation of exit signs	Exit signs must comply with AS 2293.1-2005 and be clearly visible at all times when the building is occupied.	CRA – Refer Annexure C

E4.9:	Sound systems and intercom systems for emergency purposes	A sound system and intercom system for emergency purposes (EWIS) is not required to be installed within 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.	Noted
F1.1:	Stormwater drainage	New Stormwater drainage to comply with AS3500.3-2003.	CRA – Refer Annexure C
F1.4:	External above ground membranes	Waterproofing membranes for external above ground use to comply with AS4654 Parts 1 and 2-2012.	CRA – Refer Annexure C
F1.5:	Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	CRA – Refer Annexure C
F1.6:	Sarking	Sarking-type materials used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2-1994.	CRA – Refer Annexure C
F1.7:	Water proofing of wet areas in buildings	Wet areas must be constructed in accordance with AS 3740-2010 and F1.7 of the BCA.	CRA – Refer Annexure C
F1.9:	Damp-proofing	Moisture is to be prevented from reaching the walls above a damp-proof course, and the underside of the suspended floors. No change to existing external walls being retained onsite	Base Building
F1.10:	Damp-proofing of floors on the ground	If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870-2011 (N/A to areas that do not require weatherproofing – refer specific clause exemptions).	CRA – Refer Annexure C
F1.11:	Provision of floor wastes	In Class 2 building, a bathroom or laundry is to have a floor waste where the floor is graded to the floor waste to permit the drainage of water.	CRA – Refer Annexure C
F1.12:	Sub-floor ventilation	Where timber floor is proposed then subfloor ventilation to be provided	CRA – Refer Annexure C
F1.13:	Glazed Assemblies	Glazed assemblies are to comply with AS2047 and AS1288.	CRA – Refer Annexure C
PART F2 – SANITARY AND OTHER FACILITIES			
F2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F2.1:	Facilities in residential buildings (including Table F2.1)	Each SOU must be provided with sanitary facilities; a kitchen sink; facility for the preparation and cooking of food; laundry wash tub and space for a washing machine and dryer. To be assessed with design development. Where 10 or more sole occupancy units are provided in a Class 2 An employee facility that incorporates a washbasin and closet pan is required at or near ground floor level. The facility must be an accessible unisex toilet facility, compliant with AS 1428.1-2009.	FI Refer to Part 5.5 of Report

