BCA Assessment Report

38 Park Street & 1793 – 1797 Pittwater Road, Mona Vale

Project:	38 Park Street & 1793 – 1797 Pittwater Road, Mona Vale
Reference No:	111006-BCA-r3
Date:	17 September 2020
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Document Control

Revision	Date	Description	
111006-BCA-r1	10/09/2019	Preliminary BCA Assessment Report (DA Stage)	
111006-BCA-r2	16/09/2019	Final BCA Assessment Report (DA Stage)	
111006-BCA-r3	17/9/2020	BCA Assessment Report (DA Stage) (Report includes the addition of building at 38 Park Street as a United Building with 1793-1797 Pittwater Road))	
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EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings for the proposed three (3) storey SEPP Seniors building containing self contained sole occupancy units. The development consists of a basement level carpark with two (2) levels of residential apartments located above.development at 38 Park Street & 1793 – 1797 Pittwater Road, Mona Vale, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2019, Volume 1 Amendment 1.

The proposed development comprises a new basement level carpark and seniors development living development at 1793 Pittwater Rd with a connection at basement level to the existing approved development at 1795-1797. Due to the basement connection the new development will form a single United Building with the adjacent development at 199501797 Pittwater Road.

Part 5 'Matters for Further Consideration' of this report outlines the identified BCA compliance issues that require further information or consideration and/or assessment as Performance Solutions.

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

Item	Description	BCA Provision
Performance Solutions Required		
1.	Removal of insulation requirement to basement level FRL --/120/-- fire shutter	C3.5
2.	Exit travel distance to all first floor level units (to 1797 Pittwater Rd) exceeds 6 metres to an exit (between 7-10 metres)	D1.4
3.	Exit travel from the building discharges to open space however, re-entry is needed back underneath canopy awnings before open space is reached to the street.	D1.4/D1.9
4.	Fire hydrant pumproom is accessed via an open stair rather than a fire isolated stair or access direct to open space	E1.3
5.	Weatherproofing of walls to be the subject of a performance solution as there is no Deemed to Satisfy requirements.	F1.0
Building Code of Australia Compliance Matters to be Addressed with Design Development		
1.	The building is setback 2370-2490mm from the southern boundary and will require protection of openings as this elevation is less than 3000mm in accordance with BCA Clause C3.2	C3.2/C3.4

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

1 BASIS OF ASSESSMENT

1.1. Location and Description

The building development, the subject of this report, is located at 38 Park Street & 1793 – 1797 Pittwater Road, Mona Vale and comprises a three (3) storey SEPP Seniors building containing self contained sole occupancy units.

The development consists of a basement level carpark with two (2) levels of residential apartments located above.development at 38 Park Street & 1793 – 1797 Pittwater Road, Mona Vale, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2019, Volume 1 Amendment 1.

The proposed development comprises a new basement level carpark and seniors development living development at 38 Park Street with a connection at basement level to the existing approved development at 1795-1797. Due to the basement connection the new development will form a single United Building with the adjacent development at 1795-1797 Pittwater Road.

1.2. Purpose

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

1.3. Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume 1 – Building Code of Australia, 2019 Edition Amendment 1 (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 2019.

1.4. Limitations

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

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

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

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

This report does not include, or imply compliance with:

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

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

(c) The deemed to satisfy provisions of Part D3 and F2.4 of BCA2019;

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

(e) Work Health and Safety Act 2011;

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

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

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

1.5. Design Documentation

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

2 BUILDING DESCRIPTION

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

2.1. Rise in Storeys (Clause C1.2)

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

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
2	Ground, first	Residential sole occupancy units (Independent living units deemed Class 2 rather than Class 3)
7a	Basement	Carpark

2.3. Effective Height (Clause A1.0)

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

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

The building is required to be of Type B Construction due to the rise in storeys of two (2).

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

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

Class 7a	Maximum Floor Area	3500m^2
	Maximum Volume	21,000m^3
Class 2	The Class 2 portions of the building are not subject to floor area and volume limitations of C2.2 as Table 3 of Specifications C1.1 and Clause C3.11 of the BCA regulates the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 classifications.	

2.6. Fire Compartments

The following *fire compartments* have been assumed:

(a) Basement carpark & all residential levels form a single fire compartment due to the open stair connection

2.7. Exits

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

(a) Basement – fire isolated stair leading to Park Street & first riser of the non-fire isolated exit stair

(b) Ground Floor – external walkways leading from the units and discharge of stairs

(c) First Floor – first riser of the main residential stairs

2.8. Climate Zone (Clause A1.0)

The building is located within Climate Zone 5.

2.9. Location of Fire-source features

The fire source features for the subject development are:

North: The side allotment boundary

South: The side allotment boundary

East: The far boundary of Pittwater Rd

West: The far boundary of Park Street

A *fire-source* feature is defined in Part A1.0 – Schedule 3 of the BCA as–

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

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

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

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.

3 STATEMENT OF COMPLIANCE

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

3.1. Dimensions and Tolerances

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

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

3.2. 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:

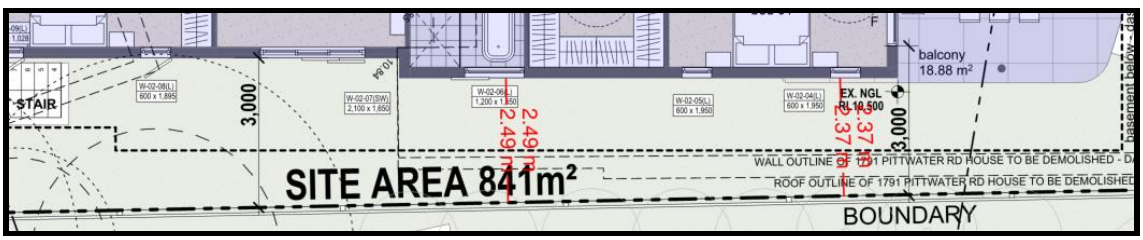
Table 2. Performance Solutions

Item	Description of Performance Solution	DTS Provision
1.	Removal of insulation requirement to basement level FRL --/120/- - fire shutter	C3.5
2.	Exit travel distance to all first floor level units (to 1797 Pittwater Rd) exceeds 6 metres to an exit (between 7-10 metres)	D1.4
3.	Exit travel from the building discharges to open space however, re-entry is needed back underneath canopy awnings before open space is reached to the street.	D1.4/D1.9
4.	Fire hydrant pumproom is accessed via an open stair rather than a fire isolated stair or access direct to open space	E1.3
5.	Weatherproofing of walls to be the subject of a performance solution as there is no Deemed to Satisfy requirements.	F1.0

3.3. BCA Compliance Matters to be Addressed

Prior to issue of future Construction Certificate the following matters will require further design development to ensure compliance is achieved with the provisions of the Building Code of Australia:-

1. Unit 02 bedroom and ensuite is setback 2370mm-2490mm from the southern boundary and will require protection of openings as this elevation is less than 3000mm in accordance with BCA Clause C3.2



ANNEXURE A DESIGN DOCUMENTATION

Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 3. Architectural Plans

Architectural Plans Prepared by Gartner Trovato Architects			
Drawing Number	**Revision**	**Date**	**Title**
DA03	A	15/09/2020	Basement + Carpark
DA04	A	15/09/2020	Ground Floor
DA05	A	9/09/2020	First Floor
DA07	A	15/09/2020	Elevation North East

ANNEXURE B ESSENTIAL SERVICES

Annexure B - Essential Services

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.

