

BCA Assessment Report

2 Murray Rose Avenue, Sydney Olympic Park



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EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings for the proposed construction of a sixteen (16) storey residential flat building and basement level carparking development at 2 Murray Rose Avenue, Sydney Olympic Park, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2019, Volume One Amendment 1.

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

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

Item	Description	BCA Provision
Performance Solutions Required		
1.	Combustible plywood noggins are to be installed to non-loadbearing internal fire rated walls	BCA Clause C1.9
2.	Openings located on the south and west elevations of the proposed development are located within 3m of the side boundary and are technically required to be protected in accordance with BCA Clause C3.2 & C3.4. It is proposed to vary the method of protection via Performance Solution Report.	BCA Clause C3.2 & C3.4
3.	Reduce the FRL for the penetrations in the floor above and below the storage areas; > Service penetrations generally to be fire rated to -/120/- in lieu of -/240/240. > Sprinkler and hydrant pipe penetrations generally to be fire rated to -/120/- in lieu of -/240/240	Specification C1.1, C3.12 and C3.15
4.	The garbage chute will not be fire rated at the base of the shaft however, the garbage rooms will form part of the same fire compartment as the shaft.	Spec C1.1 Clause 2.7
5.	There are numbers of skylights including a grill floor within the proposed development which are located within 3m of western allotment boundary.	Spec C1.1 Clause 3.6.
6.	Class 7b storage to have FRL's reduced from 240 min to 120 min on level B1	BCA Clause C2.8
7.	It is proposed to provide a single exit in lieu of two (2); > Fire Hydrant Pump room > Residential Level 14 (design amendment)	BCA Clause D1.2
8.	The distance to an exit or the distance to a point of choice exceeds the prescriptive requirements of BCA Clause D1.4 as identified below; > Level B1 Unit 3B3- Distance to a point of choice measured up to 11 metres. > Level 02 Unit 2B-9, 1B-7 distance to a point of choice measured up to 15 metres. > Level 09,10,11,12- distance to a point of choice measured up to 6.5 meters	BCA Clause D1.4

Item	Description	BCA Provision
9.	The distance between alternate exits; > within level 09- level 13 is less than 9m apart. > The distance between exits on level 02 exceeds 45m.	BCA Clause D1.5
10.	The discharge of the fire isolated stairs requires; > passing openings in the external wall of the building (glazing, sole-occupancy unit entry doors, garbage chute hopper) technically the openings are required to be protected in accordance with BCA Clause D1.7 (c) and C3.4. > Fire stair leading to Murray Rose Avenue discharges to a under croft within the building which is not open for 1/3 its perimeter.	BCA Clause D1.7
11.	The podium of level 01 is considered roof as open space. However, the following variations from the Deemed to Satisfy provisions of the BCA have been assessed; > There are various openings along the path of travel including lift opening, garbage chute and drainage openings within the slab. > The path of travel to the road will require occupants passing beneath the building when discharging to Murray Rose Avenue & Bennelong Parkway.	BCA Clause D2.12
12.	The location of the hydrant booster assembly technically does not comply with the requirements AS2419.1-2005.(not located within site of the main entry)	BCA Clause E1.3
13.	It is proposed to provide jet fans within the basement carpark to assist with carpark exhaust. Jet fans may have an adverse impact on sprinkler performance (activation time and spray pattern), smoke layer stability (tenability) and fire spread.	BCA Clause E1.5 & E2.2
14.	The air relief for the stair pressurisation system serving the residential fire stairs is proposed to only be located on one side of the façade from Level 9 to Level 11. From Level 12 to Level 14, the air relief openings for the stair pressurisation system are proposed not to be positioned at opposite facades	BCA Clause E2.2
15.	Stair pressurisation fans located on level 8 serving basement and apartment level do not have fire separation between them	BCA Clause E2.2
16.	The speech intelligibility for EWIS speaker in carpark areas on carpark levels will not satisfy the requirements of BCA Clause E4.9 & AS1670.4-2018	BCA Clause E4.9
17.	When determining compliance with BCA Clause F4.2 (methods and extent of natural light) and calculating the 50% of the square root the height of the wall, the wall is technically required to be set back from the boundary by 3.21 meters.	BCA Clause F4.2

Item	Description	BCA Provision
	The wall is currently set back less than 1 metre, further investigations are required as to whether or not a Performance Solution is feasible.	
18.	The external void area has been considered an atrium for the purpose of this assessment, therefore the provisions of Part G3 are technically required to be satisfied. It is proposed to address variations to Part G3 via Fire Engineering Performance Solution (Please refer to Clause G3.1 for further discussion)	Part G3
19.	The construction of external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	No DtS Provisions
Building Code of Australia Compliance Matters to be Addressed		
1.	There are areas within public corridors on level 14 which contain furniture, confirmation is to be provided as to whether this area will be enclosed to create a room. If so, the room will require to be fire separated in accordance with BCA Clause C3.11. Furthermore, where sole-occupants have not been provided with a point of choice along an open balcony(Level 00-level 08), then that external wall must– - be constructed of concrete or masonry, or be lined internally with a fire-protective covering; and - have any doorway fitted with a self-closing, tight-fitting solid core door not less than 35 mm thick; and - have any windows or other openings– - protected internally in accordance with C3.4; or - located at least 1.5 m above the floor of the balcony, landing or the like. Alternatively, a Fire Engineer may be engaged to address variations to the Deemed to Satisfy provisions.	BCA Clause C3.11
2.	The location of fire hose reels are to be indicated on the architectural drawings in accordance with BCA Clause E1.4	BCA Clause E1.4
3.	A pliable sarking membrane is required to be installed on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building. As the proposed development is located within climate zone 6, the barrier shall be vapour permeable. Detailed architectural drawings are to be provided to demonstrate compliance.	BCA Clause F6.2
Further Information Required at CC Stage		
1.	A door schedule is to be provided detailing the required FRL.	BCA Part C & D

Item	Description	BCA Provision
2.	1:50 detail to be provided of external wall build up, including floor, internal fire wall, external wall and façade junctions.	BCA Clause C1.1 & Spec C1.1

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 2 Murray Rose Avenue, Sydney Olympic Park, the site is legally defined a Lot 2 DP1185060 and situated within the Local Government Area of City of Parramatta

The Development Application (sS4.55) pertains to the construction of a sixteen (16) storey residential flat building and basement level carparking development.

For a the list of proposed modifications associated with this application please refer to Annexure G within

Vehicular access will be provided to the development from Parkview Drive and the principal pedestrian entrance from Murray Rose Avenue.



Image courtesy of Google Map

1.2. Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume One – Building Code of Australia, 2019 Edition Amendment 1 (BCA2019) incorporating the State variations where applicable. Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority. The BCA is updated generally on a three-yearly cycle, starting from the 1st of May 2016.

1.3. Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA2019, 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 BCA2019. Such assessment against relevant performance criteria will need to be addressed by means of a separate Performance Solution Report to be prepared under separate cover.

1.4. 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), (Note: The provision of disabled access to the subject development has been assessed against the deemed to satisfy provision of Part D3 and F2.4 of BCA2019 only);
- (c) Demolition Standards not referred to by the BCA;
- (d) Work Health and Safety Act 2011;
- (e) Requirements of Australian Standards unless specifically referred to;
- (f) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and
- (g) Conditions of Development Consent issued by the Local Consent Authority.

1.5. Design Documentation

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

2 BUILDING DESCRIPTION

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

2.1. Rise in Storeys (Clause C1.2)

The building has a rise in storeys of fourteen (14)

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
Class 2	Basement Level 1 (part), Ground- Level 14	Residential sole-occupancy units & associated common areas.
Class 7a	Basement level, 3 2 & 1 (Part)	Carpark
Class 7b	Basement level, 3 2 & 1	Storage

2.3. Effective Height (Clause A1.0)

The building has an *effective height* of 48.2 metres. (RL 51.8 -3.6)

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

The building is required to be of Type A Construction.

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

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

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

2.6. Fire Compartments

The following *fire compartments* have been assumed:

- (a) Basement Carpark levels 3-1 will be considered a single fire compartment.
- (b) Each residential storey will be considered a separate fire compartment.

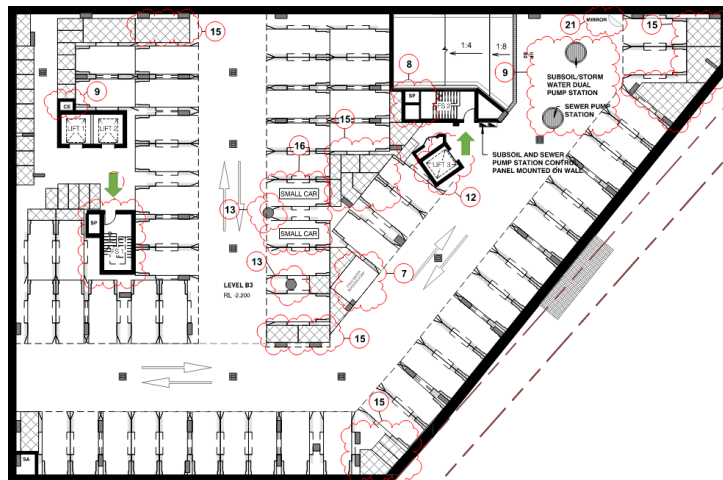
2.7. Exits

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

Basement level 3-2

- a. Fire isolated stair discharging to Murray Rose Avenue

b. Fire isolated stair discharging to roof as open space (level 01)

**Basement Level 1****Carpark (part)**

- Fire isolated stair discharging to Murray Rose Avenue
- Horizontal Exit Leading to Residential Part B1

Residential (part)

- Fire isolated stair discharging to Level 01 (roof as open space)
- Doorway providing egress Bennelong Parkway

**Level 00****Carpark (part)**

- Fire isolated stair discharging to Murray Rose Avenue
- Horizontal Exit Leading to Residential Part B1

Residential (part)

- a. Doorway providing egress to Murray Rose Avenue
- b. Doorway providing egress to Bennelong Parkway

Residential (Level 01)

- a. Each sole-occupancy unit discharging to roof as open space
- b. Lobby area discharges to roof as open space and exit doorway leading to Murray Rose Avenue

Residential (Level 02-08)

- a. Fire isolated stair (x2 Scissor stair) discharging to roof as open space and to Murray Rose Avenue
- b. Stair to the northeast of the floor plate discharging to roof as open space.

Residential (Level 09-13)

- a. Scissor stair discharging to roof as open space and to Murray Rose Avenue

Residential (Level 14)

- a. Scissor stair discharging to roof as open space and to Murray Rose Avenue

2.8. Climate Zone (Clause A1.0)

The building is located within Climate Zone 6

2.9. Location of Fire-source features

The fire source features for the subject development are:

North: The far boundary of Murray Rose Avenue

South: The far boundary of Parkview Drive

East: The far boundary of Bennelong Parkway

West: The allotment boundary adjoining 4 Murray Rose Avenue Sydney Olympic Park

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

- (b) has an FRL of not less than 30/–/–; and
- (c) is neither transparent nor translucent.

3 MATTERS FOR FURTHER CONSIDERATION

3.1. General

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

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

Annexure D to this report provides a detailed assessment of the proposal against ALL relevant Deemed-to-Satisfy Provisions of the BCA. It is important that Annexure D is read in conjunction with the items below, as some matters may not have had sufficient information provided to allow a detailed assessment to be undertaken.

3.2. Dimensions and Tolerances

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

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

3.3. Performance Based Design – Performance Solutions

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

It may be identified that additional Performance Solutions are required or proposed to address those additional matters raised under 3.4 below

Table 2. Performance Solutions

Item	Description of Performance Solution	DTS Provision
1.	Combustible plywood noggins are to be installed to non-loadbearing internal fire rated walls	BCA Clause C1.9
2.	Openings located on the south and west elevations of the proposed development are located within 3m of the side boundary and are technically required to be protected in accordance with BCA Clause C3.2 & C3.4. It is proposed to vary the method of protection via Performance Solution Report.	BCA Clause C3.2 & C3.4
3.	Reduce the FRL for the penetrations in the floor above and below the storage areas;	Specification C1.1, C3.12 and C3.15

Item	Description of Performance Solution	DTS Provision
	> Service penetrations generally to be fire rated to -/120/- in lieu of -/240/240. > Sprinkler and hydrant pipe penetrations generally to be fire rated to -/120/- in lieu of -/240/240	
4.	The garbage chute will not be fire rated at the base of the shaft however, the garbage rooms will form part of the same fire compartment as the shaft.	Spec C1.1 Clause 2.7
5.	There are numbers of skylights including a grill floor within the proposed development which are located within 3m of western allotment boundary.	Spec C1.1 Clause 3.6.
6.	Class 7b storage to have FRL's reduced from 240 min to 120 min on level B1	BCA Clause C2.8
7.	It is proposed to provide a single exit in lieu of two (2); > Fire Hydrant Pump room > Residential Level 14 (design amendment)	BCA Clause D1.2
8.	The distance to an exit or the distance to a point of choice exceeds the prescriptive requirements of BCA Clause D1.4 as identified below; > Level B1 Unit 3B3- Distance to a point of choice measured up to 11 metres. > Level 02 Unit 2B-9, 1B-7 distance to a point of choice measured up to 15 metres. > Level 09,10,11,12- distance to a point of choice measured up to 6.5 meters	BCA Clause D1.4
9.	The distance between alternate exits; > within level 09- level 13 is less than 9m apart. > The distance between exits on level 02 exceeds 45m.	BCA Clause D1.5
10.	The discharge of the fire isolated stairs requires; > passing openings in the external wall of the building (glazing, sole-occupancy unit entry doors, garbage chute hopper) technically the openings are required to be	BCA Clause D1.7

Item	Description of Performance Solution	DTS Provision
	protected in accordance with BCA Clause D1.7 (c) and C3.4. > Fire stair leading to Murray Rose Avenue discharges to a undercroft within the building which is not open for 1/3 its perimeter.	
11.	The podium of level 01 is considered roof as open space. However, the following variations from the Deemed to Satisfy provisions of the BCA have been assessed; > There are various openings along the path of travel including lift opening, garbage chute and drainage openings within the slab. > The path of travel to the road will require occupants passing beneath the building when discharging to Murray Rose Avenue & Bennelong Parkway.	BCA Clause D2.12
12.	The location of the hydrant booster assembly technically does not comply with the requirements AS2419.1-2005.(not located within site of the main entry)	BCA Clause E1.3
13.	It is proposed to provide jet fans within the basement carpark to assist with carpark exhaust. Jet fans may have an adverse impact on sprinkler performance (activation time and spray pattern), smoke layer stability (tenability) and fire spread.	BCA Clause E1.5 & E2.2
14.	The air relief for the stair pressurisation system serving the residential fire stairs is proposed to only be located on one side of the façade from Level 9 to Level 11. From Level 12 to Level 14, the air relief openings for the stair pressurisation system are proposed not to be positioned at opposite facades	BCA Clause E2.2
15.	Stair pressurisation fans located on level 8 serving basement and apartment levels do not have fire separation between them	BCA Clause E2.2
16.	The speech intelligibility for EWIS speaker in carpark areas on carpark levels will not satisfy the requirements of BCA Clause E4.9 & AS1670.4-2018	BCA Clause E4.9
17.	When determining compliance with BCA Clause F4.2 (methods and extent of natural light) and calculating the 50% of the square root the height of the wall, the wall is technically required to be set back from the boundary by 3.21 meters.	BCA Clause F4.2

Item	Description of Performance Solution	DTS Provision
	The wall is currently set back less than 1 metre, further investigations are required as to whether or not a Performance Solution is feasible.	
18.	The external void area has been considered an atrium for the purpose of this assessment, therefore the provisions of Part G3 are technically required to be satisfied. It is proposed to address variations to Part G3 via Fire Engineering Performance Solution (Please refer to Clause G3.1 for further discussion)	Part G3
19.	The construction of external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	No DtS Provisions

3.4. BCA Matters To Be Addressed

3.4.1. BCA Clause C3.11 Bounding Construction

In accordance with BCA Clause C3.11 rooms not contained within a sole-occupancy are required to be fire separated in accordance with BCA Spec C1.1

There are areas within public corridors on level 14 which contain loose furniture, confirmation is to be provided as to whether this area will be enclosed to create a room.

Detailed architectural drawings are required to be submitted clearly indicating these areas will remain unenclosed.

Furthermore, where sole-occupancy units have not been provided with a point of choice along an open balcony(Level 00-level 08), then that external wall must–

1. be constructed of concrete or masonry, or be lined internally with a fire-protective covering; and
2. have any doorway fitted with a self-closing, tight-fitting solid core door not less than 35 mm thick; and
3. have any windows or other openings–
 - a. protected internally in accordance with C3.4; or
 - b. located at least 1.5 m above the floor of the balcony, landing or the like.

Alternatively, a Fire Engineer may be engaged to address variations to the Deemed to Satisfy provisions

Please note, that for level 01- level 08 where the sole-occupancy have been provided with a point of choice to an exit, doors and windows need not be protected to satisfy the requirements of this clause.

Detailed architectural drawings and Specification is to be submitted demonstrating compliance at CC stage.

3.4.2. BCA Clause F1.0 & BCA F6.2 External Wall Construction

It is recommended that a Façade Engineer or suitably qualified architect subject to Principal Certifier discretion be engaged to address the Performance Requirements of FP1.4 as required by BCA F1.0.

External walls are required to prevent water penetration which causes dangerous conditions, loss of amenity or dampness and deterioration of building elements. There are no Deemed-to-Satisfy Provisions to address FP1.4 for the weatherproofing of external walls.

Furthermore, the DtS requirements of BCA Clause F6.2 require external walls to have a pliable building (sarking) membrane, where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water-sensitive materials by a drained cavity.

As the proposed development is located within climate zone 6 the sarking membrane is required to be vapour permeable.

It is once more recommended that a Façade Engineer /suitable qualified architect review the proposed wall build-up and provide design compliance advice.

3.4.3. BCA Clause F1.4 –External above ground membranes

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

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

Furthermore, detailed architectural drawings are required to be provided with regards to the weatherproofing of the entry door to sole-occupancy units. If the entry door is to incorporate a step, then a Fire Engineering Performance Solution may be required to address variations to BCA Clause D2.15

It is also important to note that a level landing or threshold ramp will be required to be provided to livable dwellings.

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

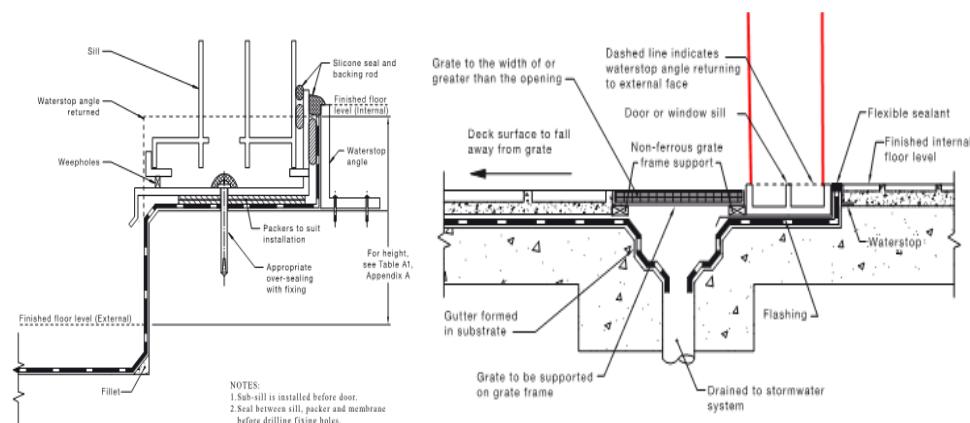


Figure 1 External wet area

3.5. Façade Construction – Non-Combustible

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

- (a) *In a building required to be of Type A, 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*
- (c) *A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification C1.1.*
- (d) *The requirements of (a) and (b) do not apply to gaskets, caulking, sealants, termite management systems, Glass including laminated glass, thermal breaks associated with glazing systems and damp-proof courses.*
- (e) *The following materials, may be used wherever a non-combustible material is required:*
 - (i) *Plasterboard.*
 - (ii) *Perforated gypsum lath with a normal paper finish*
 - (iii) *Fibrous-plaster sheet.*
 - (iv) *Fibre-reinforced cement sheeting.*
 - (v) *Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.*
 - (vi) *Sarking-type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5.*
 - (vii) *Bonded laminated materials where—*
 - (A) *each lamina, including any core, is non-combustible; and*
 - (B) *each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and*
 - (C) *the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.*

Currently the external façade construction has not been clearly nominated on the plans to permit an assessment. It shall be ensured that all selected materials are non-combustible where/as required by Clause C1.9 and C1.14 of the BCA2019 in subsequent detailed design stages to facilitate a further assessment.

