BCA LOGIC

Building Regulation, BCA,
Fire, Access and Energy Consultants

To:	SMEC
Project:	Site C - Crows Nest Station
Report:	Updated BCA and Access Assessment Report
Reference No:	SMCSWSCN-SMC-SCN-EM-000019
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DOCUMENT CONTROL

Revision	Date	Description	
110249-Site C-BCA-r1	22 January 2020	Preliminary BCA / Access Assessment Report	
110249-Site C-BCA-r2	19 February 2020	Updated BCA / Access Assessment Report	
110249-Site C-BCA-r3	27 March 2020	Updated BCA / Access Assessment Report	
110249-Site C-BCA-r4	27 April 2020	Updated BCA / Access Assessment Report (With Revised Approval process)	
110249-Site C-BCA-r5	15 March 2021	Updated BCA / Access Assessment Report (Development Application Submission)	
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1 BASIS OF ASSESSMENT

1.1 Location and Description

The building development, the subject of this report, is located at Site C - Crows Nest Station. The subject site sits over a portion of the Crows Nest Station development and is located such that Clarke Street adjoins the north western elevation, Clarke Lane adjoins the south eastern elevation, Hume Street adjoins the north eastern elevation whilst an adjacent property adjoins the south western elevation. The proposed development is for a new commercial office building located above the Clarke street concourse entrance to the underground Metro Train Station.

It is noted that as part of the Crows Nest Station development the Fire Engineering Report has been developed to treat the over station developments – including Site C as a separate building for the purposes of services and general BCA Compliance.

1.2 Purpose

The purpose of this report is to assess the current design proposal for the base building against the Deemed-to-Satisfy Provisions of BCA 2019, Amendment 1, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of BCA 2019 Amendment 1. Such assessment against relevant performance criteria will need to be addressed by means of a separate Performance Based Fire Safety Engineered Assessment Report to be prepared under separate cover.

1.3 Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume 1 – Building Code of Australia, 2019 Edition (BCA) Amendment 1 incorporating the State variations where applicable. As advised by the client, the proposed development is, classified as a SSD and is to be submitted to NSW Department of Planning, Industry and Environment (DPIE) for assessment and determination.

As a result, the development is considered to be a Crown Development – thus the applicable version of the BCA is defined under Section 6.28 of the Environmental Planning and Assessment Act 1979 that states:

(2) Crown building work cannot be commenced unless the Crown building work is certified by or on behalf of the Crown to comply with the Building Code of Australia in force as at:

(a) ***the date of the invitation for tenders to carry out the Crown building work****, or*

(b) in the absence of tenders, the date on which the Crown building work commences, except as provided by this section.

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 Amendment 1 only);

(c) The provisions of Section J of BCA2019 – to be addressed by separate consultant;

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

(e) Work Health and Safety Act 2011;

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

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

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

(i) The internal fit out of any commercial levels to the building; and

(j) Any portions of the Crows Nest Metro Station development (unless specifically referred to – Refer separate BCA and Access Assessment Reports for the Crows Nest Station development).

1.5 Design Documentation

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

1.6 Definitions

Average specific extinction area

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

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.

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.

(b) 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

Fire-source feature means—

(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.

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.

Non-combustible

Non-combustible means—

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

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

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 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.

2 BUILDING DESCRIPTION

For the purposes of the Building Code of Australia (BCA) the Site C development may be described as follows noting that Site C is treated as a separate building (other than the ground level concourse area that forms part of the Crows Nest Metro Station development) to that of the Crows Nest Metro Station Development.

2.1 Rise in Storeys (Clause C1.2)

The building has a rise in storeys of ten (10). It is noted that under C1.2 of BCA2019 a rooftop plantroom storey is excluded from being counted in the rise in storeys. The level 10 portion is not fully open to the sky thus is deemed to be a storey. As a result, it is counted in the rise in storeys noting you can only eliminate 1 roof top plantroom level from being counted in the rise in storeys.

2.2 Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
9b	Part Ground Level	Railway Station Entrance
5	Part Ground Level	Office Entry Foyer
5	Levels 1 to 9	Commercial Office Space and Ancillary Plant area

2.3 Effective Height (Clause A1.0)

The building has an *effective height* of more than 25 metres being metres being Level 9 (RL125.25) to Level 00 (RL 88.745) = 36.505m.

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

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 5 and 9b	Maximum Floor Area	8,000m^2
	Maximum Volume	48,000m^3

2.6 Fire Compartments

The following *fire compartments* have been assumed:

1. The Ground Floor entry foyer forms a separate fire compartment to that of the adjacent Railway Station portion.
2. Each level 1 to 10 forms a separate fire compartment

2.7 Exits

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

(a) Ground Floor Entry / exit doors to office foyer,

(b) Doors leading into the two fire isolated stairs at each office level.

2.8 Climate Zone (Clause A1.0)

The building is located within Climate Zone 5

2.9 Location of Fire-source features

The fire source features for the subject development are:

North East: The far boundary of Clarke Street

North West: Side boundary

South East: The far boundary of Hume Street

South West: The far boundary of Clarke Lane

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

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

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

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

A building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the *fire-source feature*, or vertical projection of the feature, is not obstructed by another part of the building that–

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

(ii) is neither transparent nor translucent.