Table 4. Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Access Panels & doors/hoppers (fire rated)	**BCA2019 C3.13** (Openings in Shafts) **BCA2019 Spec C3.4** AS 1905.1:2015 (Fire Resistant Doorsets)
2.	Fire doors	**BCA2019 C3.10** (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 **BCA2019 C3.5** AS1905.1: 2015
3.	Solid Core Doors	**BCA2019 C3.11**
4.	Fire shutter (basement level FRL --/120/--)	**BCA2019 C3.5** AS1905.2
5.	Protection of external openings (Unit -02 southern elevation)	**BCA2019 C3.2/C3.4**
6.	Fire seals protecting openings in fire resisting components of the building	**BCA2019 C3.15** (Openings for service installations) AS1530.4:2014 & AS4072.1-2005
General		
7.	Portable fire extinguishers	**BCA2019 E1.6** AS 2444–2001
General Egress		
8.	Path of travel for stairways, passageway and ramps	EP&A Reg. 2000 Clauses 184-186
9.	Warning & operational signs	**BCA2019 D2.23 (**Signs on Fire Doors) **BCA2019 D3.6** (Braille Exit Signs) (Note: E4.5 (Exit Signs)) **BCA2019 E3.3** (Lift Signs)
Lifts		
10.	Access to Lift Pits > Located at lowest level or if >3m provided through an access door	**BCA2019 D1.17** (Access to Lift Pits) 'DANGER LIFT WELL – ENTRY OF UNAUTHORISED PERSONS PROHIBITED – KEEP CLEAR AT ALL TIMES'

Item	Essential Fire and Other Safety Measures	Standard of Performance
Electrical Services		
11.	Automatic fire detection & alarm: > Clause 3 – AS 3786:2014 Smoke Alarm systems powered from consumer mains to all residential SOU's, and spaced, interlinked to AS 1670.1:2018 to all common areas connected to a BOWS @ 85dB(A). > Incorporating a thermal detection system in the basement carpark **Note:** if there is a SSISEP or EWIS applies different dB(A) i.e. At bedheads not SOU doors.	**BCA2019 E2.2**, NSW Table E2.2a, Table 2.2b, **Spec E2.2a** - Clause 3 (Smoke alarm system) **Spec E2.2a** - Clause 7 (BOWS) AS 3786:2014 (Amdt 1-4)
12.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1:2018
13.	Exit signs	**BCA2019 E4.5** (Exit Signs) **BCA2019 E4.6** (Direction Signs) **BCA2019 E4.8** (Design and Operation - Exits) AS/NZS 2293.1:2018
Hydraulic Services		
14.	Fire hydrant systems > NSW Storz Couplings	**BCA2019 E1.3** AS 2419.1:2005 FRNSW Technical Sheet D15/45534.V6 issued 11.04.17, 'Compatible Hose Connections'
Mechanical Services		
15.	Mechanical air handling systems	**BCA2019 E2.2, Table E2.2a,** AS 1668.1:2015 **Note: 5.5.3 Override control** To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point. **Note:** Signage should be located at the car park entry indicating the location of the control switches.
Notes: Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1:2015 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.		

ANNEXURE C FIRE RESISTANCE LEVELS

Annexure C - Fire Resistance Levels

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

Type B Construction

Table 5. Type B Construction

Item	Class 2
Loadbearing External Walls - Less than 1.5m to a *fire- source feature* - 1.5 – less 3m from *fire- source feature* - 3 – less 9m from *a fire- source feature* - 9 – less 18m from a *fire- source feature* - 18m or more from a *fire- source feature*	90/90/90 90/60/30 90/30/30 90/30/- -/-/-
Non-Loadbearing External Walls - Less than 1.5m to a *fire- source feature* - 1.5 – less 3m from *fire- source feature* - 3m or more from a *fire- source feature*	-/90/90 -/60/30 -/-/-
Loadbearing External Columns - Less than 18m - 18m or more	90/-/- -/-/-
Non-Loadbearing External Columns	-/-/-
Common Walls & Fire Walls	90/90/90
Stair and Lift Shafts required to be fire-resisting - Loadbearing Stair & Lift shaft - Non-loadbearing Stair shaft only	90/90/90 -/90/90
Internal walls bounding sole occupancy units - Loadbearing - Non-loadbearing	60/60/60 -/60/60
Internal walls bounding public corridors, public lobbies and the like: - Loadbearing - Non-loadbearing	60/60/60 -/60/60
Other loadbearing internal walls and columns	60/-/-
Roofs	-/-/-

N.B. Due to the building being not more than four storeys there is a concession under BCA Clause 2.8 of Specification C1.1 for the class 7a parts to have the same FRL as the class 2 parts.

ANNEXURE D DETAILED BCA 2019 ASSESSMENT

Annexure D – Detailed BCA 2019 Assessment

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

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

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

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

Deemed to Satisfy Clause Assessment

Table 6. Deemed to Satisfy Clause Assessment

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

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 B Construction based upon the rise in storeys Refer to Specification C1.1 requirements at the end of this Section.	CRA – Refer Annexure F
C1.2:	Calculation of rise in storeys	The building has a rise in storeys of two (2) The land slopes away toward the northern elevation to Pittwater Road, however, the finished ground level to this elevation will ensure that the height to the underside of the basement slab is not more than 900mm. To the driveway there is a portion of external wall to the side of the ramp which is deemed to be a portion of the basement storey that extends above the ramp which is calculated towards the rise in storeys. The height of the driveway opening at the shutter is approximately 2470mm which equates to approximately 1.25m average height above finished ground (ie ramp level). It is possible to achieve not more than 1000mm average height above finished ground (ie ramp level) if the shutter is brought forward towards Park Street so that the height between the ramp and the underside of the carpark roof slab is not more than 2000mm. To ensure at least 2200mm clearance is achieved as per AS2890 requirements it would be necessary for a step to be provided in the carpark entrance roof slab in the vicinity of the planter. This is possible to be worked through with design development to limit rise in storeys to two (2).	CRA – Refer Annexure F
C1.3:	Buildings of multiple classification	Informational	Noted
C1.4:	Mixed Types of construction	The building is a single type of construction	Noted
C1.5:	Two Storey Class 2, 3 or 9c buildings	N/A – the building is more than 2x storeys and does not have independent egress from each sole occupancy unit to the upper level.	N/A
C1.6:	Class 4 Parts of building	N/A	N/A

Section C: Fire Resistance			
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.	CRA – Refer Annexure F
C1.9:	Non-combustible building elements	(a) In a building required to be of Type A or B construction, the following building elements and their components must be *non-combustible*: (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (ii) The flooring and floor framing of lift pits. (iii) Non-loadbearing internal walls where they are required to be fire-resisting. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of *non-combustible* construction in— (i) a building required to be of Type A construction; and (ii) a building required to be of Type B construction, subject to C2.10, in— (A) a Class 2, 3 or 9 building; and (B) Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys. (c) A loadbearing internal wall and a loadbearing *fire wall*, including those that are part of a loadbearing shaft, must comply with Specification C1.1. (d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants, termite management systems, Glass including laminated glass, thermal breaks associated with glazing systems and damp-proof courses. (e) The following materials, may be used wherever a *non-combustible* material is required: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet. (iv) Fibre-reinforced cement sheeting.	CRA – Refer Annexure F

Section C: Fire Resistance		
	(v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. (vi) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5. (vii) Bonded laminated materials where— (A) each lamina, including any core, is *non-combustible*; and (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and (C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.	
C1.10: Fire hazard properties	Fire hazard properties of internal linings, materials and assemblies must comply with C1.10 of the BCA and Specification C1.10, including floor, wall and ceiling linings, air-handling ductwork, lift cars, insulation, *sarking-type materials* and attachments, or be considered *non-combustible*.	CRA – Refer Annexure F
C1.11: Performance of external walls in fire	N/A	N/A
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.	Noted
C1.13: Fire-protected timber: Concession	N/A	N/A
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be *non-combustible* unless it is one of the following: (a) An ancillary element that is *non-combustible*. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grille not more than 2 m² in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like.	CRA – Refer Annexure F

Section C: Fire Resistance		
	(f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and (iii) does not extend beyond one fire compartment; and (iv) is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that— (i) meets the relevant requirements of Table 4 of Specification C1.10 as for an internal element; and (ii) serves a storey— (A) at ground level; or (B) immediately above a storey at ground level; and (iii) does not serve an *exit*, where it would render the *exit* unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) A paint, lacquer or a similar finish. (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k).	
Part C2 – Compartment and Separation		
C2.0: Deemed-to-Satisfy Provisions	Informational	Noted
C2.1: Application of Part	Informational - 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