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

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

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 PTW Architects			
Drawing Number	Title	Rev	Date
DA-00-0000	DRAWING LIST	D	03.11.2021
DA-00-0100	DEVELOPMENT DATA SHEET	D	03.11.2021
DA-00-0200	SITE PLAN	A	12.10.2018
DA-00-0300	SITE ANALYSIS PLAN	A	12.10.2018
DA-00-0400	DEMOLITION PLAN	A	12.10.2018
DA-00-0500	ARCHITECTURAL SITE PLAN	B	03.11.2021
DA-10-1700	GENERAL ARRANGEMENT PLANS - S1 LEVEL B3	B	24.01.2019
DA-10-1800	GENERAL ARRANGEMENT PLANS - S1 LEVEL B2	B	24.01.2019
DA-10-1900	GENERAL ARRANGEMENT PLANS - S1 LEVEL B1	D	17.05.2019
DA-10-2000	GENERAL ARRANGEMENT PLANS - S1 LEVEL 00	E	04.06.2019
DA-10-2100	GENERAL ARRANGEMENT PLANS - S1 LEVEL 01	D	17.05.2019
DA-10-2200	GENERAL ARRANGEMENT PLANS - S1 LEVEL 02	C	17.05.2019
DA-10-2300	GENERAL ARRANGEMENT PLANS - S1 LEVEL 03-05	B	17.05.2019
DA-10-2400	GENERAL ARRANGEMENT PLANS - S1 LEVEL 06	B	17.05.2019
DA-10-2500	GENERAL ARRANGEMENT PLANS - S1 LEVEL 07	B	17.05.2019
DA-10-2600	GENERAL ARRANGEMENT PLANS - S1 LEVEL 08	D	17.05.2019
DA-10-2700	GENERAL ARRANGEMENT PLANS - S1 LEVEL 09	D	17.05.2019
DA-10-2800	GENERAL ARRANGEMENT PLANS - S1 LEVEL 10	D	17.05.2019
DA-10-2900	GENERAL ARRANGEMENT PLANS - S1 LEVEL 11	D	17.05.2019
DA-10-3000	GENERAL ARRANGEMENT PLANS - S1 LEVEL 12	A	12.10.2018
DA-10-3100	GENERAL ARRANGEMENT PLANS - S1 ROOF	A	12.10.2018
DA-10-4700	GENERAL ARRANGEMENT PLANS - S2 LEVEL B3	D	03.11.2021
DA-10-4800	GENERAL ARRANGEMENT PLANS - S2 LEVEL B2	D	03.11.2021
DA-10-4900	GENERAL ARRANGEMENT PLANS - S2 LEVEL B1	E	03.11.2021
DA-10-5000	GENERAL ARRANGEMENT PLANS - S2 LEVEL 00	D	03.11.2021
DA-10-5100	GENERAL ARRANGEMENT PLANS - S2 LEVEL 01	E	03.11.2021
DA-10-5200	GENERAL ARRANGEMENT PLANS - S2 LEVEL 02	D	03.11.2021
DA-10-5300	GENERAL ARRANGEMENT PLANS - S2 LEVEL 03-05	D	03.11.2021
DA-10-5400	GENERAL ARRANGEMENT PLANS - S2 LEVEL 06	D	03.11.2021
DA-10-5500	GENERAL ARRANGEMENT PLANS - S2 LEVEL 07	D	03.11.2021
DA-10-5600	GENERAL ARRANGEMENT PLANS - S2 LEVEL 08	E	03.11.2021
DA-10-5700	GENERAL ARRANGEMENT PLANS - S2 LEVEL 09	D	03.11.2021
DA-10-5800	GENERAL ARRANGEMENT PLANS - S2 LEVEL 10	E	03.11.2021
DA-10-5900	GENERAL ARRANGEMENT PLANS - S2 LEVEL 11	E	03.11.2021
DA-10-6000	GENERAL ARRANGEMENT PLANS - S2 LEVEL 12	E	03.11.2021
DA-10-6100	GENERAL ARRANGEMENT PLANS - S2 LEVEL 13	E	03.11.2021
DA-10-6200	GENERAL ARRANGEMENT PLANS - S2 LEVEL 14	E	03.11.2021
DA-10-6300	GENERAL ARRANGEMENT PLANS - S2 LEVEL 15	B	03.11.2021
DA-10-6400	GENERAL ARRANGEMENT PLANS - S2 ROOF	B	03.11.2021
DA-20-0000	ELEVATIONS-S1	C	19.03.2019
DA-20-0100	ELEVATIONS-S1	C	19.03.2019
DA-20-0200	ELEVATIONS-S1	C	19.03.2019
DA-20-0300	ELEVATIONS-S2	D	03.11.2021
DA-20-0400	ELEVATIONS-S2	D	03.11.2021
DA-20-0500	ELEVATIONS-S2	D	03.11.2021
DA-20-0600	ELEVATION-BENNELONG PARKWAY ROAD	D	03.11.2021
DA-30-0000	SECTIONS-S1	C	19.03.2019

Architectural Plans Prepared by PTW Architects

Drawing Number	Title	Rev	Date
DA-30-0010	SECTIONS-S1	A	19.03.2019
DA-30-0100	SECTIONS-S2	D	03.11.2021
DA-30-0200	SECTIONS-S2	D	03.11.2021
DA-30-0300	SECTIONS-S2	B	03.11.2021
DA-31-0100	HEIGHT CONTROL ANALYSIS_S1	A	19.03.2019
DA-31-0200	HEIGHT CONTROL ANALYSIS_S2	B	03.11.2021
DA-40-0000	FACADE FINISH SCHEDULE-S1	B	24.01.2019
DA-40-0100	FACADE FINISH SCHEDULE-S2	C	03.11.2021
DA-40-0200	FACADE FINISH SCHEDULE-S2 CENTRAL COURTYARD	B	03.11.2021
DA-50-1000	ADAPTABLE UNITS-S1	A	12.10.2018
DA-50-1001	ADAPTABLE UNITS-S1	A	12.10.2018
DA-50-1100	SILVER LIVABLE UNITS-S1	A	12.10.2018
DA-50-1200	VISITABLE UNITS-S1	B	19.03.2019
DA-50-2000	ADAPTABLE UNITS-S2	B	03.11.2021
DA-50-2001	ADAPTABLE UNITS-S2	B	03.11.2021
DA-50-2100	SILVER LIVABLE UNITS-S2	B	03.11.2021
DA-50-2200	VISITABLE UNITS-S2	B	03.11.2021
DA-70-0000	STORAGE SCHEDULE_S1	A	19.03.2019
DA-70-0100	STORAGE SCHEDULE_S2	B	03.11.2021
DA-70-1000	STORAGE PLAN - S1 LEVEL B3	A	19.03.2019
DA-70-1100	STORAGE PLAN - S1 LEVEL B2	A	19.03.2019
DA-70-1200	STORAGE PLAN - S1 LEVEL B1	A	19.03.2019
DA-70-1300	STORAGE PLAN - S1 LEVEL 00	A	19.03.2019
DA-70-1400	STORAGE PLAN - S1 LEVEL 01	A	19.03.2019
DA-70-1500	STORAGE PLAN - S1 LEVEL 02	A	19.03.2019
DA-70-1600	STORAGE PLAN - S1 LEVEL 03-05	A	19.03.2019
DA-70-1700	STORAGE PLAN - S1 LEVEL 06	A	19.03.2019
DA-70-1800	STORAGE PLAN - S1 LEVEL 07	A	19.03.2019
DA-70-1900	STORAGE PLAN - S1 LEVEL 08	A	19.03.2019
DA-70-2000	STORAGE PLAN - S1 LEVEL 09	A	19.03.2019
DA-70-2100	STORAGE PLAN - S1 LEVEL 10	A	19.03.2019
DA-70-2200	STORAGE PLAN - S1 LEVEL 11	A	19.03.2019
DA-70-2300	STORAGE PLAN - S2 LEVEL B3	B	03.11.2021
DA-70-2400	STORAGE PLAN - S2 LEVEL B2	B	03.11.2021
DA-70-2500	STORAGE PLAN - S2 LEVEL B1	B	03.11.2021
DA-70-2600	STORAGE PLAN - S2 LEVEL 00	B	03.11.2021
DA-70-2700	STORAGE PLAN - S2 LEVEL 01	B	03.11.2021
DA-70-2800	STORAGE PLAN - S2 LEVEL 02	B	03.11.2021
DA-70-2900	STORAGE PLAN - S2 LEVEL 03 - 05	B	03.11.2021
DA-70-3000	STORAGE PLAN - S2 LEVEL 06	B	03.11.2021
DA-70-3100	STORAGE PLAN - S2 LEVEL 07	B	03.11.2021
DA-70-3200	STORAGE PLAN - S2 LEVEL 08	B	03.11.2021
DA-70-3300	STORAGE PLAN - S2 LEVEL 09	B	03.11.2021
DA-70-3400	STORAGE PLAN - S2 LEVEL 10	B	03.11.2021
DA-70-3500	STORAGE PLAN - S2 LEVEL 11	B	03.11.2021
DA-70-3600	STORAGE PLAN - S2 LEVEL 12	B	03.11.2021
DA-70-3700	STORAGE PLAN - S2 LEVEL 13	B	03.11.2021

ANNEXURE B ESSENTIAL SERVICES

Annexure B - Essential Services

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

Table 4. Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Atrium Constriction	BCA2109 G3 (Atrium Construction) Spec G3.8 (Atrium Construction) & Proposed Fire Engineering Performance Solution
2.	Access Panels & doors/hoppers (fire rated)	BCA2019 C3.13 (Openings in Shafts) BCA2019 Spec C3.4 AS 1905.1:2015 (Fire Resistant Doorsets)
3.	Fire doors	BCA2019 C3.4 (Acceptable methods of Protection) BCA2019 C3.5 (Doors in Fire Walls) BCA2019 C3.8 (Openings in Fire Isolated Exits) BCA2019 C3.10 (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 BCA2019 C3.11 (Bounding Construction) BCA2019 C3.13 (Opening in Shafts) Spec E1.8 (Fire Control Centres) Spec C3.4 AS1905.1: 2015
4.	Fire seals protecting openings in fire resisting components of the building	BCA2019 C3.15 (Openings for service installations) BCA2019 C3.16 (Construction joints) BCA2019 Spec C3.15 AS1530.4:2014 & AS4072.1-2005
5.	Fire windows > Fixed Internal wall-wetting sprinklers > Fixed External wall-wetting sprinklers > -/60/- Fire Windows automatic closing	BCA2019 C3.2 (Protection of Openings) BCA2019 C3.4 (Acceptable Methods of Protection) BCA2019 Spec. C3.4 identical to tested prototype & Proposed Fire Engineering Performance Solution

Item	Essential Fire and Other Safety Measures	Standard of Performance
6.	Lightweight construction	BCA2019 C1.1, Spec. C1.1 BCA2019 C1.8, Spec C1.8 BCA2019 C2.7 (Fire Walls) BCA2019 C2.8 (Separation – same storey) BCA2019 C3.11 (Bounding Construction) BCA2019 D2.11 (Fire Isolated Passageways) AS1530.4:2014
General		
7.	Fire control centres	BCA2019 E1.8, Spec E1.8 (Fire Control Centres) & Proposed Fire Engineering Performance Solution
8.	Portable fire extinguishers	BCA2019 E1.6 AS 2444–2001
9.	Fire blankets	AS 2444–2001
General Egress		
10.	Operation of Door latches > Failsafe	D2.21 (Operation of Latch) AS 1670.1:2018
11.	Warning & operational signs	BCA2019 D2.23 (Signs on Fire Doors) BCA2019 D3.6 (Braille Exit Signs) (Note: E4.5 (Exit Signs)) BCA2019 E3.3 (Lift Signs) BCA2019 Spec E1.8 (Fire Control Centres)
Lifts		
12.	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'
13.	Emergency lifts	BCA2019 E3.4 AS 1735.1:2003 (Appendix A) or AS 1735.2:2001
14.	Stretcher Lifts including	BCA2019 E3.2

Item	Essential Fire and Other Safety Measures	Standard of Performance
	> Fire Service Controls > Recall Operation > Drive control switch	BCA2019 E3.7 (Fire Service Controls) BCA2019 E3.9 (Fire Service Recall Operation Switch) BCA2019 E3.10 (Lift Car Fire Service drive control switch) BCA2019 Spec E3.1 AS 1735.11:1986 (Fire rated landing doors)
Electrical Services		
15.	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). > Clause 4 – AS 1670.1:2018 system throughout the building/part connected to a BOWS @ 100dB(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 Spec E2.2a BCA2019 D2.21 (Operation of Latch) Spec C3.4 , Spec G3.8 (Atriums) Spec E2.2a - Clause 5 (Combined smoke alarm and smoke detection system) Spec E2.2a – Clause 6 (Smoke detection for smoke control systems) Spec E2.2a - Clause 7 (BOWS) Spec E2.2a - Clause 8 (System Monitoring) AS 3786:2014 (Amdt 1-4) AS 1670.1:2018 (Fire) – Section 4 and 5 (Detectors) AS 1670.1:2018 (Fire) – Section 7 (Smoke Control) AS 1670.3:2018 (Fire Alarm Monitoring) AS 1670.4:2018 (EWIS)
16.	Emergency lighting	BCA2019 E4.2, E4.4 AS/NZS 2293.1:2018
17.	Exit signs	BCA2019 E4.5 (Exit Signs) BCA2019 E4.6 (Direction Signs) BCA2019 E4.8 (Design and Operation - Exits) AS/NZS 2293.1:2018
18.	Emergency warning and intercom systems for Emergency Purposes (SSISEP) (EWIS or SSISEP)	BCA2019 E4.9 AS 1670.4:2018 (SSISEP) AS 1670.4:2018 (EWIS)

Item	Essential Fire and Other Safety Measures	Standard of Performance
	> >25m Residential areas: 75 dB(A) at all bedheads.	
Hydraulic Services		
19.	Automatic fire suppression systems > General Sprinklers > Combined Sprinklers and Hydrant	BCA2019 E1.5 AS 2118.1:2017 (Sprinklers) AS 2118.6:2012 (Combined Sprinklers/Hydrant)
20.	Fire hydrant systems > NSW Storz Couplings > Ring Main required > On-site water storage	BCA2019 E1.3 AS 2419.1:2005 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'
21.	Hose reel systems	BCA2019 E1.4 AS 2441:2005
22.	Wall-wetting sprinkler / drenchers	BCA2019 C3.4, AS 2118.2: Wall-wetting sprinkler / drenchers
23.	System Monitoring	BCA2019 E2.2 , Table E2.2a, Spec E2.2a AS 1670.3:2018
Mechanical Services		
24.	Fire dampers	BCA2019 E2.2, Spec E2.2a BCA2019 C3.15 AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
25.	1. Mechanical air handling systems 2. Mechanical ventilation to carpark. 3. Fire Isolated Exit Pressurisation System	BCA2019 E2.2, Table E2.2a, Table E2.2b Spec E2.2a, Spec E2.2b AS 1668.1:2015 (Amdt 1) Note: 5.5.3 Override control To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point. Note: Signage should be located at the car park entry indicating the location of the control switches.

Item	Essential Fire and Other Safety Measures	Standard of Performance
		& Proposed Fire Engineering Performance Solution Report.
26.	Smoke dampers	BCA2019 C2.5 and Spec C2.5 BCA2019 E2.2, Spec E2.2a Spec G3.8 AS 1668.1:2015 (Amdt 1), AS 1682.1:2015 & AS 1682.2:2015
Notes: (An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one <i>fire compartment</i> to another <i>fire compartment</i> or operates in a manner that may unduly contribute to the spread of smoke from one <i>fire compartment</i> to another <i>fire compartment</i> must— (i) ((be designed and installed to operate as a smoke control system in accordance with AS 1668.1:2015; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1:2018; and for the purposes of this provision, each <i>sole-occupancy unit</i> in a Class 2 or 3 building is treated as a separate <i>fire compartment</i>. Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1:2015 serving more than one <i>fire compartment</i> (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS 1668.1:2015 systems that are provided for zone smoke control and automatic air pressurisation for fire-isolated exits.		
Performance Solutions		
	Description of Performance Solution	DTS Provision
1.	Combustible plywood noggins are to be installed to non-loadbearing internal fire rated walls	BCA Clause C1.9
2.	Openings located on the south and west elevations of the proposed development are located within 3m of the side boundary and are technically required to be protected in accordance with BCA Clause C3.2 & C3.4. It is proposed to vary the method of protection via Performance Solution Report.	BCA Clause C3.2 & C3.4
3.	Reduce the FRL for the penetrations in the floor above and below the storage areas;	Specification C1.1, C3.12 and C3.15

Item	Essential Fire and Other Safety Measures	Standard of Performance
	> Service penetrations generally to be fire rated to -/120/- in lieu of -/240/240. Sprinkler and hydrant pipe penetrations generally to be fire rated to -/120/- in lieu of -/240/240	
4.	The garbage chute will not be fire rated at the base of the shaft however, the garbage rooms will form part of the same fire compartment as the shaft.	Spec C1.1 Clause 2.7
5.	There are numbers of skylights including a grill floor within the proposed development which are located within 3m of western allotment boundary.	Spec C1.1 Clause 3.6.
6.	> Class 7b storage to have FRL's reduced from 240 min to 120 min on level B1	BCA Clause C2.8
7.	It is proposed to provide a single exit in lieu of two (2); > Fire Hydrant Pump room > Residential Level 14 (design amendment)	BCA Clause D1.2
8.	The distance to an exit or the distance to a point of choice exceeds the prescriptive requirements of BCA Clause D1.4 as identified below; > Level B1 Unit 3B3- Distance to a point of choice measured up to 11 metres. > Level 02 Unit 2B-9, 1B-7 distance to a point of choice measured up to 15 metres. > Level 09,10,11,12- distance to a point of choice measured up to 6.5 meters	BCA Clause D1.4
9.	The distance between alternate exits; > within level 09- level 13 is less than 9m apart. > The distance between exits on level 02 exceeds 45m.	BCA Clause D1.5
10.	The discharge of the fire isolated stairs requires; > passing openings in the external wall of the building (glazing, sole-occupancy unit entry doors, garbage chute hopper) technically the openings are required to be protected in accordance with BCA Clause D1.7 (c) and C3.4. > Fire stair leading to Murray Rose Avenue discharges to a under croft within the building which is not open for 1/3 its perimeter.	BCA Clause D1.7
11.	The podium of level 01 is considered roof as open space.	BCA Clause D2.12