3 ESSENTIAL FIRE SAFETY MEASURES

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

Table 2. Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Access Panels & doors/hoppers (fire rated)	**BCA2019 C3.13** (Openings in Shafts) **BCA2019 Spec C3.4** AS1905.1:2015 (Fire Resistant Doorsets)
2.	Construction Joints	**BCA2019 C1.1, Spec C1.1** **BCA2019 C3.16** AS1530.4:2014 & AS4072.1-2005
3.	Fire doors	**BCA2019 C2.12** (Separation of Equipment) **BCA2019 C2.13** (Electricity Supply Systems) **BCA2019 C3.8** (Openings in Fire Isolated Exits) **BCA2019 C3.10** (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 **BCA2019 C3.13** (Opening in Shafts) 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

General		
5.	Fire control centres • >25m • Fire Control Centre ○ Within 300mm of street Level	**BCA2019 E1.8, Spec E1.8** (Fire Control Centres)
6.	Portable fire extinguishers	**BCA2019 E1.6** AS2444–2001
General - Egress		
7.	Automatic fail safe devices • Auto open Sliding Exit door • Break Glass release	**BCA2019 D2.21** (Operation of Latches) **BCA2019 D2.22** (Re-entry from fire-isolated stairs) AS 1670.1:2018 (Fire)
8.	Operation of Door latches (Entry Lobby Door) • Failsafe • Manuel Push Button Control	**D2.21** (Operation of Latch) AS1670.1:2018
9.	Path of travel for stairways, passageway and ramps	EP&A Reg. 2000 Clauses 184-186
10.	Required Automatic Doors	**D2.19** (Doorways and Doors)
11.	Swing of Exit Doors	**D2.20** (Swinging Doors)
12.	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		
13.	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'
14.	Emergency lifts • Lift No 01 • Lift No 02	**BCA2019 E3.4** AS1735.1-2003 (Appendix A) or AS1735.2-2001

15.	Stretcher Lifts including • Fire Service Controls • Recall Operation • Drive control switch	**BCA2019 E3.2** **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** AS1735.11-1986 (Fire rated landing doors)
Electrical Services		
16.	Automatic fire detection & alarm: • Clause 4 - AS1670.1-2018 system throughout the building/part connected to a BOWS @ 100dB(A)	**BCA2019 E2.2**, NSW Table E2.2a **Spec E2.2a** **BCA2019 C3.8** (Openings in Fire-Isolated Exits) **BCA2019 D2.21** (Operation of Latch) **Spec E2.2a** - Clause 4 (Smoke detection system) **Spec E2.2a** – Clause 6 (Smoke detection for smoke control systems) **Spec E2.2a** - Clause 7 (BOWS) **Spec E2.2a** - Clause 8 (System Monitoring) AS1670.1:2018 (Fire) – Section 4 and 5 (Detectors) AS1670.1:2018 (Fire) – Section 7 (Smoke Control) AS1670.3 – 2018 (Fire Alarm Monitoring) AS1670.4:2018 (EWIS)
17.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1 –2018
18.	Exit signs	**BCA2019 E4.5** (Exit Signs) **BCA2019 E4.6** (Direction Signs) **BCA2019 E4.8** (Design and Operation - Exits) AS/NZS 2293.1 –2018
19.	Smoke detectors & heat detectors 1. Zone Smoke Control System 2. Air Pressurisation System.	**BCA2019 E2.2, Spec E2.2a** AS/NZS1668.1:2015

20.	Emergency warning and intercom systems for Emergency Purposes • >25m	**BCA2019 E4.9** AS1670.4: 2018 (EWIS)
21.	System Monitoring	**BCA2019 E2.2 , Table E2.2a,Spec E2.2a** AS1670.3-2018 (Monitoring Required for any: • Any Sprinkler System • For smoke exhaust systems and smoke-and-heat vents
Hydraulic Services		
22.	Automatic fire suppression systems • General Sprinklers • Combined Sprinklers and Hydrant	**BCA2019 Clause / Spec E1.5** AS2118.1–2017 (Sprinklers) AS2118.6–2012 (Combined Sprinklers/Hydrant)
23.	Fire hydrant systems • NSW Storz Couplings • Ring Main required (LIB, >25m) • On-site water storage (>25m)	**BCA2019 E1.3** **BCA2019 C2.12 (Separation of Equipment)** AS2419.1–2005 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'
Mechanical Services		
24.	Fire dampers	**BCA2019 E2.2, Spec E2.2a, Spec E2.2b** **BCA2019 C3.15** AS 1668.1:2015 (Amdt 1) AS1682.1:2015 & AS1682.2:2015
25.	Mechanical air handling systems 1. Zone Pressurisation System. 2. 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)
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 *fire compartment* to another *fire compartment* or operates in a manner that may unduly contribute to the spread of smoke from one *fire compartment* to another *fire compartment* must— (i) (be designed and installed to operate as a smoke control system in accordance with AS 1668.1; or (ii)		

(A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the *fire compartments* served; and

(B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1; and

for the purposes of this provision, each *sole-occupancy unit* in a Class 2 or 3 building is treated as a separate *fire compartment*.

Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.

A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS 1668.1 systems that are provided for zone smoke control and automatic air pressurisation for fire-isolated exits.

26.	**Alternative Solution** Fire Engineering Report (FER) prepared by NDY under separate cover - Allowing for the below DtS departures:

Performance Solutions

	Description of Performance Solution	**DTS Provision**	**Performance Requirements**	**Method of meeting performance solutions**
1.	Separation of buildings; technical consideration of non-vertical firewall separation between station portal and OSDC (OSDC essential systems to be fully independent of station systems (with interconnection as appropriate, e.g. fire alarm notifications)	C2.7	CP2	**TBA**
2.	Due to the connectivity between buildings, and the interconnection between buildings, the smoke hazard management of all four buildings, including the alarm and cascade strategy, are to be reviewed collaboratively and assessed as part of the future performance solution. The Railway Station Portion will operate independently to the remaining OSD portion with totally separate fire safety systems / measures.	E1.8, E2.2	EP2.2 and EP1.6	**TBA**
3.	The western wall of the emergency lift shaft is proposed to be a glazed wall which will not possess a FRL of 120/120/120. The provisions of Clause C2.10(c) of BCA2019 require emergency lifts to be contained within a 120/120/120 shaft. As such the lack of a FRL to the western side of the lift shaft is to be assessed against the performance provisions of CP2 of BCA2019	C2.10(c)	CP2	**TBA**

4.	Fire hydrant landing valve in Stair 2 serving Level 9 is located on the mid-landing, in lieu of the landing of the level served.	E1.3	EP1.3	
5.	Access to a single exit in lieu of 2 occurs on Ground (lobby) and L1 (Plant);	D1.2	DP4 and EP2.2	**TBA**
6.	Stair pressurisation systems provided to both exit stairs, however door velocity performance will be reduced on L1 (single stair connection only) and Roof (Terrace/Plant) as relief air paths not available or direct to outside	Table E2.2a and AS1668.1-2015	EP2.2	**TBA**
7.	The zone pressurisation system is not provided to Ground, Level 1 (Plant and EOT) and Level 9 Roof Plant levels, in lieu of throughout all areas of the building.	Table E2.2a	EP2.2	**TBA**

4 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 3. Type A Construction

Item	Class 5 and 9b
Loadbearing External Walls (including columns and other building elements incorporated therein) • Less than 1.5m to a *fire- source feature* • 1.5 – less than 3m from a *fire-source feature* • 3m or more from a *fire source feature*	 120/120/120 120/90/90 120/60/30
Non-Loadbearing External Walls • Less than 1.5m to a *fire-source feature* • 1.5 – less than 3m from a *fire-source feature* • 3m or more from a *fire-source feature*	 -/120/120 -/90/90 -/-/-
External Columns • Loadbearing • Non-loadbearing	 120/-/- -/-/-
Common Walls & Fire Walls	120/120/120
Stair and Lift Shafts required to be fire-resisting • Loadbearing • Non-loadbearing	 120/120/120 -/120/120
Internal walls bounding public corridors, public lobbies and the like: • Loadbearing • Non-loadbearing	 120/-/- -/-/-
Ventilating, pipe, garbage and like shafts: • Loadbearing • Non-loadbearing	 120/90/90 -/90/90

Item	Class 5 and 9b
Other loadbearing internal walls, beams trusses and columns	120/-/-
Floors	120/120/120
Roofs[1]	120/60/30

N.B.[1] The roof need not comply with any FRL's due to the sprinkler protection of the entire building, however as currently documented – top floor to be a concrete structure.

5 MATTERS FOR FURTHER CONSIDERATION

5.1 General

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

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

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

5.2 Dimensions and Tolerances

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

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

5.3 Performance Based Design – Performance Solutions OSD Site C

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 have been addressed in a preliminary Fire Safety Engineering Report prepared for this development by Norman Disney & Young under separate cover. The below table may be amended as the design progresses through to Crown Certificate stage:

Table 4. Performance Solutions

Item	Description of Performance Solution	DTS Provision
1.	The construction of the roof and external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	No DtS Provisions – FP1.4 Performance Provisions Only
2.	Separation of buildings; technical consideration of non-vertical firewall separation between station portal and OSDC (OSDC essential systems to be fully independent of station systems (with interconnection as appropriate, e.g. fire alarm notifications)	C2.7 of BCA2019
3.	Due to the connectivity between buildings, and the interconnection between buildings, the smoke hazard management of all four buildings, including the alarm and cascade strategy, are to be reviewed collaboratively and assessed as part of the future performance solution. The Railway Station Portion will operate independently to the remaining OSD portion with totally separate fire safety systems / measures.	E1.8, E2.2
4.	The western wall of the emergency lift shaft is proposed to be a glazed wall which will not possess a FRL of 120/120/120. The provisions of Clause C2.10(c) of BCA2019 require emergency lifts to be contained within a 120/120/120 shaft. As such the lack of a FRL to the western side of the lift shaft is to be assessed against the performance provisions of CP2 of BCA2019	C2.10(c)