Section C: Fire Resistance			
C2.2:	General floor area and volume limitations	The size of *fire compartments* in the building must not exceed that specified in Table C2.2. The carpark is 1807m2 and the residential levels are not constrained by fire compartment floor area due to the bounding construction provided.	Complies
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	As the building is Type B Construction there is no spandrel separation	N/A
C2.7:	Separation by fire walls	N/A – fire walls not needed to building	N/A
C2.8:	Separation of classifications in the same storey	There are no different classifications located in same storey.	N/A
C2.9:	Separation of classifications in different storeys	Floors separating storeys of different classifications must have an *FRL* of not less than that prescribed in Specification C1.1 for the classification of the lower storey.	CRA – Refer Annexure F
C2.10:	Separation of lift shafts	Passenger lifts must be separated from the remainder of the building by enclosure in a fire rated shaft achieving an *FRL* prescribed by Table 3 of Specification C1.1.	CRA – Refer Annexure F
C2.11:	Stairways and lifts in one shaft	N/A	N/A

Section C: Fire Resistance		
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 > a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more. 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 F
C2.13: Electricity supply system	N/A	N/A
C2.14: Public corridors in Class 2 and 3 Buildings	N/A	N/A
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 and joints between panels in external walls of pre-cast concrete panel construction if, in all cases they are not larger than necessary for the purpose; and (ii) Non-combustible ventilators for subfloor or cavity ventilation, if each does not exceed 45 000 mm2 in face area and is spaced not less than 2 m from any other ventilator in the same wall; and (iii) Openings in the vertical plane formed between building elements at the construction edge or 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,	Noted

Section C: Fire Resistance			
		(aa) A floor other than a floor that separates a part not used as a carpark, providing the connected floors comply as a single fire compartment for the purposes of all other requirements of the Deemed-to-Satisfy Provisions of Sections C, D and E. (b) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings in building elements required to be fire-resisting include doorways, windows (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL. (c) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings, other than those covered under (a)(iii), between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the building, are deemed to be openings in an external wall.	
C3.2:	Protection of openings in external walls	The building is setback 2365-2905mm from the southern boundary and will require protection as this elevation is less than 3000mm as required for a building of Type B Construction	FI refer to part 3.3 of Report
C3.3:	Separation of external walls and associated openings in different fire compartments	N/A – there are adjacent class 2 units that are located within 6m from each other for example units 10/11 & 14/15, however, as stated in the Guide to this clause the adjacent sole occupancy units are not separate fire compartments requiring protection in accordance with this clause.	N/A
C3.4:	Acceptable methods of protection	Where windows to the southern elevation are protected in accordance with BCA Clause C3.2 it would be necessary for the protection method to consider the natural ventilation requirements to the rooms. To be further assessed at Construction Certificate stage. Fire doors, fire windows and fire shutters must comply with BCA Specification C3.4.	FI refer to part 3.3 of Report CRA – Refer Annexure F
C3.5:	Doorways in fire walls	It is proposed to install a fire compartment fire wall to the basement level carpark. This will reduce the number of vehicles per fire compartment to less than 40 and delete requirement for sprinklers as per Clause E1.5. Whilst not detailed at this stage it is likely that the fire shutter will only achieve FRL --/120/-- and will not meet the 30 minute insulation requirements. At Construction Certificate stage it will be necessary for a fire engineered performance solution.	PS Refer to Part 3.2 of Report
C3.6:	Sliding fire doors	N/A	N/A

Section C: Fire Resistance			
C3.7:	Protection of doorways in horizontal exits	N/A	N/A
C3.8:	Openings in fire-isolated exits	The only fire isolated exit is located to the southern end of the basement carpark level. The entry door will require a fire resistance level of FRL--/60/30.	CRA – Refer Annexure F
C3.9:	Service penetrations in fire-isolated exits	No services are permitted into the fire isolated exit shafts.	CRA – Refer Annexure F
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 mm2 in area.	CRA – Refer Annexure F
C3.11:	Bounding Construction: Class 2, 3 and 4 Buildings	As a building of Type B Construction, doorways to sole occupancy units must be protected by self–closing solid core doors. There are doors shown throughout and there are no windows or sidelights shown to bounding construction.	CRA – Refer Annexure F
C3.12:	Openings in floors and ceilings for services	Where services pass through a floor which is required to achieve an *FRL* or a ceiling required to have a *resistance to the incipient spread of fire*, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15.	CRA – Refer Annexure F
C3.13:	Openings in shafts	Openings in shafts must be protected by: (a) if it is in a sanitary compartment – a door or panel which together with its frame, is *non-combustible* or has an *FRL* of not less than –/30/30; or (b) a self-closing –/60/30 fire door or hopper; or (c) an access panel having an *FRL* of not less than –/60/30; or (d) if the shaft is a garbage shaft – a door or hopper of *non-combustible* construction.	CRA – Refer Annexure F
C3.15:	Openings for service installations	Where services pass through an element which is required to achieve an *FRL* (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15.	CRA – Refer Annexure F

Section C: Fire Resistance		
	Note: contractors should check with PCA to confirm compliance with their proposed fire stopping method.	
C3.16: Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4:2014 to achieve the required *FRL*.	CRA – Refer Annexure F
C3.17: Columns protected with lightweight construction to achieve an FRL	A column protected by lightweight construction to achieve an *FRL* which passes through a building element that is required to have an *FRL* or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required *FRL* or resistance to the incipient spread of fire.	CRA – Refer Annexure F
Specification C1.1 – Fire-Resisting Construction		
2.0: General Requirements	Informational	Noted
2.1: Exposure to fire-source features	A building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the *fire-source feature*, or vertical projection of the feature, is not obstructed by another part of the building that– (i) has an *FRL* of not less than 30/–/–; and (ii) is neither transparent nor translucent.	Noted
2.2: Fire protection for a support of another part	Where a part of a building required to have an *FRL* depends upon direct vertical or lateral support from another part to maintain its *FRL*, that supporting part must have an *FRL* not less than that required by other provisions of this Specification; and if located within the same *fire compartment* as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	CRA – Refer Annexure F
2.3: Lintels	A lintel must have the FRL required for the part of the building in which it is situated unless it does not contribute to the support of a fire door, fire window or fire shutter and meets the requirements of Spec C1.1 clause 2.3 (a) & (b).	CRA – Refer Annexure F
2.4: Attachments not to impair fire-resistance	The method of attaching or installing a finish, lining, ancillary element or service installation to a building element must not reduce the fire-resistance of that element to below that required.	CRA – Refer Annexure F
2.5: General concessions	Structures on roofs — A *non-combustible* structure situated on a roof need not comply with the other provisions of this Specification if it only contains—	CRA – Refer Annexure F

Section C: Fire Resistance			
		(i) lift motor equipment; or (ii) one or more of the following: (A) Hot water or other water tanks. (B) Ventilating ductwork, ventilating fans and their motors. (C) Air-conditioning chillers. (D) Window cleaning equipment. (E) Other service units that are *non-combustible* and do not contain flammable or combustible liquids or gases.	
2.6:	Mezzanine floors: Concession	N/A	N/A
2.7:	Enclosure of shafts	Fire-isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction having an *FRL* required for the walls of a non-load-bearing shaft in the same building, as per specification C1.1. This fire rating is required in two directions. The above does not apply to shafts extending beyond the roof covering, other than fire isolated stair and lift shafts and the bottom of *non-combustible* shafts laid directly on the ground.	CRA – Refer Annexure F
2.8:	Carparks in Class 2 and 3 Buildings	The building is not more than 4x storeys so the basement level carpark is permitted to have the same FRLs as the class 2 part which is 90 minutes. However, due to the carpark also being a “roof as open space” then it still requires FRL 120 minutes.	Noted
2.9:	Residential Aged Care building: Concession	N/A	N/A
4.0:	Type B fire-resisting construction	Noted	-
4.1:	Fire-resistance of building elements	> The FRL’s of all elements are to be in accordance with the FRL’s detailed in the Table contained within Part 4.0 of this report.	CRA – Refer Annexure F

Section C: Fire Resistance			
		> External walls, common walls and the flooring and floor framing of lift pits must be *non-combustible*. (Note: insulation and sarking used must be *non-combustible*) > Internal walls required to be fire rated must extend to– (i) to the underside of the floor next above; or (ii) the underside of a roof complying with Table 3; or (iii) if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the *non-combustible* roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other combustible building elements; or (iv) a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes. > Load bearing internal walls (including those part of a loadbearing shaft) and fire walls must be of concrete or masonry. > Non-loadbearing internal walls required to be fire rated, as well as non-load bearing lift, ventilating, pipe, garbage or similar shaft wall must be of non-combustible construction. **Note:** This includes *non-combustible* insulation. When an insulation material is not certified as *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage. > The *FRL*s specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5m of a window and are exposed through that window to a *fire-source feature*. > It should also be noted that if Dincel material is to be used as an element where the BCA requires such element to be *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage	
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	CRA – Refer Annexure F