SECTION F: HEALTH AND AMENITY			
F2.2:	Calculation of number of occupants and facilities	The staff facility in accordance with BCA Clause F2.1 is all that is needed for staff.	Noted
F2.3:	Facilities in Class 3 to 9 buildings (including Table F2.3)	The staff facility in accordance with BCA Clause F2.1 is all that is needed for staff.	Noted
F2.4:	Accessible sanitary facilities (including Table F2.4)	To be addressed within separate access report prepared by BCA Logic Pty Ltd	Noted
F2.5:	Construction of sanitary compartments	a) Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend— (i) from floor level to the ceiling in the case of a unisex facility; or (ii) to a height of not less than 1.5 m above the floor if primary school children are the principal users; or (iii) 1.8 m above the floor in all other cases. b) The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F2.5, between the closet pan within the sanitary compartment and the doorway.	CRA – Refer Annexure C
F2.6:	Interpretation: urinals and washbasins	Informational– (a) A urinal may be— (i) an individual stall or wall-hung urinal; or (ii) each 600 mm length of a continuous urinal trough; or (iii) a closet pan used in place of a urinal. (b) A washbasin may be— (i) an individual basin; or (ii) a part of a hand washing trough served by a single water tap.	Noted
F2.8:	Waste Management	N/A	N/A
PART F3 – ROOM SIZES			
F3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F3.1:	Height of rooms and other spaces	Based upon the elevation drawings and a floor to floor height of 3.7 to lower levels then it is likely that ceiling heights will comply. At upper level 4 a floor to floor height of 2.9m is proposed and will also be likely that ceiling heights will comply. The mezzanine ceiling height will need to be further assessed with design development to ensure that there are no beams or the like obstructing ceiling height.	CRA – Refer Annexure C
PART F4 – LIGHT AND VENTILATION			
F4.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F4.1:	Provision of natural light	Natural light must be provided to all habitable rooms.	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY			
		To be further assessed with design development once room configurations firm up. Refer Part 5.4 of Report for further detailed discussion on this issue	
F4.2:	Methods and extent of natural lighting	• 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 To be further assessed with design development. Refer Part 5.4 of Report for further detailed discussion on this issue	CRA – Refer Annexure C
F4.3:	Natural light borrowed from adjoining room	There are a number of room layouts where bedrooms rely upon borrowed natural light, however, these bedrooms are located off corridors and would not comply with the borrowed light requirements of this clause as the bedroom doors do not open directly from the living areas. Refer Part 5.4 of Report for further detailed discussion on this issue	PS Refer to Part 5.3 and Part 5.4 of Report
F4.4:	Artificial Lighting	Lighting to the all areas is to comply with AS 1680.0.	CRA – Refer Annexure C
F4.5:	Ventilation of rooms	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2-2012.	CRA – Refer Annexure C
F4.6:	Natural ventilation	(a) Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened— (i) with an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated; and (ii) open to— (A) a suitably sized court, or space open to the sky; or (B) an open verandah, carport, or the like; or (C) an adjoining room in accordance with F4.7. To be further assessed with design development	CRA – Refer Annexure C
F4.7:	Ventilation borrowed from adjoining room	There are a number of room layouts where bedrooms rely upon borrowed natural ventilation, however, these bedrooms are located off corridors and would not comply with the borrowed ventilation requirements of this clause as the bedroom doors do not open directly from the living areas.	FI Refer to Part 5.5 of Report
F4.8:	Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a kitchen. Otherwise mechanical ventilation will be required.	CRA – Refer Annexure C
F4.9:	Airlocks	If sanitary compartments are prohibited from opening directly to another room: • access must be by an airlock, hallway or other room; or • the sanitary compartments must be provided with mechanical exhaust ventilation.	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY			
F4.11:	Carparks	Every storey of the carpark must have a system of mechanical ventilation complying with AS1668.2-2012.	CRA – Refer Annexure C
F4.12:	Kitchen local exhaust ventilation	N/A	N/A
PART F5 – SOUND TRANSMISSION AND INSULATION			
F5.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F5.1:	Application of Part	Informational– The Deemed-to-Satisfy Provisions of this Part apply to Class 2 buildings.	Noted
F5.2:	Determination of airborne sound insulation ratings	A form of construction required to have an airborne sound insulation rating must— (a) have the required value for weighted sound reduction index (Rw) or weighted sound reduction index with spectrum adaptation term (Rw + Ctr) determined in accordance with AS/NZS 1276.1 or ISO 717.1 using results from laboratory measurements; or (b) comply with Specification F5.2.	CRA – Refer Annexure C
F5.3:	Determination of impact sound insulation ratings	(a) A floor in a building required to have an impact sound insulation rating must— (i) have the required value for weighted normalised impact sound pressure level with spectrum adaptation term (Ln,w + CI) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or (ii) comply with Specification F5.2. (b) A wall in a building required to have an impact sound insulation rating must be of discontinuous construction; and (c) For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and (i) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and (ii) for other than masonry, there is no mechanical linkage between leaves except at the periphery.	CRA – Refer Annexure C
F5.4:	Sound insulation rating of floors	A floor in a Class 2 building must achieve an $R_w + C_{tr}$ (airborne) not less than 50, and an $L_{n,w}+C_I$ (impact) not more than 62, if separating: • SOU's; or • An SOU from a plant room, lift shaft, public corridor, public lobby or parts of a different classification.	CRA – Refer Annexure C
F5.5:	Sound insulation rating of walls	• A wall in a Class 2 building must: (i) have an $R_w + C_{tr}$ (airborne) not less than 50 if it separates sole-occupancy units; and (ii) have an R_w (airborne) not less than 50 if it separates a sole occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and (iii) be of discontinuous construction in accordance with F5.3(b) if it separates: A. a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY			
		habitable room (other than a kitchen) in an adjoining unit; or B. a sole-occupancy unit from a plant room or lift shaft. • Where a wall required to have sound insulation has a floor above, the wall must continue to: (i) the underside of the floor above; or (ii) a ceiling that provides the sound insulation required for the wall. • Where a wall required to have sound insulation has a roof above, the wall must continue to: (i) the underside of the roof above; or (ii) a ceiling that provides the sound insulation required for the wall. • Doorways in walls separating the Class 2 sole-occupancy units from a stairway, public corridor, public lobby or the like must be provided with a door assembly that has an Rw not less than 30.	
F5.6:	Sound insulation rating of services	If a soil or waste pipe passes through more than one unit the pipe must be separated from the rooms with construction that has a Rw + Ctr (airborne) not less than 40 if adjacent to a habitable room (other than a kitchen), or 25 if adjacent to a kitchen or other room.	CRA – Refer Annexure C
F5.7:	Sound isolation of pumps	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating pump.	
SPECIFICATION F5.2 – SOUND INSULATION FOR BUILDING ELEMENTS			
1.	Scope	Noted	-
2.	Construction Deemed-to-Satisfy	Information only.	Noted
SPECIFICATION F5.5 – IMPACT SOUND – TEST OF EQUIVALENCE			
1.	Scope	Noted	-
2.	Construction to be Tested	Information only.	Noted
3.	Method	Information only.	Noted