5.	Fire hydrant landing valve in Stair 2 serving Level 9 is located on the mid-landing, in lieu of the landing of the level served.	E1.3
6.	Access to a single exit in lieu of 2 occurs on Ground (lobby) and L1 (Plant);	D1.2
7.	Stair pressurisation systems provided to both exit stairs, however door velocity performance will be reduced on L1 (single stair connection only) and Roof (Terrace/Plant) as relief air paths not available or direct to outside	Table E2.2a and AS1668.1-2015
8.	The zone pressurisation system is not provided to Ground, Level 1 (Plant and EOT) and Level 9 Roof Plant levels, in lieu of throughout all areas of the building.	Table E2.2a

5.4 Performance Based Design – Performance Solutions Station Portion of Development

There are specific areas throughout the Station Portion of the development where strict Deemed-to-Satisfy BCA Compliance will not be achieved by the proposed design and site constraints. These matters have been addressed in a detailed Fire Safety Engineering Report prepared as part of the Station portion of the development under separate cover. The below is provided for information only:

Table 5. Performance Solutions

Performance Solutions			
#	**BCA DTS Clause**	**Description of Departure from BCA DTS Provisions**	**Performance Requirement**
Fire Resistance and Compartmentation			
1.	C1.1, C2.7, Spec C1.1 CP1	Allowance is made for the station and future OSD buildings to be designed as separate buildings (in lieu of united buildings). Fire separation shall be achieved by both vertical and horizontal fire rated construction, where DTS provisions includes vertical separation only.	CP1
2.	Spec C1.1	Fire resisting elements within retail units on L0 (excluding any structure supporting the OSDs) achieve an FRL of 120/120/120 in lieu of 180/180/180.	CP1, CP2
Egress – Performance Based Public Area Egress & Smoke Hazard Management			
3.	D1.2	Escalators are to be utilised as egress for the below ground occupants, using international best practice guidance (i.e. NFPA 130), which is not permitted under BCA DTS provisions.	DP4, EP2.2
4.	D1.4, D1.5	Extended travel distances occur in the public areas. Maximum travel distance to be up to − 27 m to a point of choice on Level B5, − 54 m to an exit on Level B1/B2; and − 91 m between exits on Level B1/B2.	DP4, EP2.2
5.	D1.6	The aggregate egress width to the platforms, concourses and retail areas below ground are assessed on a performance basis, utilising stairs and escalators.	DP6
6.	D1.12	The escalators to the north and south are to connect more than three storeys and are not separated from the remainder of the building by	DP4, EP2.2

		construction achieving compliance with BCA Spec D1.12.	
7.	E2.2, Part G3 (G3.3, G3.4, G3.5, G3.8, Spec. G3.8)	A performance-based smoke exhaust system forms part of a performance-based smoke hazard management strategy for the station. The interconnection of the floors via escalator voids has been classified by the PCA as an Atrium. A performance-based solution will be developed in lieu of BCA DTS Atrium provisions (G3). The Performance Solution supports performance-based smoke exhaust design, bounding and balcony construction, plus fire safety systems.	DP4, EP2.2
Egress – BOH Areas (Exclude Level B4)			
8.	D1.4, D1.5	Extended travel distances in back-of-house (BOH) areas: Maximum travel distance to be up to: <u>Level B3</u> − 32 m to a point of choice from north eastern corner − 87 m to an exit from room 506.E; and − 163 m between exits on north eastern side. <u>Level B1/B2</u> − 24 m to a point of choice from north eastern corner. <u>Level B0 Plant South</u> − 25 m to a point of choice at from north western corner. <u>Level 00 Hume South</u> − 22 m to a point of choice from north western corner. <u>Level 1 South</u> − 22 m to a point of choice from north eastern corner. <u>Level 1 North</u> − 28 m to a point of choice from north eastern corner.	DP4, EP2.2
9.	D1.9	Ladders from B4 to B3 will discharge internally in lieu of at ground level to outside	DP4, EP2.2
Fire Hose Reel			
10.	E1.4	Fire hose reels will not be provided in the following areas: • Public circulation spaces on platform level. • Within fire compartments less than 500 m2 in BOH areas. • Level B4 OTE.	EP1.1
Fire Sprinkler System / Fire Detection Omissions			