Section C: Fire Resistance			
		(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.	
4.	Wall and ceiling linings	(a) A wall or ceiling lining system must comply with the *group number* specified in Table 3 and for buildings not fitted with a sprinkler system complying with Specification E1.5 have– (i) a *smoke growth rate index* not more than 100; or (ii) an *average specific extinction area* less than 250 m2/kg. (b) A *group number* of a wall or ceiling lining and the *smoke growth rate index* or *average specific extinction area* must be determined in accordance with AS 5637.1:2015.	CRA – Refer Annexure F
5.	Air-handling ductwork	Rigid and flexible ductwork must comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.	CRA – Refer Annexure F
6.	Lift cars	Materials used as— (a) floor linings and floor coverings must have a *critical radiant flux* not less than 2.2; and (b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1:2015.	CRA – Refer Annexure F
7.	Other materials	Materials and assemblies not included in Clauses 3, 4, 5 or 6 must not exceed the indices set out in Table 4.	CRA – Refer Annexure F
Specification C3.4 – Fire Doors, Smoke Doors, Fire Window and Shutters			
1.	Scope	Noted	-
2.	Fire doors	Fire doorsets must comply with AS 1905.1:2015 and not fail by radiation through any glazed part during the period specified for integrity in the required *FRL*.	CRA – Refer Annexure F
3.	Smoke doors	N/A	N/A
4.	Fire shutters	N/A	N/A

Section C: Fire Resistance			
5.	Fire windows	N/A	N/A

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	The basement has two exits as required.	Complies
D1.3:	When fire-isolated stairways and ramps are required	<u>Basement</u> -The stair 01 is a rising non-fire isolated stair. The descending stair 02 is a separate stair but as there is no separation between stairs then it is not uncommon for some certifiers to consider these stairs a single stair. For conservatism the stair is considered a single stair and as this clause permits a stair for a class 2 building of 3x consecutive storeys plus an additional storey (if it is only for the accommodation of vehicles) then the stair may be non-fire isolated. And therefore, the stair is permitted to be a non-fire isolated stair. Furthermore, due to the building being low-rise there is concession included in Clause 2.8 of Spec C1.1 for reduced FRLs to the carpark to be the same as that of the Class 2 hence, no higher FRL fire compartment and no fire wall separation requirement. -The stair 02 to the southern end of the combined carpark only serves the basement level and may be non-fire isolated however, it is not uncommon for a fire isolated stair to be provided as this assists exit travel distance measurement and the stair may then have the benefit of a single handrail and narrower width as compared to a non-fire isolated stair <u>Upper levels</u> The residential stairways descend a single flight only and may be non-fire isolated.	FI Refer to Part 2.3 of Report

Section D: Access and Egress			
D1.4:	Exit travel distances	Basement The exit travel distance is less than 20m to a point of choice and then not more than 40m to an exit as required. Ground Floor Exit travel distance from ground floor units leads to a central courtyard, however, due to the need to re-enter the building and travel under the canopies between the buildings then open space is not reached until the buildings are cleared and this results in exit travel distance in excess of 20 metres (24 metres to clear initial canopy and 34m to clear entry canopy at the allotment boundary so a performance solution is required due to this technical non-compliance. First Floor Exit travel distance from units at this level is generally greater than 6m to an exit at the top riser of the non-fire isolated stair (between 7-10m) and will be required to be addressed within a performance solution report.	PS Refer to Part 3.2 of Report
D1.5:	Distance between alternative exits	Distance between alternative exits is less than 60 metres apart.	Complies
D1.6:	Dimensions of exits and paths of travel to exits	In a required *exit* or path of travel to an *exit*– > the unobstructed height throughout *exits* and paths of travel to *exits* must not be less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and > the unobstructed width of each *exit* or path of travel to an *exit*, except for doorways must be not less than 1m; > the unobstructed width of doorways must be not less than 750 mm, unless providing access for 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 F
D1.7:	Travel via fire-isolated exits	There are no fire isolated stairs	N/A
D1.8:	External stairways or ramps in lieu of fire-isolated exits	N/A	N/A

Section D: Access and Egress		
D1.9: Travel by non-fire-isolated stairways or ramps	The northern stair 01 to the basement is a non-fire isolated stair and travel by this stair complies with this clause as the stair discharges adjacent to the northern walkway leading to Pittwater Rd. Stair 02 is a non-fire isolated stair and travel by this stair complies with this clause as the stair discharges adjacent to the northern walkway leading to Pittwater Rd. Stair 03 is a non-fire isolated stair and travel by this stair does not comply with this clause as the stair discharges to the central courtyard which is not open space due to it being necessary to walk beneath canopy roof structures before reaching open space leading to the street to each side of the building and will require a performance solution. Basement central stair – this stair serves the carpark and fire hydrant pumproom. This stair discharges as required. The southern carpark stair to the basement is a non-fire isolated stair and travel by this stair complies with this clause as the stair discharges adjacent to the southern end of the building leading to Park Street.	PS Refer to Part 3.2 of Report
D1.10: Discharge from exits	> Exits are not able to be blocked at the point of discharge as required. > The path of travel to the road has an unobstructed width of not less than 1m. min width as required. > 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 are as far apart as practical. The current basement carpark stairs discharge separately as required. The external egress path up the driveway requires a handrail to one side in accordance with BCA Clause D2.17.	Complies CRA – Refer Annexure F
D1.11: Horizontal exits	N/A – There is a fire shutter and fire door centrally to basement carpark level however, it does not need to be relied upon as a horizontal exit due to the nearby central exit adjacent to pumproom.	N/A
D1.12: Non-required stairways, ramps or escalators	N/A	N/A
D1.13: Number of persons accommodated	There are not more than 5 persons per dwelling. And not more than 20 persons to basement level.	Noted
D1.14: Measurement of distances	Informational – The nearest part of an *exit* means in the case of—	Noted

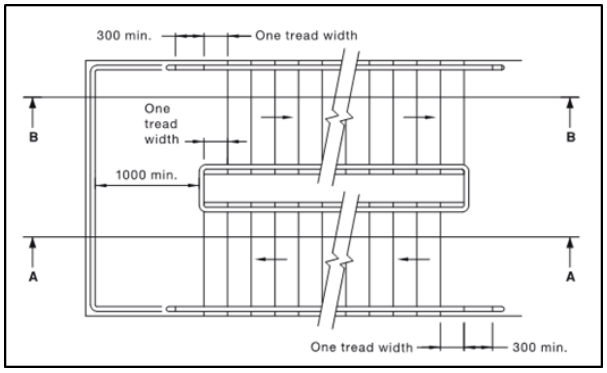
Section D: Access and Egress		
	(a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the 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	N/A	N/A
D1.17: Access to lift pits	Access to the lift pit is assumed to be through the bottom landing doors as the pit is assumed to be less than 3m deep.	CRA – Refer Annexure F
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 basement fire isolated stair 02 will require structural engineer to certify collapse as per this clause	CRA – Refer Annexure F
D2.3: Non-fire-isolated stairways and ramps	Buildings more than 2 storeys Required stairs and ramps (including landings and any supporting building elements) must be constructed according to D2.2, or only of- (a) reinforced or prestressed concrete; or	N/A

Section D: Access and Egress			
		(b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue".	
D2.4:	Separation of rising and descending stair flights	N/A – does not apply to non-fire isolated stairs	N/A
D2.5:	Open access ramps and balconies	Smoke hazard management does not apply to the open balconies. Design to be assessed by electrical consultant at CC stage.	CRA – Refer Annexure F
D2.6:	Smoke lobbies	N/A	N/A
D2.7:	Installations in exits and paths of travel	> Access to service shafts and services other than to fire-fighting or detection equipment must not be provided from a fire-isolated stairway or fire-isolated passageway. > Gas or other fuel services must not be installed in a required *exit*. > Any electricity meters, distribution boards or ducts, or telecommunications distribution boards or equipment installed in corridors/hallways/lobbies or the like must be enclosed with *non-combustible* construction or a fire protective covering with doorways suitably sealed against smoke spread. > Electrical wiring may be installed in a fire-isolated *exit* if the wiring is associated with: ○ a lighting, detection, or pressurization system serving the *exit*; or ○ a security, surveillance or management system serving the *exit*; or ○ an intercommunication system or an audible or visual alarm system in accordance with D2.22; or ○ the monitoring of hydrant or sprinkler isolating valves.	CRA – Refer Annexure F
D2.8:	Enclosure of space under stairs and ramps	N/A – there is no storage	N/A