SECTION G: ANCILLARY PROVISIONS			
PART G1 – MINOR STRUCTURES AND COMPONENTS			
G1.0:	Deemed-to-Satisfy Provisions	Informational	Noted
G1.1:	Swimming pools	N/A	N/A
G1.2:	Refrigerated chambers, strong-rooms and vaults	N/A	N/A
G1.3:	Outdoor play spaces	N/A	N/A
NSW G1.101:	Provision for cleaning windows	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: • the windows can be cleaned wholly from within the building; or • via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.	CRA – Refer Annexure C

SECTION I: MAINTENANCE
PART I1 – EQUIPMENT AND SAFETY INSTALLATIONS
This Part has been deleted in BCA2016.

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)			
PART J0 – ENERGY EFFICIENCY			
J0.1:	Application of Section J	Informational	Noted
J0.2:	Heating & cooling loads of SOU's to Class 2 & 4 parts	Not applicable	NA
J0.3:	Ceiling fans	Not applicable	NA
PART J1 – BUILDING FABRIC			
J1.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J1.1:	Application of Part	This part is not applicable to the carpark.	NA
PART J2 – GLAZING			
J2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J2.1:	Application of Part	This part is not applicable to the carpark.	NA
PART J3 – BUILDING SEALING			
J3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J3.0:	Application of Part	This part is not applicable to the carpark.	NA
PART J4 – AIR MOVEMENT			
Deleted		Part J4 deleted in BCA2016	-
PART J5 – AIR CONDITIONING AND VENTILATION SYSTEMS			
J5.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J5.2:	Air-conditioning systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.3:	Mechanical ventilation systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.4:	Miscellaneous exhaust systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
PART J6 – ARTIFICIAL LIGHTING AND POWER			
J6.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J6.1:	Application of Part	Informational	Noted
J6.2:	Artificial lighting	Artificial lighting to comply with this clause, design certification to be provided by the electrical designer.	CRA – Refer Annexure C
J6.3:	Interior artificial lighting and power control	Lighting controls are to be in accordance with this clause, which sets requirements on location of switching and sets limits on floor areas controlled by a switch.	CRA – Refer Annexure C
J6.4:	Interior decorative and display lighting	Lighting falling under this clause is to be separately switched from other lighting, be under a manual switch and controlled with a time switch.	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 7a Carpark)			
J6.5:	Artificial lighting around the perimeter of a building	Perimeter lighting is to be controlled by a daylight sensor or time switch and where it exceeds 100W have an average light source density of 60 Lumens/W or be controlled by a motion sensor complying with Specification J6.	CRA – Refer Annexure C
J6.6:	Boiling water and chilled water storage units	The power supply to a fixed boiling water or chilled water storage unit must be controlled by a time switch in accordance with Specification J6.	CRA – Refer Annexure C
PART J7 – HEATED WATER SUPPLY			
J7.0:	Deemed-to-Satisfy Provisions	Noted	-
J7.2:	Heated water supply system	A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.	CRA – Refer Annexure C
PART J8 – FACILITIES FOR ENERGY MONITORING			
J8.0:	Deemed-to-Satisfy Provisions	Informational	Noted
J8.1:	Application of Part	Informational	Noted
J8.3:	Facilities for energy monitoring	• A building with a floor area of more than 2,500m^2 must have the facility to record, individually the energy consumption of: – air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and – artificial lighting; and – appliance power; and – central hot water supply; and – internal transport devices including lifts, escalators and travelators where there is more than one serving the building; and – other ancillary plant.	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 2)			
NSW PART J(A)1 – BUILDING FABRIC			
NSW J(A)1.0:	Deemed-to-Satisfy Provisions	Informational	Noted
NSW J(A)1.1:	Application of Part	Informational– • The Deemed-to-Satisfy Provisions of this Part only apply to thermal insulation in the Class 2 part where development consent specifies that the insulation is to be provided as part of the development. • The Deemed-to-Satisfy provisions of this Part for thermal breaks apply.	Noted
NSW J(A)1.2:	Compliance with BCA Provisions	Sole occupancy units of the Class 2 building must comply with the following National Provisions except that the reference to 'where required' in J1.2 is deemed to refer to 'where a development consent specifies that insulation is to be provided as part of the development.' • for general thermal construction, comply with J1.2; and	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 2)		