Item	Essential Fire and Other Safety Measures	Standard of Performance
	However, the following variations from the Deemed to Satisfy provisions of the BCA have been assessed; > There are various openings along the path of travel including lift opening, garbage chute and drainage openings within the slab. > The path of travel to the road will require occupants passing beneath the building when discharging to Murray Rose Avenue & Bennelong Parkway.	
12.	The location of the hydrant booster assembly technically does not comply with the requirements AS2419.1-2005.(not located within site of the main entry)	BCA Clause E1.3
13.	It is proposed to provide jet fans within the basement carpark to assist with carpark exhaust. Jet fans may have an adverse impact on sprinkler performance (activation time and spray pattern), smoke layer stability (tenability) and fire spread.	BCA Clause E1.5 & E2.2
14.	The air relief for the stair pressurisation system serving the residential fire stairs is proposed to only be located on one side of the façade from Level 9 to Level 11. From Level 12 to Level 14, the air relief openings for the stair pressurisation system are proposed not to be positioned at opposite facades	BCA Clause E2.2
15.	Stair pressurisation fans located on level 8 serving basement and apartment levels do not have fire separation between them	BCA Clause E2.2
16.	The speech intelligibility for EWIS speaker in carpark areas on carpark levels will not satisfy the requirements of BCA Clause E4.9 & AS1670.4-2018	BCA Clause E4.9
17.	The external void area has been considered an atrium for the purpose of this assessment, therefore the provisions of Part G3 are technically required to be satisfied. It is proposed to address variations to Part G3 via Fire Engineering Performance Solution (Please refer to Clause G3.1 for further discussion)	Part G3

ANNEXURE C FIRE RESISTANCE LEVELS

Annexure C - Fire Resistance Levels

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

Type A Construction

Table 5. Type A Construction

Item	Class 2	Class 7a	Class 7b
Loadbearing External Walls (including columns and other building elements incorporated therein)			
- Less than 1.5m to a <i>fire- source feature</i>	90/90/90	120/120/120	240/240/240
- 1.5 – less than 3m from a <i>fire-source feature</i>	90/60/60	120/90/90	240/240/180
- 3m or more from a <i>fire source feature</i>	90/60/30	120/60/30	240/180/90
Non-Loadbearing External Walls			
- Less than 1.5m to a <i>fire-source feature</i>	-/90/90	-/120/120	-/240/240
- 1.5 – less than 3m from a <i>fire-source feature</i>	-/60/60	-/90/90	-/240/180
- 3m or more from a <i>fire-source feature</i>	-/-/-	-/-/-	-/-/-
External Columns			
- Loadbearing	90/-/-	120/-/-	240/-/-
- Non-loadbearing	-/-/-	-/-/-	-/-/-
Common Walls & Fire Walls	90/90/90	120/120/120	240/240/240
Stair and Lift Shafts required to be fire-resisting			
- Loadbearing	90/90/90	120/120/120	240/120/120
- Non-loadbearing	-/90/90	-/120/120	-/120/120
Internal walls bounding sole occupancy units			
- Loadbearing	90/90/90	120/-/-	240/-/-
- Non-loadbearing	-/60/60	-/-/-	-/-/-
Internal walls bounding public corridors, public lobbies and the like:			
- Loadbearing	90/90/90	120/-/-	240/-/-
- Non-loadbearing	-/60/60	-/-/-	-/-/-
Ventilating, pipe, garbage and like shafts:			
- Loadbearing	90/90/90	120/90/90	240/120/120
- Non-loadbearing	-/90/90	-/90/90	-/120/120
Other loadbearing internal walls, beams trusses and columns	90/-/-	120/-/-	240/-/-
Floors	90/90/90	120/120/120	240/240/240
Roofs ¹	90/60/30	120/60/30	240/90/60

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

Note: It is proposed to provide reduced FRL's to the storage areas within basement levels.

ANNEXURE D DETAILED BCA 2019 ASSESSMENT

Annexure D – Detailed BCA 2019 Assessment

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

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

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

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

Deemed to Satisfy Clause Assessment

Table 6. Deemed to Satisfy Clause Assessment

Clause	Clause Requirements	Comment	Status
Section B: Structure			
Part B1 – Structural Provisions			
B1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
B1.1: Resistance to actions	The resistance of the building must be greater than the most critical action effect resulting from different combinations of actions, where the most critical action has been determined in accordance with this Part	Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
B1.2: Determination of individual actions	The magnitude of actions must be determined in accordance with this Clause.	Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
B1.4: Determination of structural resistance of materials and forms of construction	The structural resistance of materials and forms of construction must be determined in accordance with this Clause.	Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
B1.5: Structural software	Structural software used in computer aided design of a building or structure within the geometrical limits of (b) of this Clause must comply with the ABCB Protocol for Structural Software.	Structural Engineer to certify at CC stage.	CRA – Refer Annexure F
B1.6 Construction of buildings in flood hazard areas	A Class 2 building in a flood hazard area (refer to Council maps) must comply the ABCB Standard for Construction of Buildings in Flood Hazard Areas.	The building is not located within a flood hazard area.	N/A

Section C: Fire Resistance**Part C1 – Fire Resistance and Stability**

C1.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C1.1:	Type of construction required	The minimum type of fire-resisting construction of a building must be determined in accordance with Table C1.1.	The building is required to be of Type A Construction. Refer to Specification C1.1 requirements at the end of this section.	CRA – Refer Annexure F
C1.2:	Calculation of rise in storeys	The rise in storeys is the sum of the greatest number of storeys at any part of the external walls of the building and any storeys within the roof space— > above the finished ground next to that part; or > if part of the external wall is on the boundary of the allotment, above the natural ground level at the relevant part of the boundary. A storey is not counted if it is situated at the top of the building and contains only heating, ventilating or lift equipment.	The building has a rise in storeys of fourteen (14), with sixteen(16) storeys contained in total.	Noted
C1.3:	Buildings of multiple classification	Informational	Noted	Noted
C1.4:	Mixed Types of construction	Informational	Noted	Noted
C1.5:	Two Storey Class 2, 3 or 9c buildings	N/A	N/A	N/A
C1.6:	Class 4 Parts of building	N/A	N/A	N/A
C1.7:	Open spectator stands and indoor sports stadium	N/A	N/A	N/A

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C1.8: Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8.	Specific details regarding the location and use of lightweight construction have not been provided at this stage. Where lightweight construction is installed to provide a fire-resistance level to building elements, it shall be installed identical to the prototype that was submitted to the standard fire test. It is recommended that detailed architectural drawings including BCA specification is provided to demonstrate compliance at CC stage	CRA – Refer Annexure F
C1.9: Non-combustible building elements	(a) In a building required to be of Type A construction, the following building elements and their components must be <i>non-combustible</i>: (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 <i>non-combustible</i> construction in— (i) a building required to be of Type A construction (c) A loadbearing internal wall and a loadbearing <i>fire wall</i>, 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	At this stage specific details with regards to the external wall components have not been provided. A BCA specification and test reports demonstrating compliance with external cladding and other attachments have not been provided at this stage. Further assessment of the architectural drawings and BCA specification is required at CC stage. Furthermore, internal fire rated walls will have localised strengthening constructed of plywood. It is proposed to address the use of combustible materials in a non-loadbearing fire rated wall.	FI-Refer to Part 3.5 PS- Refer to Part 3

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	breaks associated with glazing systems and damp-proof courses. (e) The following materials, may be used wherever a <i>non-combustible</i> material is required: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet. (iv) Fibre-reinforced cement sheeting. (v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. (vi) <i>Sarking-type materials</i> that do not exceed 1 mm in thickness and have a <i>Flammability Index</i> not greater than 5. (vii) Bonded laminated materials where— (A) each lamina, including any core, is <i>non-combustible</i>; 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,	Specific details with regards to the linings of internal floors, walls and ceilings have not been provided at this stage.	CRA – Refer Annexure F

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	<i>sarking-type materials</i> and attachments, or be considered <i>non-combustible</i> .	The following is to be achieved; <u>Floor Linings</u> A critical radiant flux of 1.2 kW/m² <u>Wall & ceiling Linings</u> SOU's ; Group 1,2 or 3 Public Corridors; Group 1,2 or 3 <u>Ceilings;</u> SOU's ; Group 1,2 or 3 Public Corridors; Group 1,2 or 3 Rigid and flexible ductwork must comply with the fire hazard properties set out in AS 4254.1 and AS 4254.2. A BCA specification and schedule of proposed materials and finishes are to be provided for further assessment at CC stage.	
C1.11: Performance of external walls in fire	N/A	N/A	N/A
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.	N/A	N/A
C1.13: Fire-protected timber: Concession	N/A	N/A	N/A
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be <i>non-combustible</i> unless it is one of the following: (a) An ancillary element that is <i>non-combustible</i>.	At this stage details of ancillary items that may be attached to the external wall have not been provided. In particular details should be provided for the following; > Awning, sunshade, canopy, blind or shading hood > Screens attached to the external wall.	CRA – Refer Annexure F

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	(b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grille not more than 2 m² in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and (iii) does not extend beyond one fire compartment; and (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 <i>exit</i>, where it would render the <i>exit</i> unusable in a fire.	A BCA specification and schedule of proposed materials and finishes are to be provided for further assessment at CC stage.	
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- (j) A part of a security, intercom or announcement system.
- (k) Wiring.
- (l) A paint, lacquer or a similar finish.
- (a) A gasket, caulking, sealant or adhesive directly associated with (a) to (k).

Part C2 – Compartment and Separation

C2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C2.1: Application of Part	Informational	Noted	Noted
C2.2: General floor area and volume limitations	Informational - C2.2, C2.3 and C2.4 do not apply to a carpark provided with a sprinkler system complying with Specification E1.5 (other than an FPAA101D or FPAA101H system), an open-deck carpark or an open spectator stand.	Noted	Noted
C2.3: Large isolated buildings	The size of <i>fire compartments</i> in the building must not exceed that specified in Table C2.2.	The compartment sizes of the proposed development are such that they do not exceed the prescriptive requirements of BCA Clause C2.2.	Complies
C2.4: Requirements for open spaces and vehicular access	N/A	N/A	N/A
C2.5: Class 9a and 9c Buildings	N/A	N/A	N/A

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C2.6: Vertical separation of openings in external walls	N/A	N/A	N/A
C2.7: Separation by fire walls	Construction - A <i>fire wall</i> must be constructed in accordance with the following: > Any openings in a <i>fire wall</i> must not reduce the <i>FRL</i> required by Specification C1.1 for the <i>fire wall</i>, except where permitted by the Deemed-to-Satisfy Provisions of Part C3. > Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or <i>sarking-type material</i>, must not pass through or cross the <i>fire wall</i> unless the required fire resisting performance of the <i>fire wall</i> is maintained. Separation of buildings – A part of a building separated from the remainder of the building by a <i>fire wall</i> may be treated as a separate building for the purposes of the Deemed-to-Satisfy provisions of Sections C, D and E if it is constructed in accordance with (a) and the following: (i) the <i>fire wall</i> extends through all storeys and spaces in the nature of storeys that are common to that part and any adjoining part of the building. (ii) The <i>fire wall</i> is carried through to the underside of the roof covering. (iii) Where the roof of one of the adjoining parts is lower than the roof of the other part, the <i>fire wall</i> extends to the underside of— (A) the covering of the higher roof, or not less than 6 m above the covering of the lower roof; or (B) the lower roof if it has an <i>FRL</i> not less than that of the <i>fire wall</i> and no openings	Where required to separate fire compartments a fire wall is to be constructed in accordance with BCA Clause C2.7 Please refer to further discussions within Clause C2.8	CRA – Refer Annexure F

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	closer than 3 m to any wall above the lower roof; or (C) the lower roof if its covering is <i>non-combustible</i> and the lower part has a sprinkler system complying with Specification E1.5. Separation of fire compartments – A part of a building separated from the remainder of the building by a <i>fire wall</i> may be treated as a separate <i>fire compartment</i> if it is constructed in accordance with this clause and the <i>fire wall</i> extends to the underside of – > a floor having an <i>FRL</i> required for a <i>fire wall</i>; or > the roof covering.		
C2.8: Separation of classifications in the same storey	Where a storey has different classifications located alongside one another: > each building element in that storey must have the higher <i>FRL</i> prescribed in Specification C1.1 for that element for the classifications concerned; or > the parts must be separated in that storey by a <i>fire wall</i> having the higher <i>FRL</i> prescribed in Table 3; or > where one part is a carpark complying with Table 3.9, 4.2 or 5.2 of Specification C1.1, the parts may be separated by a <i>fire wall</i> complying with the appropriate Table.	Within basement B1 and level 00, different classifications are located along side one another.(Class 2 & 7a) The classifications are required to be separated via a fire wall constructed in accordance with BCA Clause C2.7 to separate fire compartments and achieve a minimum <i>FRL</i> 120/120/120. Furthermore, it is proposed to omit and provide reduced <i>FRL</i>s to storage areas provided within basement levels. Detailed architectural drawings including <i>FRL</i> annotations and compartment drawings are to be submitted for further assessment.	PS-Refer to Part 3
C2.9: Separation of classifications in different storeys	Floors separating storeys of different classifications must have an <i>FRL</i> of not less than that prescribed in Specification C1.1 for the classification of the lower storey. Note: Determination of Floor <i>FRL</i>'s must also consider compliance with C2.7 whereby the floor must have the same <i>FRL</i> as the fire wall of the <i>fire compartment</i> below	In accordance with BCA Clause C2.9 the following <i>FRL</i>'s are required to be provided; The ground floor carpark is required to be fire separated from the residential parts with an <i>FRL</i> of 120/120/120. It is proposed to omit and provide reduced <i>FRL</i>s to storage areas provided within basement levels.	PS-Refer to Part 3

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	and D2.12 whereby roof as open space must have an FRL not less than 120/120/120.	Residential units shall be separated from one another achieving an FRL 90/90/90. Detailed architectural drawings including FRL annotations and compartment drawings are to be submitted for further assessment.	
C2.10: Separation of lift shafts	Passenger lifts must be separated from the remainder of the building by enclosure in a fire rated shaft achieving an FRL prescribed by Table 3 of Specification C1.1. Emergency lifts must be in fire-rated shafts not less than FRL 120/120/120.	It is assumed that the building can readily comply due to the presence of a separate lift shaft. Detailed architectural drawings including fire compartment/FRL drawings are to be submitted for further assessment at CC stage.	CRA – Refer Annexure F
C2.11: Stairways and lifts in one shaft	A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft.	The architectural drawings currently demonstrate that the lift shaft is contained in a separate shaft from the stairway.	Complies
C2.12: Separation of equipment	Any of the following equipment located in the building must be separated from the remainder of the building: > lift motors and lift control panels; or > emergency generators used to sustain emergency equipment operating in the emergency mode; or > central smoke control plant; or > boilers; or > a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more. Equipment need not be separated in if the equipment comprises: > smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or	This clause does not apply to the equipment located within the building. It is assumed that all fire services have a battery back-up system. Please note at this stage it is assumed that the Fire Engineer will be address variations to Part G3 of the BCA including the omission of standby power systems. Where this is not feasible this report will be updated through the design development process.	Noted

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	> stair pressurizing equipment installed in compliance with the relevant provisions of AS 1668.1:2015; or > a lift installation without a machine room; or > equipment otherwise adequately separated from the remainder of the building. Separation must be by construction having an <i>FRL</i> as required by Specification C1.1, but not less than <i>FRL</i> 120/120/120 with openings protected by self-closing fire doors having an <i>FRL</i> of not less than –/120/30. Separation of on-site fire pumps must comply with the requirements of AS 2419.1:2005.		
C2.13: Electricity supply system	> Any electrical substation located within the building must be separated from the remainder of the building by construction having an <i>FRL</i> of not less than 120/120/120, and doorways protected with self-closing fire doors having an <i>FRL</i> of not less than –/120/30. > A main switchboard which sustains emergency equipment operating in the emergency mode must be fire separated from any other part of the building by construction having an <i>FRL</i> of not less than 120/120/120 and have the doorway fitted with self-closing fire door having an <i>FRL</i> of not less than –/120/30. > Any electrical conductors located within the building that supply a substation or main switchboard for emergency equipment must comply with BCA clause C2.13. > Emergency equipment switchgear must be separated from non-emergency equipment switchgear by metal partitions designed to minimize the spread of a fault from the non-emergency equipment switchgear.	The substation is located external the building and is situated within the site at the junction between Murray Rose Avenue and Bennelong Parkway. Please note that Ausgrid will have standalone requirements with regards to the Kiosk and the proximity to the proposed building.	CRA – Refer Annexure F

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	> Emergency equipment includes but is not limited to the following: ○ fire hydrant booster pumps; ○ sprinkler pumps; ○ hose reel pumps; ○ air-handling systems designed to exhaust and control the spread of smoke; ○ emergency lifts; ○ control and indicating equipment; and ○ sound systems and intercom systems for emergency purposes. Note: Consideration should be given to the location of Electrical Substations on adjoining sites in regards to proximity to Fire Hydrant Boosters being within 10.0m		
C2.14: Public corridors in Class 2 and 3 Buildings	Public corridors in Class 2 parts that exceed 40 m in length must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Specification C2.5.	The corridor and associated corridors located in the residential part of basement level 00 is proposed to be provided with smoke separation at intervals no greater than 40m.	Complies
Part C3 – Protection of Openings			
C3.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C3.1: Application of Part	(a) The Deemed-to-Satisfy Provisions of this Part do not apply to— (i) Control joints, weep holes and the like in external walls of masonry construction and joints between panels in external walls of pre-cast concrete panel construction if, in all cases	Noted	Noted

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	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, (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		
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	the building, are deemed to be openings in an external wall.		
C3.2: Protection of openings in external walls	Openings in an external wall that is required to have an <i>FRL</i> must be protected in accordance with C3.4 if the distance between the opening and the <i>fire-source feature</i> is: > less than 3 m from a side or rear boundary; or > less than 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or > less than 6 m from another building on the allotment that is not Class 10; and if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand. Where wall-wetting sprinklers are used, they must be located externally.	Openings located on the south and west elevations of the proposed development are located within 3m of the side boundary and are technically required to be protected in accordance with BCA Clause C3.2 & C3.4. However, it is our understanding that along the western allotment boundary an easement has been created for a public walkway and the distance to the existing building at 4 Murray Rose Avenue exceeds 20 metres. On this basis it is proposed to provide a Performance Solution to vary the method of protection required to the openings within 3 metres of the fire source feature (allotment boundary).	PS-Refer to Part 3.3
C3.3: Separation of external walls and associated openings in different fire compartments	N/A	N/A	N/A
C3.4: Acceptable methods of protection	Where protection is required, openings must be protected as follows: <u>Doorways:</u> (ii) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or (iii) –/60/30 fire doors that are self-closing.	Please refer to discussion with BCA Clause C3.2	Noted