Section D: Access and Egress		
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	Majority of walkways are not more than 1:20 1:14 ramps are proposed to the ground floor northern common areas nearby stair 02. The ramps to comply with AS1428.1 and will need to be further assessed by the access consultant to ensure that handrail extensions do not reduce egress path to the main walkway.	CRA – Refer Annexure F
D2.11: Fire-isolated passageways	There are no fire isolated passageways	N/A
D2.12: Roof as open space	The carpark slab roof forms part of the path of travel from the central courtyard and will require the roofslab to be FRL120/120/120. Hence, no concessions for reduced FRL permitted.	CRA – Refer Annexure F
D2.13: Goings and risers	Stairways must comply with the following: > Stairways must have not more than 18 and not less than 2 risers in each flight; > Goings must be between 250 mm and 355 mm; > 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;	CRA – Refer Annexure F

<table>
<tr><th colspan="3">Section D: Access and Egress</th></tr>
<tr><td></td><td>
> Treads must be of solid construction (not mesh or perforated) if the stairway is more than 10 m high or connects more than 3 storeys.
> In the case of a required stairway, no winders in lieu of a landing
> Treads must have a surface or nosing strip with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with AS 4586-2013 Slip resistance classification of new pedestrian surface materials.
</td><td></td></tr>
<tr><td>D2.14: Landings</td><td>
Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Condition</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr>
</table>
</td><td>CRA – Refer Annexure F</td></tr>
<tr><td>D2.15: Thresholds</td><td>
The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless–
(a) in a building required to be accessible, the doorway–
(i) opens to a road or open space; and
(ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1:2009; or
(b) in other cases–
(i) the doorway opens to a road or open space, external stair landing or external balcony; and
</td><td>CRA – Refer Annexure F</td></tr>
</table>

Section D: Access and Egress		
	(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. The fire door to the basement level (1793 side) nearby the fire shutter is required to step over a kerb and has a 1:20 walkway at the door threshold. It will be necessary to delete the kerb and provide a level (1:40) landing in the vicinity of the vehicle ramp. This will result in the vehicle ramp gradient increasing however, it is unlikely to be more than 1:8 permitted by egress provisions of this clause. If Access consultant raises issue the gradient may need to be altered at Construction Certificate stage.	
D2.16: Barriers to prevent falls	Balustrades must be provided to stairs and balconies, driveway ramps etc where there is a fall of more than 1m. Balustrades must comply with the following: <u>Balustrade minimum heights</u> > 865 mm above stair nosings; > 865 mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length; and > 1 m in all other locations. <u>Balustrade openings – fire-isolated stairs</u> > maximum openings of 300 mm; or > where rails are used– o a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and o the opening between rails must not be more than 460 mm <u>Balustrade openings – other than fire-isolated stairs</u> > A 125 mm sphere must not be able to pass through any opening and for stairways, the 125 mm is measured above the nosing line of the stair treads. <u>Climbability – other than fire-isolated stairs</u> For floors more than 4m above the surface beneath, the balustrade must not incorporate any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that could facilitate climbing.	CRA – Refer Annexure F

Section D: Access and Egress		
D2.17: Handrails	Handrails to stairways must: > be located along at least one side of the ramp or flight (a flight being 2 or more risers); and > located along each side if the total width of the stairway or ramp is 2m or more; and > be fixed at a height of not less than 865 mm above the nosings of the stair treads and the floor surface of the ramp, landing, or the like; and > be continuous between stair flight landings and have no obstruction that will break a hand-hold. > be constructed to comply with clause 12 of AS 1428.1:2009 (including handrails to the fire stairs). > Handrails in common areas (other than fire stairs) must also accord with D3.3. Clause 12 of AS 1428.1:2009 A required *exit* (fire isolated or non-fire isolated) serving an area required to be accessible must be fitted with handrails in accordance with Clause 12 of AS 1428.1:2009. The handrail shall follow the angle of the nosings and be consistent height through the stair flight and any landings with no vertical sections at the landing. Compliance can be achieved via offset risers at the bottom of the flight in accordance with Figure 28 in AS 1428.1:2009 or with larger landings to accommodate required handrail extensions.  Figure 28 in AS 1428.1:2009 **Note: The handrail to the main residential non-fire isolated stair currently extends up continually around stair flights and landings and to the top landing. The issue with this design is that the handrail is to be in the range 865-1000mm throughout stair flights but more than 1000mm where landings are more than 500mm**	CRA – Refer Annexure F

Section D: Access and Egress		
	length. And at the top landing the handrail needs to comply with Clause 11 of AS1428.1-2009 and have a 300mm horizontal extension at 865-1000mm rather than transitioning up to 1000mm+ balustrade height. Therefore, with design development it is recommended that the handrail is provided separate to the balustrade at the landings otherwise a non-compliance with occur.	
D2.18: Fixed platforms, walkways stairways and ladders	N/A	N/A
D2.19: Doorways and doors	> *Exit* doors that are power operated must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source and if leading to road or open space, open automatically if there is a power failure or on the activation of a fire or smoke alarm anywhere in the *fire compartment* served by the door. > A power operated door in a path of travel to a required *exit* must be able to be opened manually under a force of not more than 110 N if there is a malfunction of the power source.	CRA – Refer Annexure F
D2.20: Swinging doors	Swinging doors in a required *exit* must not encroach– (i) at any part of its swing by more than 500 mm on the required 1m width of the *exit* and (ii) when fully open, by more than 100 mm on the required 1m *exit* width; and the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door. A swinging door in a required *exit* must swing in the direction of egress unless– > it serves a building or part with a floor area not more than 200 m2, it is the only required *exit* from the building or part and it is fitted with a device for holding it in the open position; or > it serves a sanitary compartment or airlock (in which case it may swing in either direction). The front entrance doors to the residential lobbies opens inwards. As the lobbies have a floor area of less than 200m2 and the units do not accommodate large populations the doors are permitted to open inwards subject to hold open devices.	CRA – Refer Annexure F
D2.21: Operation of latch	All doors in a required *exit* or forming part of a required *exit* AND doors in a path of travel to a required *exit* must be readily openable without a key from the side that faces a person seeking egress, by–	CRA – Refer Annexure F

Section D: Access and Egress		
	(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 (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. (iii) where the latch operation device referred to in (ii) is not located on the door leaf itself— (A) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located— (aa) not less than 500 mm from an internal corner; and (bb) for a hinged door, between 1 m and 2 m from the door leaf in any position; and (cc) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position. (B) braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. The above requirements do not apply to a door that – (i) serves only or is within a *sole-occupancy unit* in a Class 2 building; or (ii) serves a *sole-occupancy unit* in a Class 5, 6, 7 or 8 building with a floor area not more than 200m2; or (iii) are fitted with a fail-safe device which automatically unlocks the door upon the activation of an AS 1670.1 detection system installed throughout the building and is readily openable when unlocked.	
D2.22: Re-entry from fire-isolated exits	N/A	N/A
D2.23: Signs on doors	Signage in accordance with this clause is to be located on all fire and smoke doors stating “Fire Safety Door, Do Not Obstruct, Do Not Keep Open” and the discharge door from the fire isolated stairways are to state “Fire Safety Door – Do Not Obstruct” in capital letters not less than 20mm in height. Note: Fire signage in accordance with clause 183 of the Environmental Planning and Assessment Regulation 2000 is also required.	CRA – Refer Annexure F

Section D: Access and Egress			
D2.24:	Protection of openable windows	(a) Bedroom windows must be provided with protection if the floor below the window is 2m or more above the surface beneath. (b) Where the lowest level of the window opening is less than 1.7m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with– (A) a device to restrict the window opening; or (B) a screen with secure fittings. (ii) A device or screen required by (i) must– (A) not permit a 125 mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the– (aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (c) A barrier with a height not less than 865 mm above the floor is required to an openable window– (i) in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and (ii) where the floor below the window is 4m or more above the surface beneath if the window is not covered by (a). (d) A barrier covered by (c) except for (e) must not– (i) permit a 125 mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. (e) A barrier required by (c) to an openable window in— (i) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps 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.	CRA – Refer Annexure F