	• for thermal breaks, comply with J1.3(d) and J1.5(c); and • for compensating for a loss of ceiling insulation, comply with J1.3(c); and • for floor edge insulation, comply with J1.6(c) and J1.6 (d).	
NSW PART J(A)2 – BUILDING SEALING		
NSW J(A)2.0: Deemed-to-Satisfy Provisions	Informational	Noted
NSW J(A)2.1: Application of Part	The requirements of this Part are applicable to Class 2 buildings excluding: • a building in a climate zones 2 and 5 where the only means of air-conditioning is by using an evaporative cooler; • a building ventilation opening necessary for the safe operation of a gas appliance; • parts of the building that cannot be fully enclosed.	Noted
NSW J(A)2.2: Compliance with BCA Provisions	Class 2 buildings and Class 4 parts of buildings, must comply with the following National Provisions: (a) J3.2 Chimneys and flues; (b) J3.3 Roof lights; (c) J3.4 External doors and windows; (d) J3.5 Exhaust fans; (e) J3.6 Construction of roofs walls and floors; and (f) J3.7 Evaporative coolers.	CRA – Refer Annexure C
J3.2: Chimneys and flues	Not applicable	NA
J3.3: Roof lights	Roof lights must be sealed or be capable of being sealed and must be constructed with– (i) an imperforate ceiling diffuser or the like installed at the ceiling or lining level; or (ii) a weatherproof seal; or (iii) shutter system readily operated either manually, mechanically or electronically by the occupant.	
J3.4: External windows and doors	• A seal to restrict air infiltration must be fitted to each edge of a door, openable window or the like forming part of: – the *envelope* of a conditioned space; or – the external fabric of a habitable room or public area. • The above does not apply to: – a window complying with AS 2047; or – a fire door or smoke door; or – a roller shutter door, roller shutter grille or other security device. • For the bottom edge of external swing doors, the seal must be a draft protection device and may otherwise be a foam or rubber compression strip, fibrous seal or the like.	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 2)		
	• An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, revolving door or the like, other than– (i) where the conditioned space has a floor area of not more than 50m^2; or (ii) where a café, restaurant, open front shop or the like has– A. a 3m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and B. at all other entrances to the café, restaurant, open from shop of the like, self-closing doors.	
J3.5: Exhaust Fans	The exhaust fans to the sanitary facilities in this portion of the building, and any other miscellaneous exhaust fans to other conditioned spaces, are to be pre-fitted with a sealing device, such as a self-closing damper of the like.	CRA – Refer Annexure C
J3.6: Construction of Roofs, Walls and Floors	The roof, walls, floors and any other openings, such as window or doors, are to be constructed to minimise air leakage by being enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions or are sealed by caulking, skirting, architraves, cornices or the like.	CRA – Refer Annexure C
J3.7: Evaporative Coolers	Where provided an evaporative cooler is to be fitted with a self-closing damper in accordance with this clause.	CRA – Refer Annexure C
NSW PART J(A)3 – AIR-CONDITIONING AND VENTILATING SYSTEMS		
NSW J(A)3.0: Deemed-to-Satisfy Provisions	Informational	Noted
NSW J(A)3.1: Application of Part	Informational	Noted
NSW J(A)3.2: Compliance with BCA Provisions	Class 2 buildings must comply with the following national BCA provisions (as applicable): (a) J5.2 (a) to (d) and (f) to (g) Air conditioning systems; and (b) J5.3 Mechanical ventilation systems; and (c) J5.4 Miscellaneous exhaust systems.	
J5.2: Air-conditioning systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.3: Mechanical ventilation systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
J5.4: Miscellaneous exhaust systems	Compliance required, design certification to be provided by Mechanical Engineer.	CRA – Refer Annexure C
NSW PART J(A)4 – HOT WATER SUPPLY		
NSW J(A)4.0 Deemed-to-Satisfy Provisions	Noted	-
NSW J(A)4.1 Application of Part	Noted	-
NSW J(A)4.2 Compliance with BCA Provisions	The hot water supply system must comply with Clause J7.2 Heated Water Supply.	Noted
J7.2: Hot Water Supply	A heated water supply system for food preparation and sanitary purposes must be designed and installed in	CRA – Refer Annexure C