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	<u>Windows:</u> (iv) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (v) –60/– fire windows that are automatically closing or permanently fixed in the closed position; or (vi) –/60/– automatic closing fire shutters. <u>Other openings:</u> (vii) Excluding voids – internal or external wall-wetting sprinklers; or (viii) Construction having an <i>FRL</i> not less than –/60/– Fire doors, fire windows and fire shutters must comply with BCA Specification C3.4.		
C3.5: Doorways in fire walls	Doorways in the fire walls must be protected by a self-closing fire door that achieves an <i>FRL</i> of not less than that required by Specification C1.1 for the <i>fire wall</i> except that each door must have an insulation level of at least 30.	As previously discussed within BCA Clause C2.8 it is proposed to construct a fire wall in accordance with BCA Clause C2.7 to separate different classification located along side one another (Class 2 & 7a). The doorways providing access from the carpark to the residential part of the building and vice versa are required to be protected in accordance with BCA Clause C3.5 and achieve a minimum <i>FRL</i> of –/120/30. A detailed door schedule including <i>FRL</i> requirements of all doorways is to be provided for further assessment at CC stage	CRA – Refer Annexure F
C3.6: Sliding fire doors	N/A	N/A	N/A
C3.7: Protection of doorways in horizontal exits	A doorway that is part of a horizontal exit must be protected by a single fire door that has an <i>FRL</i> of not less than that required by Specification C1.1 for the fire wall	The fire doors proposed to be located between carpark and residential parts of the building is proposed to be utilised as a horizontal exit.	CRA – Refer Annexure F

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	except that the door must have an insulation level of at least 30, or by one of the other options in Clause C3.7.	Again, the doors are required to be provided with a minimum FRL -/120/30 A detailed door schedule including FRL requirements of all doorways is to be provided for further assessment at CC stage	
C3.8: Openings in fire-isolated exits	Doorways that open to fire-isolated stairways, fire-isolated passageways or fire-isolated ramps, and are not doorways opening to a road or open space, must be protected by -/60/30 fire doors that are self-closing, or automatic-closing in accordance with (ii) and (iii) of Clause C3.8.	Sufficient details have not been provided at this stage however, it is assumed the building can readily comply. A detailed door schedule including FRL requirements of all doorways is to be provided for further assessment at CC stage	CRA – Refer Annexure F
C3.9: Service penetrations in fire-isolated exits	The fire isolated exits are not to be penetrated by any services other than: > electrical wiring associated with: ○ a lighting, detection, or pressurization system serving the exit; or ○ a security, surveillance or management system serving the exit; or ○ an intercommunication system or an audible or visual alarm system in accordance with D2.22; or ○ the monitoring of hydrant or sprinkler isolating valves. > ducting associated with a pressurisation system if it; (ix) is constructed of material having an FRL of not less than -/120/60 where it passes through any other part of the building; and (x) does not open into any other part of the building; or > water supply pipes for fire services.	It is assumed the building can readily comply with the provisions of C3.9, however, at this stage service drawings have not been provided demonstrating compliance with this clause. Service drawings are required to be provided for further assessment at CC stage.	CRA – Refer Annexure F

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C3.10: Openings in fire-isolated lift shafts	> Lift landing doors are required to be fire doors with an <i>FRL</i> 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 <i>FRL</i> of not less than -/60/60 if it exceeds 35 000 mm² in area.	A door schedule has not been provided at this stage. Doors from the lift providing access to public/common areas are to be provided with -/60/- lift landing doors. Detailed architectural drawings, including door schedules and BCA specification are required to be submitted for further assessment at CC stage	CRA – Refer Annexure F
C3.11: Bounding Construction: Class 2, 3 and 4 Buildings	> The doorways between sole occupancy units and the public lobbies and any common / service rooms and the public lobbies (class 2 parts) must be protected by self-closing -/60/30 fire doors. > In a Class 2 building where a path of travel to an exit does not provide a person seeking egress with a choice of travel in different directions to alternative exits and is along an open balcony, landing or the like and passes an external wall of– (i) another sole-occupancy unit; or (ii) a room not within a sole-occupancy unit, then that external wall must– (i) be constructed of concrete or masonry, or be lined internally with a fire-protective covering; and (ii) have any doorway fitted with a self-closing, tight-fitting solid core door not less than 35 mm thick; and (iii) have any windows or other openings– (A) protected internally in accordance with C3.4; or (B) located at least 1.5 m above the floor of the balcony, landing or the like.	A door schedule has not been provided at this stage. Doors providing access from public lobby to within each sole-occupancy unit are to be provided with a -/60/30 fire door. Where sole-occupants have not been provided with a point of choice along an open balcony (Level 00-level 08), then that external wall must– 1. be constructed of concrete or masonry, or be lined internally with a fire-protective covering; and 2. have any doorway fitted with a self-closing, tight-fitting solid core door not less than 35 mm thick; and 3. have any windows or other openings– (A) protected internally in accordance with C3.4; or (B) located at least 1.5 m above the floor of the balcony, landing or the like. Please note, that for level 01- level 08 where the sole-occupancy units have been provided with a point of choice to an exit, doors and windows need not be protected to satisfy the requirements of this clause. Furthermore, there are areas within public corridors on level 14 which contain furniture, confirmation is to be	FI- Refer to Executive Summary

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		provided as to whether this area will be enclosed to create a room. Detailed architectural drawings, including door schedules and BCA specification are required to be submitted for further assessment.	
C3.12: Openings in floors and ceilings for services	Where services pass through a floor which is required to achieve an <i>FRL</i> or a ceiling required to have a <i>resistance to the incipient spread of fire</i>, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15. Where a service passes through a floor which is required to be protected by a <i>fire-protective</i> covering, the penetration must not reduce the fire performance of the covering.	Where services pass through the floor and ceilings provided with an <i>FRL</i> the service should be protected in accordance with C3.12. The service, building element and any protection method at the penetration are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the required <i>FRL</i> or resistance to the incipient spread of fire; or differ from a prototype assembly of the service, building element and protection method in accordance with Section 4 of AS 4072.1. All service drawings including Mechanical, Electrical, Hydraulic & Fire are to be submitted for further assessment at CC stage	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 <i>non-combustible</i> or has an <i>FRL</i> of not less than –/30/30; or (b) a self-closing –/60/30 fire door or hopper; or (c) an access panel having an <i>FRL</i> of not less than –/60/30; or (d) if the shaft is a garbage shaft – a door or hopper of <i>non-combustible</i> construction.	A door schedule has not been provided at this stage. It is assumed the building can readily comply. Detailed architectural drawings, including door schedules and BCA specification are required to be submitted for further assessment at CC stage	CRA – Refer Annexure F

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C3.15: Openings for service installations	Where services pass through an element which is required to achieve an <i>FRL</i> (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15. Note: contractors should check with PCA to confirm compliance with their proposed fire stopping method.	Where services pass through building elements provided with an <i>FRL</i>, the service should be protected in accordance with C3.15. The service, building element and any protection method at the penetration— are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the required <i>FRL</i> or resistance to the incipient spread of fire; or differ from a prototype assembly of the service, building element and protection method in accordance with Section 4 of AS 4072.1. All service drawings including Mechanical, Electrical, Hydraulic & Fire Services are to be provided for further assessment at CC stage	CRA – Refer Annexure F
C3.16: Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4:2014 to achieve the required <i>FRL</i> .	Where required, construction joints to be protected in accordance with clause C3.16.	CRA – Refer Annexure F
C3.17: Columns protected with lightweight construction to achieve an <i>FRL</i>	A column protected by lightweight construction to achieve an <i>FRL</i> which passes through a building element that is required to have an <i>FRL</i> 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 <i>FRL</i> or resistance to the incipient spread of fire.	Specific details regarding lightweight construction have not been provided at this stage. It is assumed the building can readily comply. Detailed architectural drawings and BCA specification are required to be submitted to demonstrate compliance at CC stage	CRA – Refer Annexure F
Specification C1.1 – Fire-Resisting Construction			
2.0: General Requirements	Informational	Noted	Noted

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2.1: Exposure to fire-source features	A building element is exposed to a <i>fire-source feature</i> if any of the horizontal straight lines between that part and the <i>fire-source feature</i> , or vertical projection of the feature, is not obstructed by another part of the building that— (i) has an <i>FRL</i> of not less than 30/—/—; and (ii) is neither transparent nor translucent.	Noted	CRA – Refer Annexure F
2.2: Fire protection for a support of another part	Where a part of a building required to have an <i>FRL</i> depends upon direct vertical or lateral support from another part to maintain its <i>FRL</i> , that supporting part must have an <i>FRL</i> not less than that required by other provisions of this Specification; and if located within the same <i>fire compartment</i> as the part it supports have an <i>FRL</i> in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	Noted	CRA – Refer Annexure F
2.3: Lintels	A lintel must have the <i>FRL</i> 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).	Structural engineer is to provide design certification and consider the requirements of spec C1.1.	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.	Structural engineer is to provide design certification and consider the requirements of spec C1.1.	CRA – Refer Annexure F
2.5: General concessions	Structures on roofs — A <i>non-combustible</i> structure situated on a roof need not comply with the other provisions of this Specification if it only contains— (i) lift motor equipment; or (ii) one or more of the following:	The concession for structures to be constructed of non-combustible material on the roof level may be applied.	CRA – Refer Annexure F

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		(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 <i>non-combustible</i> and do not contain flammable or combustible liquids or gases.		
2.6:	Mezzanine floors: Concession	N/A	N/A	N/A
2.7:	Enclosure of shafts	Fire-isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction having an <i>FRL</i> 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 <i>non-combustible</i> shafts laid directly on the ground.	The garbage chute located in basement level is required to be contained within a fire isolated shaft and enclosed at the bottom of the shaft in accordance with Clause Spec C1.1 Clause 2.7. The architectural drawings indicate that the shaft will discharge into a bin room, which technically does not comply with the provisions of this clause. The Fire Engineer is to address the construction of the shaft and the bin storage room via Fire Engineering Performance Solution Report.	PS- Refer to Part 3.3.
2.8:	Carparks in Class 2 and 3 Buildings	N/A	N/A	N/A
2.9:	Residential Aged Care building: Concession	N/A	N/A	N/A
3.0:	Type A fire-resisting construction	Type A fire-resisting construction is applicable to the development.	Refer to part 3 clauses below for the relevant Type A Construction requirements applicable to the project.	-

Section C: Fire Resistance

3.1: Fire-resistance of building elements	> The FRL's of all elements are to be in accordance with the FRL's detailed in the Table contained within Part 4.0 of this report. > External walls, common walls and the flooring and floor framing of lift pits must be <i>non-combustible</i>. (Note: insulation and sarking used must be <i>non-combustible</i>) > 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 <i>non-combustible</i> roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or <i>sarking-type material</i>, 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 <i>non-combustible</i> insulation. When an insulation material is not certified as <i>non-</i>	It is assumed the building can readily comply. Sufficient details have not been provided at this stage to demonstrate compliance. The party wall/common wall is required to achieve an FRL (90/90/90). In the storey directly below the roof the wall shall extend to the underside of a non-combustible roof covering. At this stage consideration shall be given to cavity barriers which are recommended to be within cavity of the façade. Although technically not raised or required within the NCC, BCA logic strongly recommend that cavity barriers are incorporated into the design. The design and proposed method of smoke/fire separation will be form part of a collaborative discussion between the Design Team, Fire Engineer and Façade Engineer. Generally, it is expected that the installation of cavity barriers will be addressed via Fire Engineering Performance Solution Report. The Structural Engineer is to provide design drawings and certification specifically referencing applicable BCA clauses, relevant Australian Standards and any applicable Fire Engineering Performance Solution Report with regards to the structural design.	CRA – Refer Annexure F
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Section C: Fire Resistance

	<i>combustible</i>, this material will need to be the subject of a Fire Engineering Assessment at the CC stage. > The <i>FRLs</i> 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 <i>fire-source feature</i>. > It should also be noted that if Dintel material is to be used as an element where the BCA requires such element to be <i>non-combustible</i>, this material will need to be the subject of a Fire Engineering Assessment at the CC stage		
3.2: Concessions for floors	A floor need not comply with Table 3 if— (a) it is laid directly on the ground; or (b) in a Class 2, the space below is not a <i>storey</i>, does not accommodate motor vehicles, is not a storage or work area, and is not used for any other ancillary purpose; or (c) it is a timber stage floor in a Class 9b building laid over a floor having the <i>required FRL</i> and the space below the <i>stage</i> is not used as a dressing room, store room, or the like; or (d) it is within a <i>sole-occupancy unit</i> in a Class 2 or 3 building or Class 4 part of a building; or (e) it is an open-access floor (for the accommodation of electrical and electronic services and the like) above a floor with the <i>required FRL</i>.	The basement floor slab need not be provided with an FRL.	Noted
3.3: Floor Loading of Class 5 and 9b buildings: Concession	N/A	N/A	N/A

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3.4: Roof superimposed on concrete slab: Concession	A roof superimposed on a concrete slab roof need not comply with Clause 3.1 as to fire-resisting construction if— (a) the superimposed roof and any construction between it and the concrete slab roof are non-combustible throughout; and (b) the concrete slab roof complies with Table 3.	Noted	Noted
3.5: Roof: Concession	A roof need not comply with Table 3 if its covering is <i>non-combustible</i> and the building— (a) has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 installed throughout; or (b) has a rise in storeys of 3 or less; or (c) is of Class 2 or 3; or (d) has an <i>effective height</i> of not more than 25 m and the ceiling immediately below the roof has a <i>resistance to the incipient spread of fire</i> to the roof space of not less than 60 minutes.	The building is a Class 2 building and therefore the concession may be applied to the building.	CRA – Refer Annexure F
3.6: Roof lights	If a roof is required to have an <i>FRL</i> or its covering is required to be <i>non-combustible</i>, roof lights or the like installed in that roof must— (a) have an aggregate area of not more than 20% of the roof surface; and (b) be not less than 3 m from— (i) any boundary of the allotment other than the boundary with a road or public place; and (ii) any part of the building which projects above the roof unless that part has the <i>FRL</i> required of a <i>fire wall</i> and any openings in that part of the wall	There are numbers of skylights including a grill floor within the proposed development which are located within 3m of western allotment boundary. Similarly, to the discussion held within Clause 3.4 of this report it is our understanding that along the western allotment boundary an easement has been created for a public walkway and the distance to the existing building at 4 Murray Rose Avenue exceeds 20 metres. On this basis it is proposed to provide a Performance Solution to vary the method of protection required to the skylights within 3 metres of the allotment boundary	PS-Refer to Part 3.3

Section C: Fire Resistance

	for 6 m vertically above the rooflight or the like are protected in accordance with C3.4; and (iii) any rooflight or the like in an adjoining <i>sole-occupancy unit</i> if the walls bounding the unit are required to have an <i>FRL</i>; and (iv) any rooflight or the like in an adjoining fire-separated section of the building; and (c) if a ceiling with a resistance to the incipient spread of fire is required, be installed in a way that will maintain the level of protection provided by the ceiling to the roof space.		
3.7: Internal columns and walls: Concession	For a building with an <i>effective height</i> of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than <i>fire walls</i> and shaft walls may have— (a) in a Class 2 or 3 building: FRL 60/60/60	As the building exceeds 25m in effective height the concession may not be applied.	N/A
3.8: Open spectator stands and indoor sports stadiums concession	N/A	N/A	N/A
3.9: Carparks	N/A	N/A	N/A
3.10: Class 2 and 3 buildings Concession	N/A	N/A	N/A

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

Section D: Access and Egress			
D1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
D1.1: Application of Part	The Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of a <i>sole-occupancy unit</i> in a Class 2.	Noted	Noted
D1.2: Number of exits required	Basements– Not less than 2 <i>exits</i> must be provided from any storey if egress from that storey involves a vertical rise within the building of more than 1.5 m, unless – (i) the floor area of the storey is not more than 50 m²; and (ii) the distance of travel from any point on the floor to a single <i>exit</i> is not more than 20 m. Over 25m: > As the building has an <i>effective height</i> of more than 25 metres, not less than 2 <i>exits</i> must be provided from each storey.	As the building exceeds 25m in effective height technically, every part of the building is required to be provided with a minimum of two (2) exits. Generally, most parts of the building have been provided with two exits however in the following locations it is proposed to provide a single exit in lieu of two (2); > Fire Hydrant Pump room > Residential Level 14 The client has advised that the Fire Engineer will address a single exit in lieu of two (2) via Performance Solution Report.	PS-Refer to Part 3.3
D1.3: When fire-isolated stairways and ramps are required	Every exit stairway must be fire-isolated, except for stairs to a residential building connecting three (3) storeys plus one additional storey it contains only carparking or the building is sprinkler protected.	The architectural drawings indicate that all stairs are constructed within a fire rated shaft. Detailed architectural drawings including FRL annotations and compartment drawings are to be submitted for further assessment.	CRA – Refer Annexure F
D1.4: Exit travel distances	<u>Class 2 residential –</u> > The entrance doorway of each <i>sole-occupancy unit</i> must be not more than – - o 6 m from an <i>exit</i> or from a point from which travel in different directions to 2 <i>exits</i> is available; or	There are various locations within the development where the distance to an exit or the distance to a point of choice exceeds the prescriptive requirements of BCA Clause D1.4 as identified below; > Level B1 Unit 3B3- Distance to a point of choice measured up to 11 metres.	CRA – Refer Annexure F

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	○ 20 m from a single <i>exit</i> serving the storey at the level of egress to a road or open space; and > No point on the floor of a room which is not in a <i>sole-occupancy unit</i> must be more than 20 m from an <i>exit</i> or from a point at which travel in different directions to 2 <i>exits</i> is available. <u>Class 7a carpark—</u> No point on a floor must be more than 20 m from an <i>exit</i>, or a point from which travel in different directions to 2 <i>exits</i> is available, in which case the maximum distance to one of those <i>exits</i> must not exceed 40 m. > no point on a floor must be more than 20 m from an <i>exit</i>, or a point from which travel in different directions to 2 <i>exits</i> is available, in which case the maximum distance to one of those <i>exits</i> must not exceed 40 m; and > in a Class 5 or 6 building, the distance to a single <i>exit</i> serving a storey at the level of access to a road or open space may be increased to 30 m.	> Level 02 Unit 2B-9, 1B-7 distance to a point of choice measured up to 15 metres. > Level 09,10,11,12- distance to a point of choice measured up to 6.5 meters The client has advised that a Fire Engineer will be engaged to address extended travel distance via Fire Engineering Performance Solution Report. Furthermore, within the garbage holding area, the distance to a point of choice exceeds 20m, measured up to 45m. It is recommended that an exit door is incorporated within the roller shutter and additional horizontal exit discharging into residential corridor is provided. Please refer to annotated architectural assessment for further guidance.	
D1.5: Distance between alternative exits	<i>Exits</i> that are required as alternative means of egress must be— (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 <i>exits</i> is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than— (i) in a Class 2— 45 m apart; or (ii) in all other cases — 60 m apart; and	The distance between alternate exits within level 09-level 12 & 13 is less than 9m apart. The distance between exits on level 02 exceeds 45m. The client has advised that the Fire Engineer will address variations to the Deemed to Satisfy provisions via Performance Solution.	PS-Refer to Part 3.3

Section D: Access and Egress			
	(d) located so that alternative paths of travel do not converge such that they become less than 6 m apart. Note: the distance between <i>exits</i> must be measured through the point at which travel two <i>exits</i> is available.		
D1.6: Dimensions of exits and paths of travel to exits	In a required <i>exit</i> or path of travel to an <i>exit</i>– > the unobstructed height throughout <i>exits</i> and paths of travel to <i>exits</i> 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 <i>exit</i> or path of travel to an <i>exit</i>, 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 <i>exit</i> must not diminish in the direction of travel to a road or open space.	The dimensions of exits and paths of travel to an exit generally demonstrate compliance with BCA Clause D1.6. It is to be noted that the bike rack located adjoining the fire isolated stairs discharging to Murray Rose Avenue are not to impeded on the path of travel.	CRA – Refer Annexure F
D1.7: Travel via fire-isolated exits	> A doorway from a room must not open directly into a stairway that is required to be fire-isolated unless it is from – (i) a public corridor, public lobby or the like; or (ii) a <i>sole-occupancy unit</i> occupying all of a storey; or (iii) a sanitary compartment, airlock or the like.	There are various deviations from the Deemed to Satisfy provisions of BCA Clause D1.7 noted below; > Fire stairs discharge to roof as open space level 01 which requires passing openings in the external wall of the building (glazing, sole-occupancy unit entry doors, garbage chute hopper) technically the openings are required to be protected in accordance with BCA Clause D1.7 (c) and C3.4.	PS-Refer to Part 3.3