Section D: Access and Egress			
D2.25:	Timber stairways: concession	N/A	N/A
Part D3 – Access for People with A Disability			
D3.0:	Deemed-to-Satisfy Provisions	Access to be addressed by separate access consultant	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 m2, a fire hydrant system complying with AS 2419.1:2005 must be provided to serve the building. It is proposed to have a hydrant pumproom at basement level which is served by an external stair. The stair is not fire isolated as it does not have an airlock and associated fire isolated shaft at ground floor level. Therefore, a performance solution would technically be needed to permit the proposed stair arrangement. Details to be firmed up at Construction Certificate stage.	PS Refer to Part 3.2 of Report
E1.4:	Fire hose reels	A fire hose reel system is not required to Class 2 parts of the building. As the carpark is more than 500m2 a fire hose reel system is required.	CRA – Refer Annexure F
E1.5:	Sprinklers	The building has a rise in storeys of three (3) so is not required to be sprinkler protected in accordance with this clause. The development is a SEPP seniors development but based upon information supplied it is not considered to meet the definition of a “residential aged care building” as the units are independent living units and 10% or more of residents aren’t considered to need physical assistance in conducting daily activities or to evacuate the building.	N/A

Section E: Services and Equipment			
		The basement level carpark combines both the existing approved carpark to 1795-1797 Pittwater Rd and the carpark to 1793 Pittwater Road and results in a combined carspace number of more than 40 vehicles (12 + 33 = 45). It is proposed to install a fire shutter to basement level which will reduce carparking spaces to not more than 40 per fire compartment. Therefore, sprinklers are not required.	
E1.6:	Portable fire extinguishers	Portable fire extinguishers must be provided in accordance with clause E1.6 & Table E1.6 of the BCA and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444:2001. For the Class 2 parts, portable fire extinguishers must be– (i) an ABE type fire extinguisher; and (ii) a minimum size of 2.5 kg; and (iii) distributed outside a *sole-occupancy unit*— (A) to serve only the storey at which they are located; and (B) so that the travel distance from the entrance doorway of any *sole-occupancy unit* to the nearest fire extinguisher is not more than 10 m.	CRA – Refer Annexure F
E1.8:	Fire control centres	N/A	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	N/A
Part E2 – Smoke Hazard Management			
E2.0:	Deemed-to-Satisfy Provisions	Informational	Noted

Section E: Services and Equipment			
E2.1:	Application of Part	Informational	Noted
E2.2:	General requirements (including Tables E2.2a and E2.2b)	**Class 2 parts** Class 2 parts must be provided with an automatic smoke detection and alarm system complying with BCA Specification E2.2a. Note: Smoke alarms in sole occupancy units are now required to be interconnected. **Class 7a buildings** A Class 7a building including a basement provided with a mechanical ventilation system in accordance with AS 1668.2:2012 must comply with clause 5.5 of AS 1668.1:2015 except that fans with metal blades for operation at normal temperatures may be used, and the electrical power and control cabling need not be fire rated.	CRA – Refer Annexure F
E2.3:	Provisions for special hazards	N/A	N/A
Specification E2.2a – Smoke Detection and Alarm System			
1.	Scope	Noted	Noted
2.	Type of system	A Clause 3 smoke alarm is the minimum system required	Noted
3.	Smoke alarm system	AS3786 smoke alarms to be provided to each sole occupancy unit. Within common areas an interlinked smoke alarm system is required. This should be extended into the carpark to activate the operation of the carpark ventilation system as per Clause 5.5 of AS1668.1	CRA – Refer Annexure F
4.	Smoke detection system	A smoke detection system is not formally required if a Clause 3 system is installed. However, if a panel based system is preferred a Combined Clause 3 &4 system could be used as per Clause 5 below	N/A
5.	Combined smoke alarm and smoke detection system	A combined system is possible but not required where a Clause 3 system is installed. Where panel based system is proposed a combined system in accordance with this clause could be used whereby smoke detectors are installed to common area and a Building Occupant Warning System as per Clause 7.	Noted

Section E: Services and Equipment			
6.	Smoke detection for smoke control system	N/A	N/A
7.	Building occupant warning system	The inbuilt sounders to the smoke alarms may be relied upon as the BOWS subject to 85dBa at the doorways	CRA – Refer Annexure F
8.	System Monitoring	System monitoring is not required	N/A
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 F
E3.2:	Stretcher facility in lifts	The building has an effective height of less than 12m and does not require a stretcher facility	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 F
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.	CRA – Refer Annexure F
E3.6:	Passenger lifts	In an accessible building, every passenger lift must be one of the types specified in Table E3.6a, have accessible features in accordance with Table E3.6b, and not rely on a constant pressure device for its operation if the lift car is fully enclosed. The lift car sizes need to be at least 1100x1400mm lift car.	CRA – Refer Annexure F
E3.7:	Fire service controls	The building has an effective height of less than 12m and does not require fire service controls	N/A
E3.8:	Aged care buildings	N/A	N/A

Section E: Services and Equipment			
E3.9:	Fire service recall switch	N/A	N/A
E3.10:	Lift car service drive control switch	N/A	N/A
Specification E3.1 – Lift Installations			
1.	Scope	Noted	-
2.	Lift cars exposed	The lift car is not exposed	N/A
3.	Lift car emergency lighting	Emergency lighting required to lift	CRA – Refer Annexure F
4.	Cooling of lift shaft	N/A	N/A
5.	Lift foyer access	The lift foyer is not secure and egress is possible at all times	Complies
6.	Emergency access doors in a single enclosed lift shaft	The lift shaft is not a size that requires emergency access	N/A
Part E4 – Visibility In An Emergency, Exit Signs And Warning Systems			
E4.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E4.2:	Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with Clause E4.2 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.3:	Measurement of distance	Informational	Noted

Section E: Services and Equipment			
E4.4:	Design and operation of emergency lighting	The emergency lighting system must comply with AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.5:	Exit signs	*Exits* signs are to be provided above or adjacent to a door providing egress as well as directional signage throughout the entire development where necessary.	CRA – Refer Annexure F
E4.6:	Direction signs	Where an *exit* is not readily apparent, directional signage is to be installed indicating the direction of egress.	CRA – Refer Annexure F
E4.7:	Class 2 and 3 buildings and Class 4 Parts: Exemptions	Non-illuminated exit signs may be used to residential areas	Noted
E4.8:	Design and operation of exit signs	*Exit* signs must comply with AS/NZS 2293.1:2018 and be clearly visible at all times when the building is occupied.	CRA – Refer Annexure F
E4.9:	Emergency warning and intercom systems	N/A	N/A

Section F: Health and Amenity			
Part F1 – Damp and Weatherproofing			
F1.0:	Deemed-to-Satisfy Provisions	*Performance Requirement* FP1.4, for the prevention of the penetration of water through external walls, must be complied with. There are no Deemed-to-Satisfy Provisions for this *Performance Requirement* in respect of external walls.	PS Refer to Part 3.2 of Report
F1.1:	Stormwater drainage	Stormwater drainage to comply with AS/NZS 3500.3:2003.	CRA – Refer Annexure F
F1.4:	External above ground membranes	Waterproofing membranes for external above ground use to comply with AS 4654 Parts 1 and 2:2012.	CRA – Refer Annexure F

Section F: Health and Amenity			
F1.5:	Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	CRA – Refer Annexure F
F1.6:	Sarking	*Sarking-type materials* used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2:1994.	CRA – Refer Annexure F
F1.7:	Water proofing of wet areas in buildings	Wet areas must be constructed in accordance with AS 3740:2010 and F1.7 of the BCA.	CRA – Refer Annexure F
F1.9:	Damp-proofing	Moisture is to be prevented from reaching the walls above a damp-proof course, and the underside of the suspended floors.	CRA – Refer Annexure F
F1.10:	Damp-proofing of floors on the ground	If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870:2011 (N/A to areas that do not require weatherproofing – refer specific clause exemptions).	CRA – Refer Annexure F
F1.11:	Provision of floor wastes	In Class 2 or 3 buildings or Class 4 part of a building, a bathroom or laundry is to have a floor waste where the floor is graded to the floor waste to permit the drainage of water.	CRA – Refer Annexure F
F1.12:	Sub-floor ventilation	N/A	N/A
F1.13:	Glazed Assemblies	Glazed assemblies are to comply with AS 2047:2014 and AS 1288:2006.	CRA – Refer Annexure F
Part F2 – Sanitary and Other Facilities			
F2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F2.1:	Facilities in residential buildings (including Table F2.1)	Each SOU must be provided with sanitary facilities; a kitchen sink; facility for the preparation and cooking of food; a bath or shower; a closet pan; wash basin; laundry wash tub and space for a washing machine and dryer.	CRA – Refer Annexure F