SECTION J: ENERGY EFFICIENCY (Class 2)			
		accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.	
NSW PART J(A)5 – ACCESS FOR MAINTENANCE			
NSW J(A)5.0	Deemed-to-Satisfy Provisions	Informational	Noted
NSW J(A)5.1	Application of Part	The *Deemed-to-Satisfy Provisions* of this Part apply to a Class 2 building except within a *sole-occupancy unit*.	Noted
NSW J(A)5.3	Compliance with BCA Provisions	Class 2 Buildings must comply with national BCA provisions J8.3.	Noted
J8.3	Facilities for energy monitoring	a) The building with a floor area of more than 2,500m^2 must have the facility to record, individually the energy consumption of: – air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and – artificial lighting; and – appliance power; and – central hot water supply; and – internal transport devices including lifts, escalators and travelators where there is more than one serving the building; and – other ancillary plant. b) The provisions of (b) do not apply to a Class 2 building with a floor area of more than 2,500m^2 where the total area of the common areas is less than 500m^2.	CRA – Refer Annexure C

ANNEXURE C - BCA COMPLIANCE SPECIFICATION

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

Architectural Design Certification:

1. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2016.
2. Materials, floor and wall linings/coverings, surface finished and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C1.10 and Specification C1.10 of BCA2016.
3. The building will be separated into separate fire compartments by a fire wall compliant with Clause C2.7 and Specification C1.1 of BCA2016.
4. The parts of different classifications located alongside one another in the same storey will be separated in accordance with Clause C2.8 and Specification C1.1 of BCA2016.
5. Floors separating storeys of different classifications will comply with BCA Clause C2.9 of BCA2016.
6. Equipment will be separated in accordance with Clause C2.12 of BCA2016.
7. The electricity substation, any main switch room sustaining emergency equipment required to operate in emergency mode, will be separated from the remaining building with construction having a FRL 120/120/120 and provided with self-closing -/120/130 fire doors in accordance with Clause C2.13 of BCA2016.
8. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C3.5 of BCA2016.
9. Doors in a fire-isolated exit will be self-closing or automatic closing fire doors with a FRL of not less than -/60/30 in accordance with Clause C3.8 of BCA2016.
10. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C3.9 of BCA2016.
11. Services penetrating elements required to possess a 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 BCA2016.
12. 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.
13. The lift doors will be --/60/- fire doors complying with AS1735.11 in accordance Clause C3.10 of BCA2016.
14. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C3.11 of BCA2016.
15. 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 BCA2016 and Fire Engineering Report to be prepared.
16. All attachments to the external façade of the building will be of anon-combustible material, or a combustible material in accordance with Clause 2.4 of Specification C1.1 of BCA2016.
17. The top and bottom of the riser shafts will achieve an FRL not less than the FRL required for the walls of the shaft in accordance with Clause 2.7 of Specification C1.1 of BCA2016.
18. Fire doors will comply with AS1905.1 and Specification C3.4 of BCA2016.
19. Fire windows will be in accordance with Specification C3.4 of BCA2016.
20. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2016.