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	> D1.7 (b) - Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (i) to a road or open space; or (ii) to a point— (A) in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and (B) from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or (iii) into a covered area that— (A) adjoins a road or open space; (B) and is open for at least 1/3 of its perimeter; and (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and (D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m. > D1.7 (c) - Where a path of travel from the point of discharge of a fire-isolated <i>exit</i> necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— (i) an FRL of not less than 60/60/60; and	> Fire stair leading to Murray Rose Avenue discharges to a undercroft within the building which is not open for 2/3 its perimeter. The client has advised that a Fire Engineer will be engaged to address variations to the Deemed to Satisfy provisions of the BCA.	FI-Refer to Part 3.4
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Section D: Access and Egress

	(ii) any openings protected internally in accordance with C3.4, (iii) for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. > D1.7 (d) If more than 2 access doorways, not from a sanitary compartment or the like open to a required fire-isolated <i>exit</i> in the same storey – ○ a smoke lobby in accordance with D2.6 must be provided; or ○ the <i>exit</i> must be pressurized in accordance with AS 1668.1:2015		
D1.8: External stairways or ramps in lieu of fire-isolated exits	N/A	N/A	N/A
D1.9: Travel by non-fire-isolated stairways or ramps	N/A	Any stairways which are considered the required exit egress from the building are fire-isolated stairways. Therefore, the provisions of this clause do not apply.	N/A
D1.10: Discharge from exits	<i>Exits</i> must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the <i>exit</i>. If a required <i>exit</i> leads to open space, the path of travel to the road must have an unobstructed width of not less than 1m. If an <i>exit</i> 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 <i>exits</i> must be as far apart as practical	The exits throughout the building are considered to be located where they cannot be blocked, therefore, suitable barrier/bollards are not required. However, external factors that may have implications are out of our control.	Complies

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D1.11: Horizontal exits	<i>Horizontal exits</i> must not comprise more than half of the required <i>exits</i> from any part of a storey divided by a <i>fire wall</i> .	As disused previously within the body of this report, horizontal exits will facilitate occupant egress from B1 and Level 00. The number and location of the horizontal exits demonstrate compliance with the provisions of this Clause.	Complies
D1.12: Non-required stairways, ramps or escalators	N/A	N/A	N/A
D1.13: Number of persons accommodated	Informational— The number of persons accommodated in a storey, room or mezzanine must be determined within consideration to the purpose for which it is used and the layout of the floor area by— (a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person listed in BCA Table D1.13 according to the use of that part, excluding spaces set aside for— (i) lifts, stairways, ramps and escalators, corridors, hallways, lobbies and the like; and (ii) service ducts and the like, sanitary compartments or other ancillary uses; or (b) reference to the seating capacity in an assembly building or room; or (c) any other suitable means of assessing its capacity. Based on floor area and Table D1.13, the population numbers are as follows:	It is estimated that there will be not more than 5 persons per SOU.	Noted

Section D: Access and Egress			
D1.14: Measurement of distances	Informational – The nearest part of an <i>exit</i> means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a <i>horizontal exit</i>, the nearest part of the doorway.	Noted	Noted
D1.15: Method of Measurement	Informational	Noted	Noted
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	Informational – (a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a floor area of not more than 100 m²; or (ii) all but one point of egress from a plant room, a lift machine room or a Class 8 electricity network substation with a floor area of not more than 200 m². (b) A ladder permitted under (a)— (i) may form part of an <i>exit</i> provided that in the case of a fire-isolated stairway it is contained within the shaft; or	Plant equipment located on roof level will be accessed via fire isolated passageway located on level 14.	N/A

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	(ii) may discharge within a storey in which case it must be considered as forming part of the path of travel; and (iii) for a plant room or a Class 8 electricity network substation, must comply with AS 1657.		
D1.17: Access to lift pits	Access to lift pits with a depth of under 3m must be provided through the lowest landing doors. If a lift pit exceeds 3m in depth, access must be provided in accordance with D1.7 sub-clause (b).	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.	Noted
D1.18: Egress from early childhood centres	N/A	N/A	N/A
Part D2 – Construction of Exits			
D2.0: Deemed-to-Satisfy Provisions	Informational	Noted	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 <i>sole-occupancy units</i> .	Noted	Noted
D2.2: Fire-isolated stairways and ramps	The fire isolated stairways must be constructed of <i>non-combustible</i> materials and constructed so that if there is local failure it will not cause structural damage to or impair the fire-resistance of the shaft.	The structural engineer will need to provide design certification with regards to the structural design of the fire isolated stairs.	CRA – Refer Annexure F
D2.3: Non-fire-isolated stairways and ramps	N/A	N/A	N/A

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D2.4: Separation of rising and descending stair flights	If a stairway serving as an <i>exit</i> is required to be fire-isolated— (a) there must be no direct connection between— (i) a flight rising from a storey below the lowest level of access to a road or open space; and (ii) a flight descending from a storey above that level; and (b) any construction that separates or is common to the rising and descending flights must be (i) non-combustible; and (ii) smoke proof in accordance with Clause 2 of Specification C2.5.	The architectural drawings indicate that the stair rising from basement level will be separated from the stair descending from residential levels.	Complies
D2.5: Open access ramps and balconies	N/A	N/A	N/A
D2.6: Smoke lobbies	N/A	N/A	N/A
D2.7: Installations in exits and paths of travel	> Access to service shafts and services other than to fire-fighting or detection equipment must not be provided from a fire-isolated stairway or fire-isolated passageway. > Gas or other fuel services must not be installed in a required <i>exit</i>. > 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 <i>non-combustible</i> construction or a fire protective covering with doorways suitably sealed against smoke spread. > Electrical wiring may be installed in a fire-isolated <i>exit</i> if the wiring is associated with:	The architectural drawings indicate the location of the service rooms within the public corridors and open balcony areas of the residential parts of the building located in paths of travel to an exit. It is recommended that a door schedule is provided, identifying non-combustible construction or a fire protective covering with doorways suitably sealed against smoke spread for further assessment at CC stage	CRA – Refer Annexure F

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	○ a lighting, detection, or pressurization system serving the <i>exit</i>; or ○ a security, surveillance or management system serving the <i>exit</i>; 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.		
D2.8: Enclosure of space under stairs and ramps	N/A	N/A	N/A
D2.9: Width of stairways and ramps	Informational— A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2 m.	Noted	Noted
D2.10: Pedestrian ramps	N/A	N/A	N/A
D2.11: Fire-isolated passageways	The enclosing construction of a fire isolated passageway must have an FRL not less than that required for the fire isolated stair.	Sufficient details have not been provided at this stage however, it is assumed the building can readily comply. Detailed architectural drawings including FRL annotations and compartment drawings are to be submitted for further assessment at CC stage	CRA – Refer Annexure F
D2.12: Roof as open space	Roof as open space If an exit discharges to a roof of a building, the roof must— (a) have an FRL of not less than 120/120/120; and	The podium of level 01 is considered roof as open space. However, the following variations from the Deemed to Satisfy provisions of the BCA have been assessed;	PS- Refer to Part 3.3

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	(b) not have any roof lights or other openings within 3 m of the path of travel of persons using the exit to reach a road or open space.	> There are various openings along the path of travel including lift landing opening, garbage chute and drainage openings within the slab. > The path of travel to the road will require occupants passing beneath the building when discharging to Murray Rose Avenue & Bennelong Parkway. The client has advised that a Fire Engineer will be engaged to address variations to the Deemed to Satisfy provisions of the BCA.	
D2.13: Goings and risers	Stairways must comply with the following: > Stairways must have not more than 18 and not less than 2 risers in each flight; > Goings must be between 240 mm and 355 mm within the residential units; > Goings must be between 250 mm and 355 mm; > Goings must be between 250 mm and 355 mm in other areas; > Risers must be between 115 mm high and 190 mm high; > The slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700; > The goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (R) are considered constant if the variation between— (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm.	Sufficient details have not been provided at this stage to demonstrate compliance. However, it is assumed the building is capable of achieving compliance with the provisions of this Clause. Architectural drawings including 1:50 typical stair details are to be submitted for further assessment at CC stage	CRA – Refer Annexure F

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	> Risers must not contain any openings that would permit a 125 mm sphere to pass through. > Each tread must have a non-slip finish or an adequate non-skid strip near the edge of the nosings; > Treads must be of solid construction (not mesh or perforated) if the stairway is more than 10 m high or connects more than 3 storeys. > In the case of a required stairway, no winders in lieu of a landing > Treads must have a surface or nosing strip with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with AS 4586-2013 Slip resistance classification of new pedestrian surface materials.																
D2.14: Landings	Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013. <table><tr><th rowspan="2">Application</th><th colspan="2">Surface Condition</th></tr><tr><th>Dry</th><th>Wet</th></tr><tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr><tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr><tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr></table>	Application	Surface Condition		Dry	Wet	Ramp steeper than 1:14	P4 or R11	P5 or R12	Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11	Tread or landing surface	P3 or R10	P4 or R11	Compliant landings have been demonstrated on the architectural drawings. No details demonstrating compliance with regards to the slip-resistance been submitted at this stage. It is assumed the building can readily comply. Architectural specification and test reports in accordance with 4586:2013 are to be provided for further assessment at CC stage	CRA – Refer Annexure F
Application	Surface Condition																
	Dry	Wet															
Ramp steeper than 1:14	P4 or R11	P5 or R12															
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11															
Tread or landing surface	P3 or R10	P4 or R11															

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	Nosing or landing edge strip	P3	P4		
D2.15: Thresholds	The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless– (a) in a building required to be accessible, the doorway– (i) opens to a road or open space; and (ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1:2009; or (b) in other cases– (i) the doorway opens to a road or open space, external stair landing or external balcony; and (ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.			Sufficient details have not been provided at this stage. It is to be noted that where a step is provided for weatherproofing purposes to each sole-occupancy unit, this is a deviation from the Deemed to Satisfy provisions of the BCA and is required to be addressed via Fire Engineering Performance Solution Report. Note: where an exit discharges to the road or open space a step up to 190mm can be incorporated within the threshold of the doorway.	FI-Refer to Part 3.4
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–			The architectural floor plans generally demonstrate balustrades in compliant locations. However, sufficient details have not been provided at this stage to undertake a detailed assessment. It is to be noted that where the barrier is installed to protect a fall of greater than 4m, no horizontal members may be constructed between 150mm-760mm. Any horizontal member with a depth 10mm or greater will be considered a foothold. Consideration shall be giving to elements which may facilitate climbing such as gas/water points, clothesline or a/c units.	CRA – Refer Annexure F

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	○ a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and ○ the opening between rails must not be more than 460 mm <u>Balustrade openings – other than fire-isolated stairs</u> > A 125 mm sphere must not be able to pass through any opening and for stairways, the 125 mm is measured above the nosing line of the stair treads. <u>Climbability – other than fire-isolated stairs</u> For floors more than 4m above the surface beneath, the balustrade must not incorporate any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that could facilitate climbing.		
D2.17: Handrails	Handrails to stairways must: > be located along at least one side of the ramp or flight (a flight being 2 or more risers); and > located along each side if the total width of the stairway or ramp is 2m or more; and > be fixed at a height of not less than 865 mm above the nosings of the stair treads and the floor surface of the ramp, landing, or the like; and > be continuous between stair flight landings and have no obstruction that will break a hand-hold. > be constructed to comply with clause 12 of AS 1428.1:2009 (including handrails to the fire stairs). > Handrails in common areas (other than fire stairs) must also accord with D3.3.	The requirements of BCA Clause D2.17 have generally been demonstrated within the architectural drawings. However, sufficient details have not been provided at this stage to undertake a detailed assessment. In accordance with AS1428.1 handrails are required to be consistent throughout the flight and measure between 865mm-1000mm to the top of the handrail.	CRA – Refer Annexure F

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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.

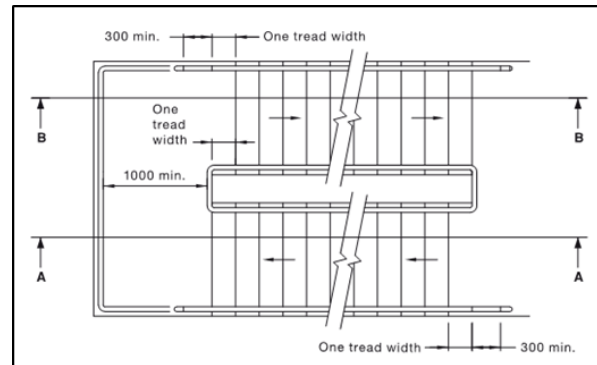


Figure 28 in AS 1428.1:2009

D2.18: Fixed platforms, walkways stairways and ladders	Plant areas may be accessed via stairs and ladders compliant with AS 1657:2018.	Sufficient details have not been provided at this stage for an assessment. Detailed architectural drawings & Specification is to be provided detailing access to plant areas.	CRA – Refer Annexure F
D2.19: Doorways and doors	> Sliding doors serving as <i>exit</i> doors must be openable manually under a force of not more than 110N.	Sliding doors are not proposed within the development.	Noted

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	> 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 <i>fire compartment</i> served by the door. > A power operated door in a path of travel to a required <i>exit</i> 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.		
D2.20: Swinging doors	Swinging doors in a required <i>exit</i> must not encroach— (i) at any part of its swing by more than 500 mm on the required 1m width of the <i>exit</i> and (ii) when fully open, by more than 100 mm on the required 1m <i>exit</i> 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 <i>exit</i> 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 <i>exit</i> 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).	Generally, throughout the building doors serving as the required exit swing in the direction of travel.	CRA – Refer Annexure F
D2.21: Operation of latch	All doors in a required <i>exit</i> or forming part of a required <i>exit</i> AND doors in a path of travel to a required <i>exit</i> must be readily openable without a key from the side that faces a person seeking egress, by—	No details of hardware have been provided at this stage. A door schedule and BCA specification is to be submitted which demonstrate compliance with D2.21 and AS1428.1-2009 at CC stage	CRA – Refer Annexure F

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- (iii) a single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 –
 - (A) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and
 - (B) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm and not more than 45mm; or
- (iv) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor.
- (v) where the latch operation device referred to in (ii) is not located on the door leaf itself—
 - (A) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located—
 - (aa) not less than 500 mm from an internal corner; and
 - (bb) for a hinged door, between 1 m and 2 m from the door leaf in any position; and
 - (cc) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position.
 - (B) braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device.

The above requirements do not apply to a door that –

Section D: Access and Egress

	(i) serves only or is within a <i>sole-occupancy unit</i> in a Class 2 building; or (ii) serves a <i>sole-occupancy unit</i> 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	Doors of the fire-isolated <i>exits</i> must not be locked from the inside unless the door is fitted with a fail-safe device which automatically unlocks the door upon the activation of a fire alarm and – (i) on at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or (ii) an intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation.	Sufficient details have not been provided at this stage to demonstrate compliance however, it is assumed compliance can readily be demonstrated. A door schedule and BCA specification is to be submitted which demonstrate compliance with D2.22 at CC stage It is to be noted that where free passage is not provided to all doors within the fire-isolated stairways upon activation of the smoke detection system/sprinkler system all doors are required to open.	CRA – Refer Annexure F
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.	Signage details have not been provided at this stage. A signage schedule is to be submitted for further assessment demonstrating compliance with D2.23 at CC stage	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–	Window hardware details have not been provided at this stage. It is important to noted that windows not located within bedrooms are required to comply with the provisions of Pat D2.24 (c) and in addition to protection a barrier is required to be provided with a minimum height of 865mm. A window schedule and BCA specification are to be submitted for further assessment demonstrating compliance with D2.24 at CC stage	CRA – Refer Annexure F
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	(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 Note: when considering the preferred option to comply with this clause consideration will need to be given to natural ventilation required under Clause F4.6.		
D2.25: Timber stairways: concession	N/A	Timber stairs are not proposed to be constructed within the development.	N/A
Part D3 – Access for People with A Disability			
D3.0: Deemed-to-Satisfy Provisions	Informational	The client has advised that a third-party Access Consultant will be engaged to assess the provisions of Part D3 of the BCA.	Noted

Section E: Services and Equipment

Part E1 – Fire Fighting Equipment

E1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E1.3: Fire hydrants	As the building has a floor area greater than 500 m², a fire hydrant system complying with AS 2419.1:2005 must be provided to serve the building. > Hydrant booster assembly location. The booster location must comply with the following: ○ be within 8m of a hardstand for fire brigade appliance; ○ be within sight of the main entry; > Assuming it is attached to the building, be separated from the building by construction achieving FRL 90/90/90 for 2m either side of and 3m above the upper hose connections > Hydrant pump room location (if a pumpset is required). An internal pump room must have a door opening to a road or open space or egress to open space via a fire-isolated exit; > Internal hydrants in each fire-isolated exit at each storey providing coverage to all parts of the building. For internal fire hydrant coverage, all points on the floor must be covered by a 10m hose stream, issuing from 30 m hose length, extending not less than 1m into the room. Note: Consideration should be given to the location of Electrical Substations on adjoining sites in regards to proximity to Fire Hydrant Boosters being within 10.0m	The hydrant pump room and booster are denoted as being located adjoining Bennelong Parkway. However, as the principal pedestrian entrance and the street address is Murray Rose Avenue the location technically does not comply with the requirements AS2419.1-2005. The Fire Engineer is to address the location of the fire hydrant booster assembly via Performance Solution Report. Hydraulic engineering drawings are to be designed and prepared by an accredited practitioner (fire safety) making specific reference to BCA Clause E1.3, AS2419.1-2005 and any relevant Fire Engineer Performance Solution report for further assessment. The hydrant system is to be designed with the following in mind; 1. Ring Main criteria of AS2419.1-2005 2. On site water storage shall be provided in accordance with 4.3 & Section 5 of AS2419.1-2005	PS- Refer to Part 3.3

Section E: Services and Equipment

E1.4: Fire hose reels	A fire hose reel system complying with BCA clause E1.4 and AS 2441:2005 must be provided to the building (excluding Classes 2, 3, 4, 5, 8 and 9c). All points on a floor shall be within reach of a 4 m hose stream issuing from a nozzle at the end of the hose laid on floor. The hose length shall not exceed 36 m. Fire hose reels must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors, except— (ii) doorways in walls referred to in C2.5(a)(v) in a Class 9a building and C2.5(b)(iv) in a Class 9c building, separating ancillary use areas of high potential fire hazard; and (iii) doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (iv) doorway openings to shafts referred to in C3.13.	The location of fire hose reels have not been indicated on the architectural drawings at this stage, however it is assumed the building can readily comply. Hydraulic engineering drawings are to be designed and by an accredited practitioner (fire safety) making specific reference to BCA Clause E1.4, AS2441-2005 and any relevant Fire Engineer Performance Solution report for further assessment at CC stage	FI- Refer to Part 3.4
E1.5: Sprinklers	The building must be provided with a sprinkler system complying with Table E1.5 and Specification E1.5 installed throughout.	Based on the size of the Hydrant pump room it is assumed the sprinkler alarm valves will be located on within the same enclosure. The sprinkler valve room location should be indicated on the plans. The room must have direct egress to road or open space. A required sprinkler system in a building greater than 25 m in effective height must be provided with dual water supply except that a secondary water supply storage capacity of 25,000 litres may be used if— (i) the storage tank is located at the topmost storey of the building; and	CRA – Refer Annexure F