Section F: Health and Amenity			
F2.2:	Calculation of number of occupants and facilities	Informational – (a) The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means (b) Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females (c) In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility required for people with a disability may be counted once for each sex (d) For the purpose of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels	CRA – Refer Annexure F
F2.3:	Facilities in Class 3 to 9 buildings (including Table F2.3)	No facilities for staff required	N/A
F2.4:	Accessible sanitary facilities (including Table F2.4)	N/A	N.A
F2.5:	Construction of sanitary compartments	The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F2.5, between the closet pan within the sanitary compartment and the doorway.	CRA – Refer Annexure F
F2.6:	Interpretation: urinals and washbasins	Informational– (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—	Noted

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		(i) an individual basin; or (ii) a part of a hand washing trough served by a single water tap.	
F2.8:	Waste Management	N/A	N/A
F2.9:	Accessible adult change facilities	N/A	N/A
Part F3 – Room Sizes			
F3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F3.1:	Height of rooms and other spaces	(a) The height of rooms and other spaces must be not less than— (b) in a Class 2 part of a building— (i) a kitchen, laundry, or the like — 2.1 m; and (ii) a corridor, passageway or the like — 2.1 m; and (iii) a habitable room excluding a kitchen — 2.4 m; and (iv) in a room or space with a sloping ceiling or projections below the ceiling line (v) within— (A) a habitable room— (aa) in an attic — a height of not less than 2.2 m for not less than two thirds of the floor area of the room or space; and (bb) in other rooms — a height of not less than 2.4 m for not less than two thirds of the floor area of the room or space; and (B) a non-habitable room — a height of not less than 2.1 m for not less than two thirds of the floor area of the room or space; and (aa) when calculating the floor area of a room or space, any part that has a ceiling height of less than 1.5 m is not included; and (vi) the number of persons accommodated must be calculated according to D1.13.	CRA – Refer Annexure F

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	The ceiling heights throughout is unknown without detailed sections but is likely to comply given the height requirements of SEPP65/apartment design guide. The stairs to the 1793 site protrude into unit 02 and may result in 2200mm height at the lobby which is acceptable as only 2100mm is needed to corridors.	
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.	Complies
F4.2: Methods and extent of natural lighting	(a) Natural light must be provided by: (i) Windows: (A) with an aggregate light transmitting area of not less than 10% the floor area of the room; and (B) that are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii) Rooflights, that: (A) have an aggregate light transmitting area of not less than 3% the floor area of the room; or (iii) a proportional combination of windows and roof lights required by (i) and (ii).	CRA – Refer Annexure F
F4.3: Natural light borrowed from adjoining room	N/A	N/A
F4.4: Artificial Lighting	Lighting to all areas is to comply with AS/NZS 1680.0:2009.	CRA – Refer Annexure F
F4.5: Ventilation of rooms	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2:2012.	CRA – Refer Annexure F
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—	CRA – Refer Annexure F

Section F: Health and Amenity		
	(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.	
F4.7: Ventilation borrowed from adjoining room	N/A	N/A
F4.8: Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a kitchen or pantry	Complies
F4.9: Airlocks	No airlock required	N/A
F4.11: Carparks	Every storey of a carpark (except an open deck carpark) must have: > a system of mechanical ventilation complying with AS 1668.2:2012; or > a system of natural ventilation complying with Section 4 of AS 1668.4:2012.	CRA – Refer Annexure F
F4.12: Kitchen local exhaust ventilation	N/A	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 and 3 buildings and Class 9c buildings.	Noted

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F5.2:	Determination of airborne sound insulation ratings	A form of construction required to have an airborne sound insulation rating must— (a) have the required value for weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation term (R_w + Ctr) determined in accordance with AS/NZS ISO 717.1 using results from laboratory measurements; or (b) comply with Specification F5.2.	CRA – Refer Annexure F
F5.3:	Determination of impact sound insulation ratings	(a) A floor in a building required to have an impact sound insulation rating must— (i) have the required value for weighted normalised impact sound pressure level with spectrum adaptation term ($L_{n,w}$ + CI) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or (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 F
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 F
F5.5:	Sound insulation rating of walls	(a) A wall in a Class 2 building must: (i) have an $R_w + C_{tr}$ (airborne) not less than 50 if it separates *sole-occupancy units*; and (ii) have an R_w (airborne) not less than 50 if it separates a sole occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and (iii) be of discontinuous construction in accordance with F5.3(b) if it separates: (A) a bathroom, sanitary compartment, laundry or kitchen in one *sole-occupancy unit* from a habitable room (other than a kitchen) in an adjoining unit; or	CRA – Refer Annexure F

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		(B) a *sole-occupancy unit* from a plant room or lift shaft. (b) Where a wall required to have sound insulation has a floor above, the wall must continue to: (i) the underside of the floor above; or (ii) a ceiling that provides the sound insulation required for the wall. (c) Where a wall required to have sound insulation has a roof above, the wall must continue to: (i) the underside of the roof above; or (ii) a ceiling that provides the sound insulation required for the wall. (d) Doorways in walls separating the Class 2 *sole-occupancy units* from a stairway, public corridor, public lobby or the like must be provided with a door assembly that has an R_w not less than 30.	
F5.6:	Sound insulation rating of services	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 F
F5.7:	Sound isolation of pumps	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating pump.	CRA – Refer Annexure F
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

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3.	Method	Information only	Noted
Part F6 – Condensation Management			
F6.0:	Deemed-to-satisfy provisions	Informational	Noted
F6.1:	Application of Part	Informational	Noted
F6.2	Pliable building membrane	Where a pliable building membrane is installed in an external wall it shall comply with AS/NZS 4200.1:2017 and installed in accordance with AS 4200.2:2017. Note: There are constructability issues with unique wall systems such as Rediwall, Logicwall, Dincel & Ritek to have a pliable building membrane installed internal to a cavity. So where a pliable building membrane is not proposed then a drained cavity is required behind the primary water control layer. For unique wall systems then a drained cavity will subsequently result in likely failure of the weatherproofing requirements under FP1.4 and FV1.1.	CRA – Refer Annexure F
F6.3:	Flow rate and discharge of exhaust systems	(a) An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— (i) 25 L/s for a bathroom or sanitary compartment; and (ii) 40 L/s for a kitchen or laundry. (b) Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air. (c) Exhaust from a bathroom, sanitary compartment, or laundry must be discharged— (i) directly or via a shaft or duct to outdoor air; or (ii) to a roof space that is ventilated in accordance with F6.4	CRA – Refer Annexure F
F6.4:	Ventilation of roof spaces	Where an exhaust system covered by F6.3 discharges directly or via a shaft or duct into a roof space, the roof space must be ventilated to outdoor air through evenly distributed openings.	CRA – Refer Annexure F

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

Section G: Ancillary Provisions		
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	CRA – Refer Annexure F
NSW G1.101: Provision for cleaning windows	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: > the windows can be cleaned wholly from within the building; or > via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.	CRA – Refer Annexure F
Part G2 – Boilers, Pressure Vessels, Heating Appliances, Fireplaces, Chimneys and Flues		
G2.0: Deemed-to-Satisfy Provisions	Noted	-
Part G3 – Atrium Construction		
G3.1: Atriums Affected by the Part	N/A	N/A
Part G4 – Construction in Alpine Areas		
G4.0: Deemed-to-Satisfy Provisions	N/A	N/A
Part G5 – Construction in Bushfire Prone Areas		

Section G: Ancillary Provisions		
G5.0: Deemed-to-Satisfy Provisions	If building is within a bushfire prone area then compliance with AS3959 required relevant to the BAL level	CRA – Refer Annexure F
Part G6 – Occupiable Outdoor Areas		
G6.1: Application of part	N/A	N/A

Section H: Special Use Buildings		
Part H1 – Class 9b Buildings		
NSW H1.1: Application of Part	N/A	N/A

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

Section J: Energy Efficiency (Class 3, 5, 6, 7b, 8, 9)		
Part J0 – Energy Efficiency		
J0.1: Application of Section J	This is a specialist are that needs to be assessed by energy consultant	Noted

ANNEXURE E DEFINITIONS

Annexure E - Definitions

Effective height

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

Exit

Exit means –

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

(i) An internal or external stairway.