11.	E1.5	An automatic fire sprinkler system complying with BCA Spec. E1.5 is required to be installed throughout the station as the station contains an atrium. Sprinklers will be provided throughout with the exception of the following locations: □ Trackways □ Public circulation spaces, including the platform and the concourse □ F&B retail tenancy at Site C Entrance □ Rooms with equipment which is sensitive to water □ Air handling shafts and plenums with doors and access points	EP1.4
12.	E2.2a	Smoke detectors will be provided throughout with the exception of the following locations: □ Trackway □ Air handling shafts and plenums with doors and access points (non-occupied)	EP2.2
Fire Sealing System			
13.	C3.15	The penetration of hydrant pipes between two scissor stairs is to be fire stopped using a tested system in accordance with C3.15. A Performance Solution is provided to permit the DTS exemption C3.15(a)(ii) to be applied (omission of insulation rating) which technically doesn't apply to pipes within a required exit.	CP2, CP8
Stair Pressurisation System			
14.	E2.2	The air intake for the fire isolated stair pressurisation systems on ground level is not located apart as per AS1668.1-2015 Amendment 1.	EP2.2
Fire Fighting Equipment			
15.	E1.3	Fire hydrant coverage will not be provided to Level B4.	EP1.3
16.	Spec E1.8	The Fire Control Room is located greater than 300mm above adjacent natural ground level	EP1.6
17.	E1.3, E1.5	Use of an additional standby electric pump set in lieu of one diesel pump set. The electric pump set will have the same performance and reliability due to independent electrical supplies.	EP1.3, EP1.4
Emergency Radio Antennas			
18.	C3.9, D2.7	Emergency radio antennas are proposed to be installed within fire-isolated stairs.	CP2, CP4

5.5 Façade Construction – Non Combustible

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

(a) In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible:

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

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

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

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

(i) a building required to be of Type A construction; and

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

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

(B) a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys.

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

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

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

(i) Plasterboard.

(ii) Perforated gypsum lath with a normal paper finish.

(iii) Fibrous-plaster sheet.

(iv) Fibre-reinforced cement sheeting.

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

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

(vii) Bonded laminated materials where—

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

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

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

This clause also prohibits the use of in situ formwork containing combustible elements including PVC lined formwork products where the PVC lining remains in place for the life of the building. At this stage, no details of the external wall configuration have been provided for detailed review – further details to be provided at Crown Certificate stage to verify compliance.

6 STATEMENT OF COMPLIANCE

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

ANNEXURE A - DESIGN DOCUMENTATION

This report has been based on the following design documentation prepared by CNDC dated 16 February 2021.

Table 6. Architectural Plans

Sheet List 1					
Sheet	VPP_View_Drawing Series_i	Sheet Number	Sheet Name	Current Revision	Current Revision Date
10 General					
1	10 General	100515	COVER SHEET - SITE C OSD	A	16.02.21
3	10 General	100517	3D RENDER - SITE C OSD	A	16.02.21
4	10 General	100518	3D RENDER - SITE C OSD	A	16.02.21
5	10 General	100519	3D RENDER - SITE C OSD	A	16.02.21
6	10 General	100530	SAMPLE BOARD DRAWING	A	16.02.21
12 Overall Arrangement					
7	12 Overall Arrangement	120511	SITE PLAN - ROOF LEVEL - SITE C OSD	A	16.02.21
15 Area					
8	15 Area	120521	OVERALL AREA PLANS - SITE C OSD	A	16.02.21
20 Floor Plan					
9	20 Floor Plan	207517	GENERAL ARRANGEMENT PLAN 00 - SITE C OSD	A	16.02.21
10	20 Floor Plan	207518	GENERAL ARRANGEMENT PLAN L1 - SITE C OSD	A	16.02.21
11	20 Floor Plan	207519	GENERAL ARRANGEMENT PLAN L2 - SITE C OSD	A	16.02.21
12	20 Floor Plan	207520	GENERAL ARRANGEMENT PLAN L3 - SITE C OSD	A	16.02.21
13	20 Floor Plan	207521	GENERAL ARRANGEMENT PLAN L4 - SITE C OSD	A	16.02.21
14	20 Floor Plan	207522	GENERAL ARRANGEMENT PLAN L5 - SITE C OSD	A	16.02.21
15	20 Floor Plan	207523	GENERAL ARRANGEMENT PLAN L6 - SITE C OSD	A	16.02.21
16	20 Floor Plan	207524	GENERAL ARRANGEMENT PLAN L7 - SITE C OSD	A	16.02.21
17	20 Floor Plan	207525	GENERAL ARRANGEMENT PLAN L8 - SITE C OSD	A	16.02.21
18	20 Floor Plan	207526	GENERAL ARRANGEMENT PLAN L9 - SITE C OSD	A	16.02.21
19	20 Floor Plan	207527	GENERAL ARRANGEMENT PLAN L10 - SITE C OSD	A	16.02.21
20	20 Floor Plan	207528	GENERAL ARRANGEMENT PLAN ROOF - SITE C OSD	A	16.02.21
33 Elevations and Sections					
21	33 Elevations and Sections	320520	ELEVATIONS - SITE C OSD	A	16.02.21
22	33 Elevations and Sections	320521	ELEVATIONS - SITE C OSD	A	16.02.21
23	33 Elevations and Sections	320570	SECTIONS - SITE C OSD	A	16.02.21
24	33 Elevations and Sections	320572	SECTIONS - SITE C OSD	A	16.02.21
46 Building Details					
25	46 Building Details	460555	FACADE - DETAIL SECTION - ROOF TOP	A	16.02.21
Grand total: 24					