Section E: Services and Equipment

		(ii) the building occupancy is classified as no more hazardous than Ordinary Hazard 2 (OH2) under AS 2118.1; and (iii) an operational fire brigade service is available to attend a building fire Furthermore, It is proposed to provide jet fans within the basement carpark to assist with carpark exhaust. Jet fans may have an adverse impact on sprinkler performance (activation time and spray pattern), smoke layer stability (tenability) and fire spread. Wet Fire Service drawings are to be designed and prepared by an accredited practitioner (fire safety) making specific reference to BCA Clause E1.5, AS2118.1-2017 and any relevant Fire Engineering Performance Solution report for further assessment.	PS-Refer to Part 3.3
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 <i>sole-occupancy unit</i>— (A) to serve only the storey at which they are located; and (B) so that the travel distance from the entrance doorway of any <i>sole-occupancy unit</i> to the nearest fire extinguisher is not more than 10 m.	The architectural drawings detail portable fire extinguishers in compliant locations in accordance with BCA Clause E1.6. A detailed BCA Specification is required to be provided which demonstrates the type and size of fire extinguishers to be provided	Complies

Section E: Services and Equipment			
E1.8: Fire control centres	> The building must be provided with a fire control centre facility in accordance with BCA Specification E1.8. > The fire control centre must be located so that egress from any part of its floor to a public road or open space does not involve changes in level which in aggregate exceed 300 mm.	As the building exceeds 25m in effective height a fire control centre is required to be provided in accordance Clause E1.8. It is to be noted that the fire control centre shall not be used for any other be used for any purpose other than the control of— (i) fire-fighting activities; and (ii) other measures concerning the occupant safety or security.	CRA – Refer Annexure F
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 <i>effective height</i> 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	Noted
E1.10: Provision for special hazards	N/A	N/A	N/A
Specification E1.5 – Fire Sprinkler Systems			
1. Scope	Informational	Noted	Noted
2. Application of automatic fire sprinkler standards	An automatic fire sprinkler system shall comply with AS2118 as relevant to the building classification and the design of the hydraulic consultant.	The building shall be provided with a sprinkler system in accordance with AS2118.12017. Wet fire service drawings are to be designed and prepared by an accredited practitioner(fire safety) making specific reference to BCA Clause E1.5, 2118.1-	CRA – Refer Annexure F

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		2017 and any relevant Fire Engineering Performance Solution Report for further assessment.	
3.	Separation of sprinklered and non-sprinklered areas	Where a part of a building is not protected with sprinklers, the sprinklered and non-sprinklered parts must be fire-separated with a wall or floor which must – (a) comply with any specific requirement of the Deemed-to-Satisfy Provisions of the BCA; or (b) where there is no specific requirement, comply with the relevant part of AS 2118, FPAA101D or FPAA101H.	The building shall be provided with a sprinkler system in accordance with AS2118.12017. CRA – Refer Annexure F
4.	Protection of openings	N/A	N/A
5.	Fast response sprinklers	N/A	N/A
6.	Sprinkler valve enclosures	(a) Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or open space. (b) All sprinkler valve rooms and enclosures must be secured with a system suitable for use by the fire brigade.	Sufficient details have not been provided at this stage, however it is assumed the building can readily comply. The architectural drawings are to be updated to denote the location of the sprinkler alarm valves and pump room where required. FI- Refer to Part 3.4
7.	Water supply	(a) A required sprinkler system must be provided with at least one water supply. (b) A required sprinkler system in a building greater than 25 m in effective height must be provided with dual water supply except that a secondary water supply storage capacity of 25,000 litres may be used if – (i) the storage tank is located at the topmost storey of the building; and	Wet fire service drawings are to be designed and prepared by an accredited practitioner (fire safety) making specific reference to BCA Clause E1.5, AS2118.1-2017 and any relevant Fire Engineering Performance Solution Report. for further assessment at CC stage. CRA – Refer Annexure F

Section E: Services and Equipment			
	(ii) the building occupancy is classified as no more hazardous than Ordinary Hazard 2 (OH2) under AS 2118.1:2017; and (iii) an operational fire brigade service is available to attend a building fire.		
8. Building occupant warning system	A required sprinkler system, except a FPAA101D sprinkler system, must be connected to and activate a building occupant warning system complying with Clause 7 of Specification E2.2a.	Wet fire service drawings are to be designed and prepared by an accredited practitioner(fire safety) making specific reference to BCA Clause E1.5, AS2118.1-2017 and any relevant Fire Engineering Performance Solution Report. for further assessment at CC stage.	CRA – Refer Annexure F
9. Connection to Other Systems	Where a smoke hazard management system is installed and is actuated by smoke detectors, the sprinkler system must, wherever practicable, be arranged to also activate the smoke hazard management system.	Wet fire service drawings are to be designed and prepared by an accredited practitioner(fire safety) making specific reference to BCA Clause E1.5, AS2118.1-2017 and any relevant Fire Engineering Performance Solution Report for further assessment.	CRA – Refer Annexure F
10. Anti-tamper Devices	(a) Where a sprinkler system is installed – (i) over any stage area in a theatre, public hall or the like, visual and audible status indication of sprinkler valves must be provided at the location normally used by the stage manager; or (ii) in a space housing lift electrical and control equipment (including machine rooms, secondary floors and sheave rooms), any valves provided to control sprinklers in these spaces must be located adjacent to the space. (b) Any valves provided to control sprinklers required by (a) must be fitted with anti-tamper monitoring devices connected to a monitoring panel.	Wet fire service drawings are to be designed and prepared by an accredited practitioner(fire safety) making specific reference to BCA Clause E1.5, AS2118.1-2017 and any relevant Fire Engineering Performance Solution Report for further assessment.	CRA – Refer Annexure F

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11.	Sprinkler Systems in Carparks	A sprinkler system protecting a carpark complying with Table 3.9 of Specification C1.1 in a multi-classified building must – (a) be independent of the sprinkler system protecting any part of the building not used as a carpark; or (b) if forming part of a sprinkler system protecting a part of the building not used as a carpark, be designed such that the section protecting the non-carpark part can be isolated without interrupting the water supply or otherwise affecting the effective operation of the section protecting the carpark.	Wet fire service drawings are to be designed and prepared by an accredited practitioner (fire safety) making specific reference to BCA Clause E1.5, AS2118.1-2017 and any relevant Fire Engineering Performance Solution Report	CRA – Refer Annexure F
12.	Residential Care Buildings	N/A	N/A	CRA – Refer Annexure F
13.	Sprinkler systems in lift installations	(a) Where sprinklers are installed in a space housing lift electrical and control equipment, including machine rooms, secondary floors and sheave rooms, sprinklers in these spaces must – (i) have heads protected from accidental damage by way of a guard that will not impair the performance of the head; and (ii) be capable of being isolated and drained, either separately or collectively, without isolating any other sprinklers within the building. (b) Valves provided to control sprinklers referred to in (a) must be installed in accordance with Clause 10(b).	Wet fire service drawings are to be designed and prepared by an accredited practitioner (fire safety) making specific reference to BCA Clause E1.5, AS2118.1-2017 and any relevant Fire Engineering Performance Solution Report. for further assessment at CC stage.	CRA – Refer Annexure F

Part E2 – Smoke Hazard Management			
E2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E2.1: Application of Part	Informational	Noted	Noted
E2.2: General requirements (including Tables E2.2a and E2.2b)	General smoke hazard management requirements An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one <i>fire compartment</i> to another <i>fire compartment</i> or operates in a manner that may unduly contribute to the spread of smoke from one <i>fire compartment</i> to another <i>fire compartment</i> (such as lobby air supply) must— (i) be designed and installed to operate as a smoke control system in accordance with AS 1668.1:2015; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the <i>fire compartments</i> served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1668.1:2015; and for the purposes of this provision, each <i>sole-occupancy unit</i> in a Class 2 or 3 building is treated as a separate <i>fire compartment</i>. Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1:2015 serving more than one <i>fire compartment</i> (other than a carpark ventilation system)	The building has a rise in storeys of fourteen-containing Class 2 & 7a, the following essential fire safety measures are required to be incorporated into the building design. <u>Class 2</u> The class 2 portion of the development is required to be provided with the following. > Smoke detection and alarm system in accordance with table E2.2a Clause 3 within sole-occupancy units (inter-connected within SOU's) > Emergency warning and intercom systems complying with Spec E2.2a and AS 1670.4 – 2018. <u>Class 7a</u> The class 7 portion of the development is required to be provided with the following; > A mechanical ventilation system in accordance with AS1668.2 must comply with clause 5.5 of AS 1668.1 except that— (a) fans with metal blades suitable for operation at normal temperature may be used and the electrical power and control cabling need not be fire rated. (b) Smoke detection and alarm system in accordance with AS1670.1-2018 (c) Emergency warning and intercom systems complying with Spec E2.2a and AS 1670.4 – 2018.	PS-Refer to Part 3.3

	and not forming part of a smoke hazard management system must comply with that Section of the Standard. A smoke detection system must be installed in accordance with Clause 6 of Specification E2.2a to operate AS1668.1:2015 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated exits. Class 2 parts Class 2 parts must be provided with an automatic smoke detection and alarm system complying with BCA Specification E2.2a. Note: Smoke alarms in sole occupancy units are 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. Fire-isolated exits All fire-isolated exits serving a storey above an <i>effective height</i> of 25 m must be provided with an automatic air pressurisation system for fire-isolated exits in accordance with AS 1668.1:2015. The automatic air pressurisation system applies to the entire exit.	Additional, as the stairways serves a storey over an effective height of 25m the stairway and all associated passageways are required to be provided with a pressurisation system in accordance with AS1668.1-2015., the design of the stair pressurisation system will be subject to a Fire Engineering Performance Solution. Furthermore, within the basement carpark It is proposed to provide jet fans within to assist with carpark exhaust. Where jet fans are installed in series a Performance Solution is required to address variations to the provisions of AS1668.1-2015 Service drawings & design certification to be prepared by an accredited practitioner (fire safety) for further assessment.	
E2.3: Provisions for special hazards	N/A	N/A	N/A
Specification E2.2a – Smoke Detection and Alarm System			
1. Scope	Informational	Noted	Noted

2. Type of system	A required automatic smoke detection and alarm system must be provided in accordance with the following: (a) Class 2 buildings and Class 4 parts of a building— (i) a smoke alarm system complying with Clause 3; or (ii) a smoke detection system complying with Clause 4; or (iii) a combination of a smoke alarm system and a smoke detection system complying with Clause 5. (A) Class 5, 6, 7, 8, 9b and 9c buildings— a smoke detection system complying with Clause 4.	A smoke detection and alarm system complying with BCA Clause E2.2a Clause 5, AS3786-2014 & AS1670.1-2018 will be provided throughout. Service drawings & design certification to be prepared by an accredited practitioner (fire safety) for further assessment.	CRA – Refer Annexure F
3. Smoke alarm system	(a) All Class 2 - 9 buildings— (i) A smoke alarm system must— (A) consist of smoke alarms complying with AS 3786; and (B) be powered from the consumer mains source. (ii) In kitchens and other areas where the use of the area is likely to result in smoke alarms causing spurious signals— (A) any other alarm deemed suitable in accordance with AS 1670.1 may be installed provided that smoke alarms are installed elsewhere in the sole-occupancy unit in accordance with Clause 3(b)(i) and Clause 3(b)(ii); or (B) an alarm acknowledgement facility may be installed, except where the kitchen or other area is in a building protected with a sprinkler system complying with Specification E1.5 (other than a	A smoke detection and alarm system complying with BCA Clause E2.2a Clause 5, AS3786-2014 & AS1670.1-2018 will be provided throughout. Interlinked smoke alarms are required to the Class 2 residences at all levels and located between bedrooms and other parts of the building. Service drawings & design certification to be prepared by an accredited practitioner (fire safety) for further assessment.	CRA – Refer Annexure F

	FPAA101D system), the alarms need not be installed in the kitchen or other areas likely to result in spurious signals. (b) Class 2 parts of a building are to be provided with a smoke alarm system, the following applies: (i) Alarms must be installed within each sole-occupancy unit, and located on or near the ceiling in any storey— (A) containing bedrooms— (aa) between each part of the sole-occupancy unit containing bedrooms and the remainder of the sole-occupancy unit; and (bb) where bedrooms are served by a hallway, in that hallway; and (B) not containing any bedrooms, in egress paths. (ii) Where there is more than one alarm installed within a sole-occupancy unit, alarms must be interconnected within that sole-occupancy unit. (iii) Subject to (iv), alarms must be— (A) installed in public corridors and other internal public spaces, located in accordance with the requirements for smoke detectors in AS 1670.1; and (B) connected to activate a building occupant warning system in accordance with Clause 7. (iv) In a Class 2 part of a building protected with a sprinkler system complying with Specification E1.5 (other than a FPAA101D system), alarms are not required in public corridors and other internal public spaces.		
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4.	Smoke detection system	(i) N/A	N/A	N/A
5.	Combined smoke alarm and smoke detection system	(c) A Class 2 part of a building provided with a combination of a smoke alarm system and smoke detection system in accordance with Clause 2 must— (i) be provided with a smoke alarm system complying with Clause 3 within sole-occupancy units; and (ii) subject to (b), be provided with a smoke detection system complying with Clause 4 in areas not within sole-occupancy units. (a) In a Class 2 part of a building protected with a sprinkler system complying with Specification E1.5 (other than a FPAA101D or FPAA101H system), smoke detectors are not required in public corridors and other internal public spaces.	A smoke detection and alarm system complying with BCA Clause E2.2a, AS3786-2014 & AS1670.1-2018 will be provided throughout in accordance with Clause 5 activating an emergency warning and intercom system in accordance with BCA Clause E4.9 & AS1670.4-2018. It is to be noted that where the building is provided with a sprinkler system in accordance with AS2118.1-2017, smoke detectors are not required in public corridors and other internal public spaces. However, refer to Spec E2.2 clause 6 for requirements for smoke detection to activate smoke control systems (stair pressurisation) Service drawings & design certification to be prepared by an accredited practitioner (fire safety) for further assessment.	CRA – Refer Annexure F
6.	Smoke detection for smoke control system	(b) Smoke detectors required to activate air pressurisation systems for fire-isolated exits and zone pressurisation systems must— (i) be installed in accordance with AS 1670.1; and (ii) have additional smoke detectors installed adjacent to each bank of lift landing doors set back horizontally from the door openings by a distance of not more than 3 m. (c) Smoke detectors required to activate— (i) automatic shutdown of air-handling systems in accordance with Table E2.2b; or (ii) a smoke exhaust system in accordance with Specification E2.2b, must— (iii) be spaced—	A smoke detection and alarm system complying with BCA Clause E2.2a, AS1670.1-2018. Service drawings & design certification to be prepared by an accredited practitioner (fire safety) for further assessment.	CRA – Refer Annexure F

	(A) not more than 20 m apart and not more than 10 m from any wall, bulkhead or smoke curtain; and (B) in enclosed malls and walkways in a Class 6 building not more than 15 m apart and not more than 7.5 m from any wall, bulkhead or curtain; and (iv) have a sensitivity— (A) in accordance with AS 1670.1 in areas other than a multi- storey walkway and mall in a Class 6 building; and (B) not exceeding 0.5% smoke obscuration per metre with compensation for external airborne contamination as necessary, in a multi- storey walkway and mall in a Class 6 building. (d) Smoke detectors provided to activate a smoke control system must— (i) (A) form part of a building fire or smoke detection system complying with AS 1670.1; or (B) be a separate dedicated system incorporating control and indicating equipment complying with AS 1670.1; and (i) activate a building occupant warning system complying with Clause 7, except that smoke detectors provided solely to initiate automatic shutdown of air-handling systems in accordance with (b)(i) need not activate a building occupant warning system.		
7. Building occupant warning system	Subject to E4.9, a building occupant warning system provided as part of a smoke hazard management system	Refer to Clause E4.9	Noted.

	must comply with clause 3.22 of AS 1670.1 to sound through all occupied areas except— (e) in a Class 2 part of a building provided with a smoke alarm system in accordance with Clause 3(b)(iii)— (i) the sound pressure level need not be measured within a sole-occupancy unit if a level of not less than 85 dB(A) is provided at the door providing access to the sole-occupancy unit; and (ii) the inbuilt sounders of the smoke alarms may be used to wholly or partially meet the requirements; and (i) in a Class 2 and 3 building or Class 4 part of a building provided with a smoke detection system in accordance with Clause 4(b), the sound pressure level from a building occupant warning system need not be measured within a sole-occupancy unit if a level of not less than 100 dB(A) is provided at the door providing access to the sole-occupancy unit; and		
8. System Monitoring	N/A	System monitoring is required for any sprinkler system installed in accordance with AS2118.1-2017 & AS1670.4-2018	N/A
Part E3 – Lift Installations			
E3.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E3.1: Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1	No details provided at this stage. Detailed architectural drawings and specification to be provided for assessment for further assessment.	CRA – Refer Annexure F
E3.2: Stretcher facility in lifts	A stretcher facility must be provided to an emergency lift required by E3.4.	No specific details provided at this stage.	CRA – Refer Annexure F

	A stretcher facility must be provided to passenger lifts installed to serve any storey above an <i>effective height</i> of 12 m. A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above floor level.	The architectural drawings demonstrate the spatial requirements to accommodate a stretcher facility (600 mm wide x 2000 mm long x 1400 mm) Detailed architectural drawings and specification to be provided for assessment.	
E3.3: Warning against use of lifts in fire	Warning signs indicating “DO NOT USE LIFTS IF THERE IS A FIRE” shall be displayed near every call button for a passenger lift or group of lifts throughout a building as per E3.3.	No details provided at this stage. Detailed architectural drawings and specification to be provided for further assessment.	CRA – Refer Annexure F
E3.4: Emergency lifts	At least one emergency lift complying with (d) must be installed in— (i) a building which has an effective height of more than 25 m	It is assumed that the two lifts contained within the shaft which serve all levels will be allocated as the emergency lifts therefore, demonstrating compliance with this clause. Updated architectural drawings & lift specification are to be submitted for further assessment.	CRA – Refer Annexure F
E3.5: Landings	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D.	The architectural drawings detail compliant landings in accordance with BCA Clause D2.14 Detailed architectural drawings and specification to be provided for further assessment.	Complies
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.	Detailed lift drawings and specification have not been provided for at this stage for assessment. The floor size of the lift cars generally shows sufficient dimensions, which shall be not less than 1400 wide x 1600mm deep. (Refer to part E3.4 for emergency lifts) Certification shall be provided from the lift supplier for the accessible features at Construction Certificate stage.	CRA – Refer Annexure F
E3.7: Fire service controls	The lifts serving any storey above an <i>effective height</i> of 12 m must be provided with:	No details provided at this stage.	CRA – Refer Annexure F

	(a) A fire service recall control switch complying with E3.9 for— (i) a group of lifts; or (ii) a single lift not in a group that serves the storey. (b) A lift car fire service drive control switch complying with E3.10 for every lift.	Detailed architectural drawings and specification to be provided for assessment.	
E3.8: Aged care buildings	N/A	N/A	N/A
E3.9: Fire service recall switch	The fire service control switch required by E3.7, is to comply with this clause. Lift services design to confirm compliance at CC stage.	No details provided at this stage. Detailed architectural drawings and specification to be provided for further assessment.	CRA – Refer Annexure F
E3.10: Lift car service drive control switch	The lift car service drive control switch required by E3.7, is to comply with this clause. Lift services design to confirm compliance at CC stage.	No details provided at this stage. Detailed architectural drawings and specification to be provided for further assessment.	CRA – Refer Annexure F
Part E4 – Visibility In An Emergency, Exit Signs And Warning Systems			
E4.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E4.2: Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with Clause E4.2 of the BCA and AS/NZS 2293.1:2018.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.2 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.3: Measurement of distance	Informational	Noted	Noted
E4.4: Design and operation of emergency lighting	The emergency lighting system must comply with AS/NZS 2293.1:2018.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.4 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F