21. The fire-isolated exits will be in accordance with Clause D1.7 of BCA2016.
22. Discharge from exits will be in accordance with Clause D1.10 of BCA2016.
23. The ladder from the plant, lift machine rooms, and electricity network substation in lieu of a stairway will be in accordance with Clause D1.16 of BCA2016.
24. Access to the lift pit will be in accordance with Clause D1.17 of BCA2016.
25. The stairway or ramp within the fire-isolated shaft is to be non-combustible, and if there is a local failure not cause structural damage or impair the fire resistance of the shaft, in accordance with Clause D2.2 of BCA2016.
26. The ramp or balcony provided for smoke hazard management requirements will be in accordance with Clause D2.5 of BCA2016.
27. The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2016 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.
28. 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 BCA2016.
29. New pedestrian ramps will comply with AS1428.1-2009, Clause D2.10 and Part D3 of BCA2016. The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.
30. The fire-isolated passageway will be in accordance with Clause D2.11 of BCA2016.
31. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2016. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.
32. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2016. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 where the edge ledge to a flight below.
33. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2016.
34. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the machinery room, boiler house, lift-machine room, plant-room, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS1657-2013 or Part D2 of BCA2016.
35. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2016.
36. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 of BCA2016.
37. Signage will be provided on fire and smoke doors in accordance with Clause D2.23 of BCA2016.
38. The openable portion of a window in a bedroom of a Class 2 building must be protected with a restricting device or secure screen that does not allow a 125mm sphere to pass through the opening or screen and resist an outward horizontal action of 250N in accordance with Clause D2.24 of BCA2016. In addition to window protection, and for other openable windows 4 meters or more above the ground below, a barrier with a height not less than 865mm above the floor must be installed to the openable window.
39. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2016.
40. Where proposed, Non-illuminated exit signage will be installed in accordance with Clause E4.7, and of BCA2016.

41. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2016 and AS 4654 Parts 1 & 2.
42. The new roof covering will be in accordance with Clause F1.5 of BCA2016.
43. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2016.
44. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2016 and AS3740.
45. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2016.
46. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F1.11 of BCA2016.
47. Where provided, sub-floor ventilation will be provided in accordance with Clause F1.12 of BCA2016.
48. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2016 and AS1288 / AS2047.
49. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2016.
50. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2016.
51. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2016 and Performance Solution Report to be prepared.
52. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2016.
53. Water closets and urinals will be located in accordance with Clause F4.8 of BCA2016.
54. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2016.
55. Every storey of the carpark will be provided with an adequate system of mechanical ventilation in accordance with Clause F4.11 of BCA2016.
56. A means of cleaning of windows in accordance with the Work Health & Safety Act 2011 and regulations made under that Act in accordance with NSW G1.101 of BCA2016.
57. The construction of the residential portions of the development will be undertaken in accordance with the relevant BASIX commitments that form part of the Development Consent approval.
58. 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.
59. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2016.

Electrical Services Design Certification:

60. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2016, except where modified by proposed future Fire Engineering Report.
61. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2016 and AS2293.1.
62. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2016 and AS2293.1.
63. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2016 and AS/NZS 1680.0.
64. Lighting power and controls will be installed in accordance with Part J6 of BCA2016.

Hydraulic Services Design Certification:

65. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2016 and ASNZS3500.3

66. Fire hydrants will be installed in accordance with Clause E1.3 of BCA2016 and AS2419.1 as required and Fire Engineering Report to be prepared.

67. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2016 and AS2441.