ANNEXURE B - 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	'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 C 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 7. Deemed to Satisfy Clause Assessment

Clause	Comment	Status
SECTION B: STRUCTURE		
PART B1 – STRUCTURAL PROVISIONS		
B1.0: Deemed-to-Satisfy Provisions	Informational	Noted
B1.1: Resistance to actions	The resistance of the building must be greater than the most critical action effect resulting from different combinations of actions, where the most critical action has been determined in accordance with this Part – Structural Engineer to certify at Crown Certificate stage.	CRA – Refer Annexure C
B1.2: Determination of individual actions	The magnitude of actions must be determined in accordance with this Clause – Structural Engineer to certify at Crown Certificate stage.	CRA – Refer Annexure C
B1.4: Determination of structural resistance of materials and forms of construction	The structural resistance of materials and forms of construction must be determined in accordance with this Clause – Structural Engineer, Architect and Manufacturers to certify at Crown Certificate stage.	CRA – Refer Annexure C
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 Crown Certificate Stage.	CRA – Refer Annexure C
B1.6 Construction of buildings in flood hazard areas	A Class 2 or 3 building, Class 9a health care building, Class 9c aged-care building or Class 4 part of a building, in a flood hazard area (refer to Council maps) must comply the ABCB Standard for Construction of Buildings in Flood Hazard Areas.	NA
SECTION C: FIRE RESISTANCE		
PART C1 – FIRE RESISTANCE AND STABILITY		
C1.0: Deemed-to-Satisfy Provisions	Informational	Noted
C1.1: Type of construction required	The building is required to be of Type A Construction. Refer to Specification C1.1 requirements at the end of this Section.	CRA – Refer Annexure C
C1.2: Calculation of rise in storeys	The Site C OSD building has a rise in storeys of ten (10). It is noted that under C1.2 of BCA2019 a rooftop plantroom storey is excluded from being counted in the rise in storeys. The level 10 portion is not fully open to the sky thus is deemed to be a storey. Only 1 level of the 2 level rooftop plantroom areas is discounted when determining the rise in storeys of the building.	Noted
C1.3: Buildings of multiple classification	Informational	Noted

SECTION C: FIRE RESISTANCE		
C1.4: Mixed Types of construction	The building is considered to be of a single type of Construction – Type A	CRA – Refer Annexure C
C1.8: Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
C1.9: Non-combustible building elements	(a) In a building required to be of Type A or B construction, the following building elements and their components must be *non-combustible*: (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (ii) The flooring and floor framing of lift pits. (iii)Non-loadbearing internal walls where they are required to be fire-resisting. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of *non-combustible* construction in— (i) a building required to be of Type A construction; and (ii) a building required to be of Type B construction, subject to C2.10, in— (A) a Class 2, 3 or 9 building; and (B) a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys. (c) A loadbearing internal wall and a loadbearing *fire wall*, including those that are part of a loadbearing shaft, must comply with Specification C1.1. (d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants, termite management systems, Glass including laminated glass, thermal breaks associated with glazing systems and damp-proof courses. (e) The following materials, may be used wherever a *non-combustible* material is required: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet. (iv) Fibre-reinforced cement sheeting. (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.	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	(vi) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5. (vii) Bonded laminated materials where— (A) each lamina, including any core, is *non-combustible*; and (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and (C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively. This clause also prohibits the use of in situ formwork containing combustible elements including PVC lined formwork products where the PVC lining remains in place for the life of the building. Where the use of such products is proposed – in all instances the material must be the subject of a site specific Performance Assessment Report. No details on external wall construction provided for review other than notations of precast panels with brick inlays and curtain wall glazing – To be further assessed at Crown Certificate Stage Cavity Barriers will be required between the slab edge and curtain wall glazing to ensure the 120/120/120 FRL slab rating is achieved up to the inside face of the glazed curtain wall	
C1.10: Fire hazard properties	Fire hazard properties of internal linings, materials and assemblies must comply with C1.10 of the BCA and Specification C1.10, including floor, wall and ceiling linings, air-handling ductwork, lift cars, insulation, *sarking-type materials* and attachments, or be considered *non-combustible*. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.	Noted
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be *non-combustible* unless it is one of the following: (a) An ancillary element that is *non-combustible*. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grille not more than 2 m² in area associated with a building service.	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	(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 *exit*, where it would render the *exit* unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) A paint, lacquer or a similar finish. (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k). Further details to be assessed at Crown Certificate Stage	
PART C2 – COMPARTMENT AND SEPARATION		
C2.0: Deemed-to-Satisfy Provisions	Informational	Noted
C2.1: Application of Part	Informational - C2.2, C2.3 and C2.4 do not apply to a carpark provided with a sprinkler system complying with Specification E1.5 (other than an FPAA101D or FPAA101H system), an open-deck carpark or an open spectator stand.	Noted
C2.2: General floor area and volume limitations	The size of *fire compartments* in the building must not exceed that specified in Table C2.2. As each floor forms a separate fire compartment – compliance with this clause is achieved – subject to cavity barriers being provided at each level to the slab edges.	Complies
C2.3: Large isolated buildings	The building is not considered or required to be considered as a large isolated building.	N/A