E4.5: Exit signs	<i>Exits</i> signs are to be provided above or adjacent to a door providing egress as well as directional signage throughout the entire development where necessary.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.5 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.6: Direction signs	Where an <i>exit</i> is not readily apparent, directional signage is to be installed indicating the direction of egress.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.6 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.7: Class 2 and 3 buildings and Class 4 Parts: Exemptions	Informational	Noted	Noted
E4.8: Design and operation of exit signs	<i>Exit</i> signs must comply with AS/NZS 2293.1:2018 and be clearly visible at all times when the building is occupied.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.8 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.9: Emergency warning and intercom systems	An Emergency warning and intercom system complying where applicable with AS 1670.4:2018 must be installed within the building.	As the building exceeds 25m in effective height, an emergency warning and intercom system in accordance with BCA Clause E4.9 & AS1670.4-2018 is required to be installed. Service drawings & design certification to be prepared by an accredited practitioner (fire safety) at Construction Certificate stage specifically referencing AS1670.1-2018, BCA Clause E4.9 and any relevant Performance Solution Report.	CRA – Refer Annexure F

Section F: Health and Amenity

Part F1 – Damp and Weatherproofing

F1.0: Deemed-to-Satisfy Provisions	<i>Performance Requirement</i> 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 <i>Performance Requirement</i> in respect of external walls. The assessment contained within this report does not include an assessment against Performance Provision FP1.4.	It must be demonstrated that the construction of the external walls prevents the penetration of water that could cause; a) unhealthy or dangerous conditions or loss of amenity for occupants; and b) undue dampness or deterioration of building elements.	PS- Refer to part 3.3
F1.1: Stormwater drainage	Stormwater drainage to comply with AS/NZS 3500.3:2018.	Sufficient details not provided at this stage. Hydraulic drawings to be provided at Construction Certificate stage to demonstrate compliance with AS/NZS 3500.3:2018.	CRA – Refer Annexure F
F1.4: External above ground membranes	Waterproofing membranes for external above ground use to comply with AS 4654 Parts 1 and 2:2012.	No details provided at this stage. It is assumed the building can readily comply. This matter to be addressed via detailed architectural drawings & BCA specification	FI- Refer to Part 3.4 of this report.
F1.5: Roof coverings	Roof coverings are to comply with BCA Clause F1.5.	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA specification	CRA – Refer Annexure F
F1.6: Sarking	<i>Sarking-type materials</i> used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2:2017.	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA specification	CRA – Refer Annexure F
F1.7: Water proofing of wet areas in buildings	Wet areas must be constructed in accordance with AS 3740:2010 and F1.7 of the BCA.	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA specification	CRA – Refer Annexure F

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F1.9: Damp-proofing	Moisture is to be prevented from reaching the walls above a damp-proof course, and the underside of the suspended floors.	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA specification	CRA – Refer Annexure F
F1.10: Damp-proofing of floors on the ground	If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870:2011 (N/A to areas that do not require weatherproofing – refer specific clause exemptions).	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA specification	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.	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA Specification.	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.	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA Specification	CRA – Refer Annexure F
Part F2 – Sanitary and Other Facilities			
F2.0: Deemed-to-Satisfy Provisions	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.	The architectural drawings demonstrate compliance with the facilities required for a class 2 building.	Complies
F2.1: Facilities in residential buildings (including Table F2.1)	Informational – (a) The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means	Noted	CRA – Refer Annexure F

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	(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 For the purpose of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels		
F2.2: Calculation of number of occupants and facilities	N/A	N/A	N/A
F2.3: Facilities in Class 3 to 9 buildings (including Table F2.3)	N/A	N/A	N/A
F2.4: Accessible sanitary facilities (including Table F2.4)	(a) Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend— (i) from floor level to the ceiling in the case of a unisex facility; or (ii) to a height of not less than 1.5 m above the floor if primary school children are the principal users; or (iii) 1.8 m above the floor in all other cases. (b) The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2	The architectural drawings indicate 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.	Complies

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	m, measured in accordance with Figure F2.5, between the closet pan within the sanitary compartment and the doorway.		
F2.5: Construction of sanitary compartments	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.	The architectural drawings demonstrate compliance with the facilities required for a class 2 building.	Complies
F2.6: Interpretation: urinals and washbasins	N/A	N/A	N/A
F2.8: Waste Management	N/A	N/A	N/A
F2.9: Accessible adult change facilities	N/A	N/A	N/A
Part F3 – Room Heights			
F3.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F3.1: Height of rooms and other spaces	(a) The height of rooms and other spaces must be not less than— (b) in a Class 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—	Sufficient details have not been provided at this stage to demonstrate compliance. However, it is assumed that compliance is readily achievable. Architectural sections and elevations are to be provided for further assessment at CC stage	CRA – Refer Annexure F

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	(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 (c) in any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and (ii) a commercial kitchen — 2.4 m; and (iii) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like. (iv) A required accessible adult change facility – 2.4m		
Part F4 – Light and Ventilation			
F4.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted

Section F: Health and Amenity

F4.1: Provision of natural light	Natural light must be provided to all habitable rooms. centre.	Sufficient details have not been provided at this stage to demonstrate compliance. However, it is assumed that compliance is readily achievable. Architectural sections and elevations are to be provided for further assessment.	CRA – Refer Annexure F
F4.2: Methods and extent of natural lighting	(a) Natural light must be provided by: (i) Windows: (A) with an aggregate light transmitting area of not less than 10% the floor area of the room; and (B) that are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii) Rooflights, that: (A) have an aggregate light transmitting area of not less than 3% the floor area of the room; or (iii) a proportional combination of windows and roof lights required by (i) and (ii). (b) A required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must be not less than a horizontal distance from that boundary or wall that is the greater of – (c) 1m; and (d) 50% of the square root of the exterior height of the wall in which the window is located, measured from its sill	There are various openings located adjoining the western allotment of the site which are located within 1 metre of the boundary. Based on the RL's provided the height of the external wall is roughly 41.3 meters. When determining compliance with BCA Clause F4.2 and calculating the 50% of the square root the wall is technically required to be set back from the boundary by 3.21 meters. As previously discussed, it is BCA Logic's understanding that an easement has been established adjoining the western boundary of the allotment and on this basis, it may be feasible to address variations to the Deemed to Satisfy provisions via a Performance Solution, further investigations are required.	PS-Refer to Part 3.3

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F4.3:	Natural light borrowed from adjoining room	N/A	Natural light is not required to be borrowed from an adjoining room	N/A
F4.4:	Artificial Lighting	Lighting to all areas is to comply with AS/NZS 1680.0:2009.	No details of lighting at this stage. Electrical consultant to provide drawings and design certification for Construction Certificate stage	CRA – Refer Annexure F
F4.5:	Ventilation of rooms	All rooms to be provided with Clause F4.6 compliant natural ventilation OR a mechanical ventilation or air-conditioning system complying with AS 1668.2:2012.	No details of ventilation to rooms provided at this stage. Mechanical consultant to provide drawings and design certification for further assessment	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— (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.	Sufficient details have not been provided at this stage to demonstrate compliance; however, it is assumed the development is readily capable of compliance. Detailed architectural drawings and sections demonstrating compliance are to be provided for further assessment at CC stage	FI- Refer to Executive Summary
F4.7:	Ventilation borrowed from adjoining room	Ventilation may be 'borrowed' from adjoining rooms in some instances in accordance with this clause.	Sufficient details have not been provided at this stage to demonstrate compliance; however, it is assumed the development is readily capable of compliance. Detailed architectural drawings and sections demonstrating compliance are to be provided for further assessment at CC stage	FI- Refer to Executive Summary

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F4.8:	Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a – > kitchen or pantry	The location of sanitary compartments denoted on the architectural drawings demonstrates compliance with BCA Clause F4.8.	Complies
F4.9:	Airlocks	> N/A	N/A	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.	Sufficient plans and specification have not been provided at this stage to demonstrate compliance. The mechanical contractor should provide design certification making specific reference to applicable BCA clauses, Australian standards and relevant fire engineering reports.	CRA – Refer Annexure F
F4.12:	Kitchen local exhaust ventilation	N/A	N/A	N/A
Part F5 – Sound Transmission and Insulation				
F5.0:	Deemed-to-Satisfy Provisions	Informational	Noted	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	Noted
F5.2:	Determination of airborne sound insulation ratings	A form of construction required to have an airborne sound insulation rating must— (a) have the required value for weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation term ($R_w + C_{tr}$) determined in accordance with AS/NZS ISO 717.1 using results from laboratory measurements; or (b) comply with Specification F5.2.	Details concerning acoustic treatment have not been provided at this stage. A suitably qualified Acoustic Consultant is to be engaged to provide an acoustic specification and certification for CC stage.	CRA – Refer Annexure F

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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 ($L_{n,w} + C_I$) 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.	Details concerning acoustic treatment have not been provided at this stage. A suitably qualified Acoustic Consultant is to be engaged to provide an acoustic specification and certification for CC stage.	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.	Details concerning acoustic treatment have not been provided at this stage. A suitably qualified Acoustic Consultant is to be engaged to provide an acoustic specification and certification for CC stage.	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 <i>sole-occupancy units</i>; 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	Details concerning acoustic treatment have not been provided at this stage. A suitably qualified Acoustic Consultant is to be engaged to provide an acoustic specification and certification for CC stage.	CRA – Refer Annexure F

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	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 <i>sole-occupancy unit</i> from a habitable room (other than a kitchen) in an adjoining unit; or (B) a <i>sole-occupancy unit</i> 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 <i>sole-occupancy units</i> from a stairway, public corridor, public lobby or the like must be provided with a door		
F5.6: Sound insulation rating of services	(a) If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one <i>sole-occupancy unit</i>, the duct or pipe must be separated from the rooms of any sole occupancy unit by construction with an $R_w + C_{tr}$ (airborne) not less than—	Details concerning acoustic treatment have not been provided at this stage. A suitably qualified Acoustic Consultant is to be engaged to provide an acoustic specification and certification for CC stage.	CRA – Refer Annexure F

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	(i) 40 if the adjacent room is a habitable room (other than a kitchen); or (ii) 25 if the adjacent room is a kitchen or non-habitable room. (b) If a storm water pipe passes through a <i>sole-occupancy unit</i> it must be separated in accordance with (a)(i) and (ii).		
F5.7: Sound isolation of pumps	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating pump.	Details concerning acoustic treatment have not been provided at this stage. A suitably qualified Acoustic Consultant is to be engaged to provide an acoustic specification and certification for CC stage.	CRA – Refer Annexure F
Part F6 – Condensation Management			
F6.0: Deemed-to-satisfy provisions	Informational	Noted	Noted
F6.1: Application of Part	Informational	Noted	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.	Sufficient details have not been provided at this stage. A pliable sarking membrane is required to be installed on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building. As the proposed development is located within climate zone 6, the barrier shall be vapour permeable. Suitable architectural drawings and BCA specification are to be provided for further assessment. It is recommended that a Façade Engineer is engaged to review the external wall build up.	FI- Refer to Part 3.4

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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	No mechanical details have been provided at this stage. Mechanical engineer to provide drawings and design certification for further assessment.	CRA – Refer Annexure F
F6.4: Ventilation of roof spaces	(a) Where an exhaust system covered by F6.3 discharges directly or via a shaft or duct into a roof space, the roof space must be ventilated to outdoor air through evenly distributed openings. (b) Openings required by (a) must have a total unobstructed area of 1/300 of the respective ceiling area if the roof pitch is greater than 22°, or 1/150 of the respective ceiling area if the roof pitch is less than or equal to 22°. (c) 30% of the total unobstructed area required by (b) must be located more than 900 mm below the ridge or highest point of the roof space, measured vertically, with the remaining required area provided by eave vents.	No mechanical details have been provided at this stage. Mechanical engineer to provide drawings and design certification for further assessment	CRA – Refer Annexure F

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

G1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
G1.1: Swimming pools	Swimming pools and spa pools are to be provided with safety fencing compliant with AS1926. Parts 1 and 2; and, as required by the Swimming Pools Act 1992 and the Swimming Pools Regulation 2018. A water recirculation system in a swimming pool or spa pool must comply with AS 1926.3:2010.	A spa is proposed to be located on the external balcony of level 14. The spa shall be provided with a lockable lid in accordance with Swimming Pools Regulation 2018	CRA – Refer Annexure F
G1.2: Refrigerated chambers, strong-rooms and vaults	(a) N/A	N/A	N/A
G1.3: Outdoor play spaces	N/A	N/A	N/A
NSW G1.101: Provision for cleaning windows	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: > the windows can be cleaned wholly from within the building; or > via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.	No details provided at this stage. The method of cleaning of windows is to form part of the design at Construction Certificate stage, or otherwise be included in the BCA specification.	CRA – Refer Annexure F
Part G2 – Boilers, Pressure Vessels, Heating Appliances, Fireplaces, Chimneys and Flues			
G2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted

Part G3 – Atrium Construction			
G3.1: Atriums Affected by the Part	This Part does not apply to an atrium which— (a) connects only 2 storeys; or (b) connects only 3 storeys if— (i) each storey is provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 throughout; and (ii) one of those storeys is situated at a level at which there is direct egress to a road or open space.	The building has been determined as containing an atrium and therefore is technically required to demonstrate compliance with the provisions of BCA Part G3 and Specification G3. The atrium connects ground level to level seven. When determining an atrium, it is important to consider the area of the space enclosed at the top with a roof structure. A space is enclosed if the area of the enclosing floor or roof is greater than 50% of the area of the space, measured in plan, of any of the storeys connected by the space. The enclosed space would include the open walkways and enclosed balconies and joining the sole-occupancy units, when calculated this area exceeds 50% of the area of the atrium. For example, level 07, the atrium area is 168m² (total area of atrium -level 09 roof overhang), the total area of the enclosed space is 574m². Furthermore, it is proposed to provide various sole-occupancy with window openings, where these openings are not separated from the atrium by an appropriate barrier the sole-occupancy units are also included in the calculation of the atrium. It is our view that the provisions of G3 do not permit openings in the walls bounding the atrium. The client has advised that a Fire Engineer will be engaged to address variations to the Deemed to Satisfy provisions of the BCA.	PS-Refer to Part 3.3
G3.2: Dimensions of atrium well	An atrium well must have a width throughout the well that is able to contain a cylinder having a horizontal diameter of not less than 6 m.	The building has been determined as containing an atrium and is technically required to demonstrate	PS-Refer to Part 3.3

		compliance with the provisions of BCA Part G3 and Specification G3. The client has advised that a Fire Engineer will be engaged to address variations to the Deemed to Satisfy provisions of the BCA.	
G3.3: Separation of Atrium by Bounding Walls	An atrium must be separated from the remainder of the building at each storey by bounding walls set back not more than 3.5 m from the perimeter of the atrium well except in the case of the walls at no more than 3 consecutive storeys if— (a) one of those storeys is at a level at which direct egress to a road or open space is provided; and (b) the sum of the floor areas of those storeys that are contained within the atrium is not more than the maximum area that is permitted in Table C2.2.	The building has been determined as containing an atrium and is technically required to demonstrate compliance with the provisions of BCA Part G3 and Specification G3. The client has advised that a Fire Engineer will be engaged to address variations to the Deemed to Satisfy provisions of the BCA.	PS-Refer to Part 3.3
G3.4: Construction of Bounding Walls	Bounding walls must— (a) have an FRL of not less than 60/60/60, and— (i) extend from the floor of storey to the underside of the floor next above or to the underside of the roof; and (ii) have any door openings protected with self-closing or automatic –/60/30 fire doors; or (b) be constructed of fixed toughened safety glass, or wired safety glass in non-combustible frames, with— (i) any door openings fitted with a self-closing smoke door complying with Specification C3.4; and (ii) the walls and doors protected with wall-wetting systems in accordance with Specification G3.8; and	The building has been determined as containing an atrium and is technically required to demonstrate compliance with the provisions of BCA Part G3 and Specification G3. The client has advised that a Fire Engineer will be engaged to address variations to the Deemed to Satisfy provisions of the BCA.	PS-Refer to Part 3.3

	(iii) a fire barrier with an FRL of not less than –/60/30 installed in any ceiling spaces above the wall.		
G3.5: Construction of Balconies	If a bounding wall separating an atrium from the remainder of the building is set back from the perimeter of the atrium well, a barrier that is imperforate and non-combustible, and not less than 1 m high must be provided.	The building has been determined as containing an atrium and is technically required to demonstrate compliance with the provisions of BCA Part G3 and Specification G3. The client has advised that a Fire Engineer will be engaged to address variations to the Deemed to Satisfy provisions of the BCA.	PS-Refer to Part 3.3
G3.6: Separation at Roof	In an atrium— (a) the roof must have the FRL prescribed in Table 3 of Specification C1.1; or (b) the roof structure and membrane must be protected by a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5.	The building has been determined as containing an atrium and is technically required to demonstrate compliance with the provisions of BCA Part G3 and Specification G3. The client has advised that a Fire Engineer will be engaged to address variations to the Deemed to Satisfy provisions of the BCA.	PS-Refer to Part 3.3
G3.7: Means of Egress	All areas within an atrium must have access to at least 2 exits.	All areas within the atrium have been provided with at least two exits.	Complies.
G3.8: Fire and Smoke Control System	Sprinkler systems, smoke control, fire detection and alarm systems, and emergency warning and intercom systems must be installed in compliance with Specification G3.8.	The building has been determined as containing an atrium and is technically required to demonstrate compliance with the provisions of BCA Part G3 and Specification G3. The client has advised that a Fire Engineer will be engaged to address variations to the Deemed to Satisfy provisions of the BCA.	PS-Refer to Part 3.3
Part G4 – Construction in Alpine Areas			
G4.0: Deemed-to-Satisfy Provisions	N/A	N/A	N/A
Part G5 – Construction in Bushfire Prone Areas			

G5.0: Deemed-to-Satisfy Provisions	N/A	N/A	N/A
Part G6 – Occupiable Outdoor Areas			
G6.1: Application of part	The Deemed-to-Satisfy Provisions of this Part apply to buildings containing an occupiable outdoor area in addition to the other Deemed-to-Satisfy Provisions of the BCA. (c) The Deemed-to-Satisfy Provisions of this Part take precedence where there is a difference to the Deemed-to-Satisfy Provisions of Sections C, D, E, F and G. (d) Except for G6.2, the Deemed-to-Satisfy Provisions of this Part do not apply to – (i) an occupiable outdoor area of a <i>sole-occupancy unit</i> in a Class 2 or 3 building, Class 9c building or Class 4 part of a building; or (ii) an occupiable outdoor area with an area less than 10m².	The common area on level 08 exceeds 10m² and is required to comply with the provisions of part G6. Each external balcony associated with a sole-occupancy unit is required to comply with Clause G6.2	Noted
G6.2: Fire hazard properties	(e) Subject to (b), a lining material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element. (f) The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C1.10: (i) <i>Average specific extinction area.</i> (ii) <i>Smoke-Developed Index.</i> (iii) <i>Smoke development rate.</i> (iv) <i>Smoke growth rate index (SMOGR_{RC}).</i>	Specific details with regards to the linings of internal floors and walls have not been provided at this stage. The following is to be achieved; <u>Floor Linings</u> A critical radiant flux of 1.2 kW/m² <u>Wall & ceiling Linings</u> Group 1,2 or 3 A BCA specification and schedule of proposed materials and finishes are to be provided for further assessment.	CRA – Refer Annexure F
G6.3: Fire Separation	N/A	N/A	N/A

G6.4: Provision for escape	For the purposes of the Deemed-to-Satisfy Provisions of Part D1, a reference to a storey or room includes an occupiable outdoor area.	The occupiable outdoor area has been provided with at least two exits. Those exits are located within 40m demonstration compliance with the provisions of part D1.	CRA – Refer Annexure F
G6.5: Construction of exits	For the purposes of the Deemed-to-Satisfy Provisions of Part D2, a reference to a storey or room includes an occupiable outdoor area.	It is assumed the building can readily comply. Please refer to Part D2 of this report for all applicable clauses.	CRA – Refer Annexure F
G6.6: Fire fighting equipment	Except for Clause 7(b)(i) of Specification E1.5, for the purposes of the Deemed-to-Satisfy Provisions of Part E1, a reference to a storey includes an occupiable outdoor area.	Sufficient details have not been provided at this stage to demonstrate compliance. It is assumed the building can readily comply. Fire services drawings demonstration compliance with E1.3 and AS2419-2005 are required to be submitted to demonstrate compliance with Clause G6.6	CRA – Refer Annexure F
G6.7: Lift installations	For the purposes of the Deemed-to-Satisfy Provisions of Part E3, a reference to a storey includes an occupiable outdoor area.	Four lifts have been provided to both the North & South towers. An accessible path has been provided from the lift to the outdoor accessible areas	CRA – Refer Annexure F
G6.8: Visibility in an emergency, exit signs and warning systems	For the purposes of the Deemed-to-Satisfy Provisions of Part E4, a reference to a storey includes an occupiable outdoor area.	Sufficient details have not been provided at this stage. It is assumed the building can readily comply. Electrical services drawings demonstration compliance with Part E4 are to be submitted for further assessment.	CRA – Refer Annexure F
G6.9: Light and ventilation	For the purposes of the Deemed-to-Satisfy Provisions of F4.4, F4.8 and F4.9, a reference to a room includes an occupiable outdoor area.	N/A	N/A
G6.10: Fire orders	N/A	N/A	N/A

Section H: Special Use Buildings**Part H1 – Class 9b Buildings**

NSW H1.1: Application of Part	N/A	N/A	N/A
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Section I: Maintenance**Part I1 – Equipment and Safety Installations**

This Part has been deleted in BCA2019.