68. A sprinkler system will be installed in accordance with Clause E1.5 of BCA2016, Specification E1.5 and AS2118, except where modified by proposed future Fire Engineering Report.

69. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2016 and AS2444.

70. The heated water supply systems will be designed and installed to NCC Volume 3 – Plumbing code and Clause J7.2 of BCA2016.

Mechanical Services Design Certification:

71. 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 BCA2016, and AS/NZS 1668.1.

72. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2016 and AS1668.2.

73. Every storey of the car park will be ventilated in accordance with Clause F4.11 of BCA2016 and where not naturally ventilated it will be mechanically ventilated in accordance with AS1668.2 as applicable.

74. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J5 of BCA2016.

Structural Engineers Design Certification:

75. The material and forms of construction for the proposed works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2016 as follows:
    - Dead and Live Loads – AS1170.1
    - Wind Loads – AS1170.2
    - Earthquake actions – AS1170.4
    - Masonry – AS3700
    - Concrete Construction – AS3600
    - Steel Construction AS4100
    - Aluminium Construction – AS/NZS1664.1 or 2
    - Timber Construction – AS 1720.1
    - ABCB Standard for Construction of Buildings in Flood Hazard Areas.

76. The FRL's of the structural elements for the proposed works have been designed in accordance with Table 3 of Specification C1.1 of BCA2016 for a building of Type A Construction and Fire Engineering Report to be prepared.

77. The lift shaft will have a FRL in accordance with Clause C2.10 and Specification C1.1 of BCA2016.

78. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2016.

79. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2016 to maintain the FRL integrity of the element concerned.

80. Upon completion of the works, a structural engineer will be able to certify that local failure will be in accordance with Clause D2.2 of BCA2016 for the fire isolated stairs.

Lift Services Design Certification:

81. Warning signage in accordance with Clause E3.3 of BCA2016 will be provided to the lifts to advise not to use the lifts in a fire.

82. Access and egress to the lift well landings will comply with the Deemed-to-Satisfy Provisions of D3 of the BCA2016, and will be suitable to accommodate disabled persons.

83. 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 BCA2016.

84. The lifts will comply with AS1735.12 in accordance with Clause E3.6 of BCA2016.

Acoustic Services Design Certification:

85. The sound transmission and insulation of the residential portions of the development will comply with Part F5 of BCA2016.

NSW Specification Design Certificate:

86. Materials, floor and wall linings/coverings, surface finished and air-handling ductwork used in the works will comply with the fire hazard properties in accordance with Clause C1.10, NSW Clause C1.10, Specification C1.10 and NSW Specification C1.10 of BCA2016.

87. Doorways and other openings in internal walls required to have an FRL will be protected in accordance with Clause C3.11, and NSW Clause C3.11(d) of BCA2016.

88. The discharge points of exits will be in accordance with Clause D1.10, and NSW Clause D1.10(f) of BCA2016.

89. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6, and NSW Clause D1.6(f)(vi)&(j) of BCA2016.

90. Stair geometry to the new stairways will be in accordance with Clause D2.13, and NSW Clause D2.13(a)(ix)(x)(xi) of BCA2016. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 or a nosing strip with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.

91. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15, and NSW Clause D2.15(d)&(e) of BCA2016. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 where the edge leads to a flight below.

92. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, NSW Clause D2.16 & NSW Table D2.16a 1 and D2.17 of BCA2016.

93. The doorways and doors will be in accordance with Clause D2.19, NSW Clause D2.19(b)(v) and D2.20 of BCA2016.

94. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 and NSW Clause D2.21(c)&(d) of BCA2016.

95. Insulation will be in accordance with AS4859.1 and will be installed as required by NSW Part J1 of BCA2016.

96. A smoke detection and alarm systems will be installed throughout the building in accordance with Table E2.2a, NSW Table E2.2a and NSW Specification E2.2a of BCA2016.

97. Exit signage will be installed in accordance with Clause E4.5, NSW Clause E4.6, E4.7, and E4.8 of BCA2016 and AS2293.1.

98. The building will be mechanically ventilated in accordance with Clause F4.5, NSW F4.5(b) of BCA2016 and AS1668.2.