(ii) A ramp.

(iii) A fire-isolated passageway.

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

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

Fire compartment

Fire compartment means –

(a) the total space of a building; or

(b) when referred to in—

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

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

Fire-resistance level (FRL)

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

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order.

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

Fire-source feature

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

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

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

Fire wall

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

Non-combustible

Non-combustible means—

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

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

Performance Solution

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

Sole-occupancy unit

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

(a) a dwelling; or

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

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

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

ANNEXURE F BCA COMPLIANCE SPECIFICATION

Annexure F – BCA Compliance Specification

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

Architectural Design Certification

1. The carpark entrance shutter shall be relocated forward towards Park Street to ensure that the underside of the carpark roof slab is not more than 2000mm above the vehicular ramp as this will ensure that the carpark storey does not protrude more than 1000mm average above the finished ground level (ie ramp level) in accordance with C1.2 of BCA2019.
2. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
3. Building elements must be non-combustible in accordance with C1.9.
4. 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 BCA2019.
5. Floors separating storeys of different classifications will comply with BCA Clause C2.9 of BCA2019.
6. Equipment will be separated in accordance with Clause C2.12 of BCA2019.
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 an FRL 120/120/120 and provided with self-closing -/120/130 fire doors in accordance with Clause C2.13 of BCA2019.
8. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C3.2 and C3.3 of BCA2019 or protected in accordance with Clause C3.4 of BCA2019.
9. Services penetrating elements required to possess an FRL including the floor slabs, walls, shafts, etc. will be protected in accordance with Clause C3.12, C3.13 and C3.15 and Specification C3.15 of BCA2019.
10. 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.
11. The lift doors will be --/60/- fire doors complying with AS1735.11 in accordance Clause C3.10 of BCA2019.
12. Doorways and other openings in internal walls required to have an FRL will be protected in accordance with Clause C3.11 of BCA2019.
13. Columns protected by light weight construction will achieve an FRL not less than the FRL for the element it is penetrating, in accordance with Clause C3.17 of BCA2019.
14. A lintel will have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and it spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non-loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification C1.1 Clause 2.3 BCA2019.
15. All attachments to the external façade of the building will be fixed in a way that does not affect the fire resistance of that element in accordance with Clause 2.4 of Specification C1.1 of BCA2019.

16. The top and bottom of the riser shafts will achieve an FRL not less than the FRL required for the walls of the shaft in accordance with Clause 2.7 of Specification C1.1 of BCA2019.
17. Fire doors will comply with AS1905.1 and Specification C3.4 of BCA2019.
18. Where required, Fire shutters and fire windows will be in accordance with Specification C3.4 of BCA2019.
19. The required exits will be fire-isolated in accordance with Clause D1.3 of BCA2019.
20. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
21. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.

    Note: this includes a handrail to the side of the internal driveway ramps for pedestrian egress purposes.
22. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
23. The stairway or ramp within the fire-isolated shaft is to be non-combustible, and if there is a local failure not cause structural damage or impair the fire resistance of the shaft, in accordance with Clause D2.2 of BCA2019.
24. The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2019 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
25. New pedestrian ramps will comply with AS1428.1-2009, Clause D2.10 and Part D3 of BCA2019. The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.
26. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.
27. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with 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.
28. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
29. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
30. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 of BCA2019.
31. Signage will be provided on fire doors in accordance with Clause D2.23 of BCA2019.
32. 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 BCA2019. In addition to window protection, and for other openable windows 4 meters or more above the ground below, a barrier with a height not less than 865mm above the floor must be installed to the openable window.
33. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.

34. Non-illuminated exit signage will be installed in accordance with Clause E4.7, and of BCA2019.
35. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2.
36. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
37. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
38. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS3740.
39. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
40. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F1.11 of BCA2019.
41. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS1288 / AS2047.
42. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.
43. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
44. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.
45. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.
46. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
47. Pliable building membranes installed in external walls will comply with Clause F6.2 of BCA2019 and where a pliable building membrane is not installed in an external wall, the primary water control layer will be separated from water sensitive materials by a drained cavity.
48. Every storey of the carpark will be provided with an adequate system of permanent natural or mechanical ventilation in accordance with Clause F4.11 of BCA2019.
49. A safe manner for cleaning of windows located 3 or more storeys above ground level will be provided in accordance with the Work Health & Safety Act 2011 and regulations made under that Act in accordance with NSW G1.101 of BCA2019.
50. 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.
51. 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.
52. Building Fabric and Thermal Construction will be in accordance with Part J1 of BCA2019.
53. Glazing will be in accordance with Part J1 of BCA2019.
54. Building sealing will be in accordance with Part J3 of BCA2019.
55. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2019.

Electrical Services Design Certification:

56. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019.
57. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS2293.1.

58. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS2293.1.
59. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0.
60. Lighting power and controls will be installed in accordance with Part J6 of BCA2019.

Hydraulic Services Design Certification:

61. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and ASNZS3500.3
62. Where required onsite, Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS2419.1 as required.
63. Fire hose reel system will be installed to basement carpark in accordance with Clause E1.4 of BCA2019 and AS2441-2005 as required.
64. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS2444.
65. The heated water supply systems will be designed and installed to NCC Volume 3 – Plumbing code and Clause J7.2 of BCA2019.

Mechanical Services Design Certification:

66. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS1668.2.
67. Every storey of the car park will be ventilated in accordance with Clause F4.11 of BCA2019 and where not naturally ventilated it will be mechanically ventilated in accordance with AS1668.2 as applicable.
68. Exhaust systems installed in a kitchen, bathroom, sanitary compartment or laundry of a Class 2 sole-occupancy unit will have a minimum flow rate and discharge location in accordance with Clause F6.3 of BCA2019.
69. Where exhaust discharges directly or via shaft into a roof space of a Class 2 sole-occupancy unit, ventilation of the roof space will comply with Clause F6.4 of BCA2019.
70. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J5 of BCA2019.

Structural Engineers Design Certification:

71. The material and forms of construction for the proposed works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2019 as follows:
    - Dead and Live Loads – AS/NZS 1170.1:2002
    - Wind Loads – AS/NZS 1170.2:2011
    - Earthquake actions – AS 1170.4:2007
    - Masonry – AS 3700:2018
    - Concrete Construction – AS 3600:2018
    - Steel Construction AS 4100:1998
    - Aluminium Construction – AS/NZS 1664.1 or 2:1997
    - Timber Construction – AS 1720.1:2010
72. The FRL's of the structural elements for the proposed works have been designed in accordance with Table 4 of Specification C1.1 of BCA2019 for a building of Type B Construction.

73. The lift shaft will have an FRL in accordance with Clause C2.10 and Specification C1.1 of BCA2019.
74. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
75. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2019 to reinstate the FRL of the element concerned.
76. Upon completion of the works, a structural engineer will be able to certify that local failure will be in accordance with Clause D2.2 of BCA2019 for the fire isolated stairs.

Lift Services Design Certification:

77. The lifts throughout the development will be provided with stretcher facilities in accordance with Clause E3.2 of BCA2019 and will be capable of accommodating a stretcher with a patient lying horizontally by proving a clear space not less than 1100mm wide x 1400mm width.
78. Warning signage in accordance with Clause E3.3 of BCA2019 will be provided to the lifts to advise not to use the lifts in a fire.
79. The type of lifts will also be suitable to accommodate persons with a disability in accordance with Clause E3.6, Table E3.6a, and will have accessible features in accordance with Table E3.6b of BCA2019.
80. The lifts will comply with AS1735.12 in accordance with Clause E3.6 of BCA2019.
81. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification E3.1 of BCA2019.

Acoustic Services Design Certification:

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