Section J: Energy Efficiency**Part J0 – Energy Efficiency**

J0.1: Application of Section J	Informational	The client has advised that a suitable qualified Energy Consultant will be engaged at Construction Certificate stage to address the requirements of Section J	Noted
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ANNEXURE E DEFINITIONS

Annexure E - Definitions

Average specific extinction area

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

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m²) as determined by AS ISO 9239.1:2000

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.

Flammability index

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

Group number

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

Horizontal exit

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

Loadbearing

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

Non-combustible

Non-combustible means—

- (a) applied to a material — not deemed combustible as determined by AS 1530.1:1994 — Combustibility Tests for Materials; and
- (b) applied to construction or part of a building — constructed wholly of materials that are not deemed combustible

Occupiable outdoor area

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

- (a) that is open to the sky; and
- (b) to which access is provided, other than access only for maintenance; and
- (c) that is not open space or directly connected with open space.

Open space

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

Performance Requirement

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

Performance Solution

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

Sarking-type material

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

Smoke developed index

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

Smoke development rate

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

Smoke growth rate index

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

Sole-occupancy unit

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

- (a) a dwelling; or
- (b) a room or suite of rooms in a Class 3 building which includes sleeping facilities; or
- (c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or
- (d) a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

ANNEXURE F BCA COMPLIANCE SPECIFICATION

Annexure F – BCA Compliance Specification

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

Architectural Design Certification

1. The FRL's of building elements for the proposed works have been designed in accordance with Table 3 of Specification C1.1 of BCA2019 for a building of Type A Construction
2. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
3. Building elements must be non-combustible in accordance with C1.9 of BCA2019.
4. Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C1.10 and Specification C1.10 of BCA2019.
5. Any ancillary elements fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible will comply with Clause C1.14 of BCA2019.
6. The parts of different classifications located alongside one another in the same storey will be separated in accordance with Clause C2.8 and Specification C1.1 of BCA2019.
7. Floors separating storeys of different classifications will comply with BCA Clause C2.9 of BCA2019.
8. The public corridors will be divided into intervals of not more than 40m in length with smoke proof walls in accordance with Clause C2.14, and Clause 2 of Specification C2.5 of BCA2019.
9. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C3.2 and C3.3 of BCA2019 or protected in accordance with Clause C3.4 of BCA2019, except where varied via Fire Engineering Performance Solution Report.
10. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C3.5 of BCA2019.
11. Doorways in horizontal exits will be protected in accordance with Clause C3.7 of BCA2019.
12. Doors in a fire-isolated exit will be self-closing or automatic closing fire doors with an FRL of not less than -/60/30 in accordance with Clause C3.8 of BCA2019.
13. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C3.9 of BCA2019.
14. Services penetrating elements required to possess an FRL including the floor slabs, walls, shafts, etc. will be protected in accordance with Clause C3.12, C3.13 and C3.15 and Specification C3.15 of BCA2019.
15. Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation will be protected in accordance with BCA Clause C3.16.
16. The lift doors will be -/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C3.10 of BCA2019.
17. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C3.11 of BCA2019.
18. Columns protected by light weight construction will achieve an FRL not less than the FRL for the element it is penetrating, in accordance with Clause C3.17 of BCA2019.

19. A lintel will have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and it spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non-loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification C1.1 Clause 2.3 BCA2019.
20. All attachments to the external façade of the building will be fixed in a way that does not affect the fire resistance of that element in accordance with Clause 2.4 of Specification C1.1 of BCA2019.
21. The top and bottom of the riser shafts will achieve an FRL not less than the FRL required for the walls of the shaft in accordance with Clause 2.7 of Specification C1.1 of BCA2019.
22. Smoke-proof walls and doorways required in the health care or aged care building will be in accordance with Specification C2.5 of BCA2019.
23. Fire doors will comply with AS 1905.1:2015 and Specification C3.4 of BCA2019.
24. Smoke doors will be constructed so smoke will not pass from one side of the doorway to the other in accordance with Specification C3.4 of BCA2019.
25. The number of exits provided to the building will be in accordance with Clause D1.2 of BCA2019.
26. The required exits will be fire-isolated in accordance with Clause D1.3 of BCA2019.
27. Travel distances to exits will be in accordance with Clause D1.4 of BCA2019, except where varied via Fire Engineering Performance Solution Report.
28. The alternative exits will be distributed uniformly around the storey and will not be less than 9m apart, and not more than 45m apart in the residential portion in accordance with Clause D1.5 of BCA2019, except where varied via Fire Engineering Performance Solution Report.
29. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
30. The fire-isolated exits will be in accordance with Clause D1.7 of BCA2019.
31. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
32. Horizontal exits will be in accordance with Clause D1.11 of BCA2019.
33. The non-required stairways, ramps and escalators will be in accordance with Clause D1.12 of BCA2019.
34. The ladder from the plant, lift machine rooms, and electricity network substation in lieu of a stairway will be in accordance with Clause D1.16 of BCA2019.
35. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
36. 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.
37. 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.
38. The fire-isolated passageway will be in accordance with Clause D2.11 of BCA2019.
39. The roof of the building where the exit discharges will have an FRL of 120/120/120 and will not have roof lights or openings within 3m of the path of travel in accordance with Clause D2.12 of BCA2019.

40. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
41. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.
42. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
43. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the machinery room, boiler house, lift-machine room, plant-room, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS 1657:2013 or Part D2 of BCA2019.
44. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
45. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
46. Re-entry doors from the fire-isolated exits will be in accordance with Clause D2.22 of BCA2019.
47. Signage will be provided on fire and smoke doors in accordance with Clause D2.23 of BCA2019.
48. The openable portion of a bedroom of a Class 2 building will be protected with a restricting device or secure screen that does not allow a 125mm sphere to pass through the opening or screen and resist an outward horizontal action of 250N in accordance with Clause D2.24 of BCA2019. In addition to window protection, and for other openable windows 4 meters or more above the ground below, a barrier with a height not less than 865mm above the floor will be installed to the openable window.
49. The fire control centre will be in accordance with Specification E1.8 or BCA2019.
50. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.
51. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2:2012.
52. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
53. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
54. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS 3740:2010.
55. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
56. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F1.11 of BCA2019.
57. Sub-floor ventilation will be provided in accordance with Clause F1.12 of BCA2019.
58. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS 1288:2006 / AS 2047:2014.
59. Sanitary facilities will be provided in the building in accordance with Clause F2.1, Table F2.1, Clause F2.3 and Table F2.3 of BCA2019.
60. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.
61. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.

62. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.
63. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019, except where varied via Performance Solution Report
64. Water closets and urinals will be located in accordance with Clause F4.8 of BCA2019.
65. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
66. 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.
67. 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.
68. 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.
69. The atrium will be in accordance with Part G3, and Specification G3.8 of BCA2019, except where varied via Performance Solution Report.
70. 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.
71. 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.

Electrical Services Design Certification:

72. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019.
73. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
74. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
75. An emergency warning and intercom system (EWIS) will be provided to the building in accordance with Clause E4.9 of BCA2019.
76. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.

Hydraulic Services Design Certification:

77. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
78. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS 2419.1:2005 as required.
79. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2019 and AS 2441:2005.
80. A sprinkler system will be installed in accordance with Clause E1.5 of BCA2019, Specification E1.5 and appropriate part(s) of AS 2118.
81. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.

Mechanical Services Design Certification:

82. An air-handling system which does not form part of a smoke hazard management system will be installed in accordance with Clause E2.2 of BCA2019, and AS 1668.1:2015.
83. Stair pressurisation will be installed in the building in accordance with Table E2.2a of BCA2019 and AS 1668.1:2015.
84. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS 1668.2:2012.
85. Every storey of the car park will be ventilated in accordance with Clause F4.11 of BCA2019 and where not naturally ventilated it will be mechanically ventilated in accordance with AS 1668.2:2012 as applicable.
86. The commercial kitchen will be provided with a kitchen exhaust hood in accordance with Clause F4.12 of BCA2019, and AS 1668.1:2015 and AS 1668.2:2012.
87. Exhaust systems installed in a kitchen, bathroom, sanitary compartment or laundry of a Class 2 or 4 *sole-occupancy unit* will have a minimum flow rate and discharge location in accordance with Clause F6.3 of BCA2019.
88. Where exhaust discharges directly or via shaft into a roof space of a Class 2 or 4 *sole-occupancy unit*, ventilation of the roof space will comply with Clause F6.4 of BCA2019.
89. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

90. The material and forms of construction for the proposed works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2019 as follows:
 - a. Dead and Live Loads – AS/NZS 1170.1:2002
 - b. Wind Loads – AS/NZS 1170.2:2011
91. Earthquake actions – AS 1170.4:2007
92. Masonry – AS 3700:2018
93. Concrete Construction – AS 3600:2018
94. Steel Construction AS 4100:1998
95. Aluminium Construction – AS/NZS 1664.1 or 2:1997
96. Timber Construction – AS 1720.1:2010
97. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
98. The FRL's of the structural elements for the proposed works have been designed in accordance with Specification C1.1 of BCA2019, including Table 3 for a building of Type A Construction
99. The lift shaft will have an FRL in accordance with Clause C2.10 and Specification C1.1 of BCA2019.
100. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
101. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2019 to reinstate the FRL of the element concerned.
102. 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:

103. The lifts throughout the development will be provided with stretcher facilities in accordance with Clause E3.2 of BCA2019 and will be capable of accommodating a stretcher with a patient lying horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above the floor level.
104. 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.
105. An emergency lift will be provided in the building in accordance with Clause E3.4 of BCA2019.
106. A fire service recall control switch is to be installed on a landing at a location nominated by the appropriate authority in accordance with Clause E3.9.
107. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3.10.
108. 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.
109. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3.6 of BCA2019.
110. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification E3.1 of BCA2019.

Acoustic Services Design Certification:

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

NSW Specification Design Certificate:

112. Materials, floor and wall linings/coverings, surface finished and air-handling ductwork used in the works will comply with the fire hazard properties in accordance with Clause C1.10, NSW Clause C1.10, Specification C1.10 and NSW Specification C1.10 of BCA2019.
113. Doorways and other openings in internal walls required to have an FRL will be protected in accordance with Clause C3.11, and NSW Clause C3.11(d) of BCA2019.
114. The number of exits provided to the building will be in accordance with Clause D1.2 and NSW Clause D1.2(d)(vii) of BCA2019.
115. The discharge points of exits will be in accordance with Clause D1.10, and NSW Clause D1.10(f) of BCA2019.
116. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6, and NSW Clause D1.6(f)(vi)&(j) of BCA2019.
117. Stair geometry to the new stairways will be in accordance with Clause D2.13, and NSW Clause D2.13(a)(ix)(x)(xi) of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a nosing strip with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
118. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15, and NSW Clause D2.15(d)&(e) of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge leads to a flight below.

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

ANNEXURE G S4.55 MODIFICATIONS

S4.55 LIST OF CHANGES

2021.11.05

DRAWING NO.	DRAWING TITLE	REV.	ITEM
DA-00 GENERAL INFORMATION			
DA-00-0000	DRAWING LIST	D	Additional shadow diagram page DA-93-0401
DA-00-0100	DEVELOPMENT DATA SHEET	D	SEPP 65 Solar Access Yield Unit Mix by Type Adaptable Units Mix Silver Livable Units Mix Carpark Schedule Bicycle Parking Schedule
DA-00-0500	ARCHITECTURAL SITE PLAN	B	Floor levels change Level 8 additional communal room Courtyard lift shaft design
DA-10 GENERAL ARRANGEMENT PLANS			
DA-10-4700	S2 BASEMENT 03	D	Structural elements change Car parking arrangement change Basement storage arrangement change Services sizes/location revised Core configuration revised
DA-10-4800	S2 BASEMENT 02	D	Structural elements change Car parking arrangement change Basement storage arrangement change Services sizes/location revised Core configuration revised
DA-10-4900	S2 BASEMENT 01	E	Structural elements change Car parking arrangement change Basement storage arrangement change Services sizes/location revised Core configuration revised Apartments layout change Removal of private terrace stairs
DA-10-5000	S2 LEVEL 00	D	Structural elements change Car parking arrangement change Basement storage arrangement change Services sizes/location revised Core configuration revised Apartments layout change Façade glazing sizes/types/location revised
DA-10-5100	S2 LEVEL 01	E	Structural elements change Services sizes/location revised Core configuration revised Apartments layout change Façade glazing sizes/types/location revised Landscape change Courtyard lift design amendment Mail boxes moved to internal lobby Lobby design revised
DA-10-5200	S2 LEVEL 02	D	Structural elements change Services sizes/location revised Core configuration revised Apartments layout change Façade glazing sizes/types/location revised Courtyard lift design amendment
DA-10-5300	S2 LEVEL 03-05	D	Structural elements change Services sizes/location revised Core configuration revised Apartments layout change Façade glazing sizes/types/location revised Courtyard lift design amendment
DA-10-5400	S2 LEVEL 06	D	Structural elements change Services sizes/location revised Core configuration revised Apartments layout change Façade glazing sizes/types/location revised Courtyard lift design amendment

S4.55 LIST OF CHANGES

2021.11.05

DRAWING NO.	DRAWING TITLE	REV.	ITEM
DA-10-5500	S2 LEVEL 07	D	Structural elements change
			Services sizes/location revised
			Core configuration revised
			Apartments layout change
			Façade glazing sizes/types/location revised
DA-10-5600	S2 LEVEL 08	E	Courtyard lift design amendment
			Structural elements change
			Services sizes/location revised
			Core configuration revised
			Apartments layout change
DA-10-5700	S2 LEVEL 09	D	Façade glazing sizes/types/location revised
			Courtyard lift design amendment
			Floor level changes
DA-10-5800	S2 LEVEL 10	E	Structural elements change
			Services sizes/location revised
			Apartments layout change
			Façade glazing sizes/types/location revised
			Floor level changes
DA-10-5900	S2 LEVEL 11	E	Structural elements change
			Services sizes/location revised
			Apartments layout change
			Façade glazing sizes/types/location revised
			Floor level changes
DA-10-6000	S2 LEVEL 12	E	Structural elements change
			Services sizes/location revised
			Apartments layout change
			Façade glazing sizes/types/location revised
			Floor level changes
DA-10-6100	S2 LEVEL 13	E	Structural elements change
			Services sizes/location revised
			Apartments amalgamation & layout change
			Façade glazing sizes/types/location revised
			Removal of skylight
DA-10-6200	S2 LEVEL 14	E	Floor level changes
			Services sizes/location revised
			Apartments layout change
			Façade glazing sizes/types/location revised
			Floor level changes
DA-10-6300	S2 LEVEL 15	E	Core configuration revised
			Services sizes/location revised
			Floor level changes
DA-10-6400	S2 LEVEL ROOF	B	Floor levels change
			Level 8 additional communal room
			Courtyard lift design amendment
			Services sizes/location revised
DA-20	GENERAL ELEVATIONS		
DA-20-0300	ELEVATIONS S2	D	Floor levels change
			Level 8 additional communal room
			Courtyard lift design amendment
			Services sizes/location revised
			Façade glazing sizes/types/location revised
DA-20-0400	ELEVATIONS S2	D	Floor levels change
			Level 8 additional communal room
			Courtyard lift design amendment
			Services sizes/location revised
			Façade glazing sizes/types/location revised

S4.55 LIST OF CHANGES

2021.11.05

DRAWING NO.	DRAWING TITLE	REV.	ITEM
DA-20-0500	ELEVATIONS S2	D	Floor levels change
			Level 8 additional communal room
			Courtyard lift design amendment
			Services sizes/location revised
			Façade glazing sizes/types/location revised
			Central courtyard balustrades change
DA-20-0600	ELEVATIONS S2-BENNELONG PARKWAY RD	D	Structural elements change
			Floor levels change
			Level 8 additional communal room
			Courtyard lift design amendment
DA-30	GENERAL SECTIONS		Façade glazing sizes/types/location revised
DA-30-0100	SECTIONS S2	D	Floor levels change
			Central courtyard balustrades change
			Courtyard lift design amendment
			Façade glazing sizes/types/location revised
DA-30-0200	SECTIONS S2	D	Floor levels change
DA-30-0300	SECTIONS S2	B	Central courtyard balustrades change
DA-40	EXTERNAL FAÇADE FINISHES		Floor levels change
DA-40-0100	FAÇADE FINISHES SCHEDULE S2	C	Central courtyard balustrades change
DA-40-0200	FAÇADE FINISHES SCHEDULE S2-COURTYARD	B	Central courtyard balustrades change
			Courtyard lift design amendment
DA-50	ADDITIONAL DETAILS		
DA-50-2000	ADAPTABLE UNITS-S2	B	Updated plans
DA-50-2001	ADAPTABLE UNITS-S2	B	Updated plans
DA-50-2100	SILVER LIVABLE UNITS-S2	B	Updated plans
DA-50-2200	VISITABLE UNITS-S2	B	Updated plans