SECTION C: FIRE RESISTANCE		
C2.6: Vertical separation of openings in external walls	Clause not applicable as development will be sprinkler protected	N/A
C2.7: Separation by fire walls	• **Construction -** A *fire wall* must be constructed in accordance with the following: – Any openings in a *fire wall* must not reduce the FRL required by Specification C1.1 for the *fire wall*, except where permitted by the Deemed-to-Satisfy Provisions of Part C3. – Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not pass through or cross the *fire wall* unless the required fire resisting performance of the *fire wall* is maintained. • **Separation of buildings –** A part of a building separated from the remainder of the building by a *fire wall* 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 *fire wall* 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 *fire wall* 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 *fire wall* 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 FRL not less than that of the *fire wall* and no openings closer than 3 m to any wall above the lower roof; or (C) the lower roof if its covering is *non-combustible* and the lower part has a sprinkler system complying with Specification E1.5. Fire separation of the Site C OSD portion from the rest of the development to be treated as a separate building will be addressed in a sperate FER as the fire separation requires part vertical and part horizontal separation which is outside the criteria of this clause.	**PS Refer Part 5.3**
C2.8: Separation of classifications in the same storey	Where a storey has different classifications located alongside one another: • each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; or	Complies

SECTION C: FIRE RESISTANCE		
	• the parts must be separated in that storey by a *fire wall* having the higher FRL prescribed in Table 3; Each floor forms the one single classification other than ground floor where a 120/120/120 FRL fire wall will separate the Station entrance from the office foyer	
C2.9: Separation of classifications in different storeys	Floors separating storeys of different classifications must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey. Each floor will need to possess a 120/120/120 FRL Note: Determination of Floor FRL's must also consider compliance with C2.7 whereby the floor must have the same FRL as the *fire wall* of the *fire compartment* below and D2.12 whereby roof as open space must have an FRL not less than 120/120/120.	CRA – Refer Annexure C
C2.10: Separation of lift shafts	Applies to Lift connecting more than 2 storeys, or more than 3 if building is sprinklered, (other than lifts wholly in atrium). 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. The western wall of the emergency lift shaft is proposed to be a glazed wall which will not possess a FRL of 120/120/120. The provisions of Clause C2.10(c) of BCA2019 require emergency lifts to be contained within a 120/120/120 shaft. As such the lack of a FRL to the western side of the lift shaft has been assessed against the performance provisions of CP2 of BCA2019 under separate cover No details of lift shaft construction or FRL's. Further details to be assessed at Crown Certificate Stage	**PS Refer Part 5.3 of Report** – Refer Annexure C
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. Stairs and lifts to proposed building as required	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:	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	• smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or • stair pressurizing equipment installed in compliance with the relevant provisions of AS 1668.1; or • a lift installation without a machine room; or • equipment otherwise adequately separated from the remainder of the building. Separation must be by construction having an FRL as required by Specification C1.1, but not less than FRL 120/120/120 with openings protected by self-closing fire doors having an FRL of not less than –/120/30. Separation of on-site fire pumps must comply with the requirements of AS 2419.1-2005. Separating construction has been nominated on plans as 120/120/120 FRL to various plant areas.	
C2.13: Electricity supply system	• Any electrical substation located within the building must be separated from the remainder of the building by construction having an FRL of not less than 120/120/120, and doorways protected with self-closing fire doors having an FRL of not less than –/120/30. • A main switchboard which sustains emergency equipment operating in the emergency mode must be fire separated from any other part of the building by construction having an FRL of not less than 120/120/120 and have the doorway fitted with self-closing fire door having an FRL of not less than –/120/30. • Any electrical conductors located within the building that supply a substation or main switchboard for emergency equipment must comply with BCA clause C2.13. • Emergency equipment switchgear must be separated from non-emergency equipment switchgear by metal partitions designed to minimize the spread of a fault from the non-emergency equipment switchgear. Emergency equipment includes but is not limited to the following: – fire hydrant booster pumps; – sprinkler pumps; – hose reel pumps; – air-handling systems designed to exhaust and control the spread of smoke; – emergency lifts;	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	– control and indicating equipment; and – sound systems and intercom systems for emergency purposes. No substation proposed to building and Separating construction has been nominated on plans as 120/120/120 FRL to main switch room as required	
PART C3 – PROTECTION OF OPENINGS		
C3.0: Deemed-to-Satisfy Provisions	Informational	Noted
C3.1: Application of Part	(a) The Deemed-to-Satisfy Provisions of this Part do not apply to– (i) Control joints, weep holes and the like in external walls of masonry construction and joints between panels in external walls of pre-cast concrete panel construction if, in all cases they are not larger than necessary for the purpose; and (ii) *Non-combustible* ventilators for subfloor or cavity ventilation, if each does not exceed 45 000 mm^2 in face area and is spaced not less than 2 m from any other ventilator in the same wall; and (iii) Openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like; and (iv) In a carpark– (A) Service penetrations through; and (B) Openings formed by a vehicle ramp in, A floor other than a floor that separates a part not used as a carpark, providing the connected floors comply as a single *fire compartment* for the purposes of all other requirements of the Deemed-to-Satisfy Provisions of Sections C, D and E. (b) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings in building elements required to be fire-resisting include doorways, windows (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL. (c) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings, other than those covered under (a)(iii), between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the	Note

<table>
<tr><th colspan="3">SECTION C: FIRE RESISTANCE</th></tr>
<tr><td></td><td>building, are deemed to be openings in an external wall.</td><td></td></tr>
<tr><td>C3.2: Protection of openings in external walls</td><td>Openings in an external wall that is required to have an FRL must be protected in accordance with C3.4 if the distance between the opening and the fire-source feature is:
less than 3 m from a side or rear boundary; or
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.

All openings are greater than 3.0m to a fire source feature thus no further protection required by this clause.</td><td>N/A</td></tr>
<tr><td>C3.3: Separation of external walls and associated openings in different fire compartments</td><td>The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must not be less than that set out in Table C3.3, unless—

(a) those parts of each wall have an FRL not less than 60/60/60; and

(b) any openings protected in accordance with C3.4.

Table C3.3 DISTANCE BETWEEN EXTERNAL WALLS AND ASSOCIATED OPENINGS IN DIFFERENT FIRE COMPARTMENTS

<table><tr><th>Angle between walls</th><th>Min. Distance</th></tr><tr><td>0° (walls opposite)</td><td>6 m</td></tr><tr><td>more than 0° to 45°</td><td>5 m</td></tr><tr><td>more than 45° to 90°</td><td>4 m</td></tr><tr><td>more than 90° to 135°</td><td>3 m</td></tr><tr><td>more than 135° to less than 180°</td><td>2 m</td></tr><tr><td>180° or more</td><td>Nil</td></tr></table>
Each floor forms a separate fire compartment other than at ground level – location of fire wall to ground level such that no further protection required by this clause</td><td>N/A</td></tr>
<tr><td>C3.4: Acceptable methods of protection</td><td>No protection required by C3.2 or C3.3 to satisfy this clause</td><td>N/A</td></tr>
<tr><td>C3.5: Doorways in fire walls</td><td>No doorways proposed in ground floor fire wall</td><td>N/A</td></tr>
</table>

SECTION C: FIRE RESISTANCE		
C3.7: Protection of doorways in horizontal exits	No required or proposed horizontal exits	N/A
C3.8: Openings in fire-isolated exits	Doorways that open to fire-isolated stairways, fire-isolated passageways or fire-isolated ramps, and are not doorways opening to a road or open space, must be protected by –/60/30 fire doors that are self-closing, or automatic-closing in accordance with (ii) and (iii) of Clause C3.8. Further details to be assessed at Crown Certificate Stage.	CRA – Refer Annexure C
C3.9: Service penetrations in fire-isolated exits	The fire isolated *exits* are not to be penetrated by any services **other** than: • electrical wiring associated with: – a lighting, detection, or pressurization system serving the *exit*; or – a security, surveillance or management system serving the *exit*; or – an intercommunication system or an audible or visual alarm system in accordance with D2.22; or – the monitoring of hydrant or sprinkler isolating valves. • ducting associated with a pressurisation system if it; (i) is constructed of material having an FRL of not less than –/120/60 where it passes through any other part of the building; and (ii) does not open into any other part of the building; or • water supply pipes for fire services. Further details to be assessed at Crown Certificate Stage.	CRA – Refer Annexure C
C3.10: Openings in fire-isolated lift shafts	• Lift landing doors are required to be fire doors with an FRL of -/60/- that comply with AS 1735.11-1986 and be set to remain closed except when discharging or receiving, passengers, goods or vehicles. • Panels in the wall of the lift shaft must be backed by construction having an FRL of not less than –/60/60 if it exceeds 35 000 mm^2 in area. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
C3.12: Openings in floors and ceilings for services	Where services pass through a floor which is required to achieve an FRL or a ceiling required to have a resistance to the incipient spread of fire, the service must be enclosed within a fire resisting shaft or fire protected in	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	accordance with Clause C3.15. Further details to be assessed at Crown Certificate Stage	
C3.13: Openings in shafts	Openings in shafts must be protected by: a) if it is in a sanitary compartment – a door or panel which together with its frame, is *non-combustible* or has an FRL of not less than –/30/30; or b) a self-closing –/60/30 fire door or hopper; or c) an access panel having an FRL of not less than –/60/30; or d) if the shaft is a garbage shaft – a door or hopper of *non-combustible* construction.	CRA – Refer Annexure C
C3.15: Openings for service installations	Where services pass through an element which is required to achieve an FRL (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15. Note: contractors should check with Certifying Authority to confirm compliance with their proposed fire stopping method. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
C3.16: Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
C3.17: Columns protected with lightweight construction to achieve an FRL	A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire. It is assumed all columns will be of concrete construction at this stage.	N/A
SPECIFICATION C.1.1 – FIRE-RESISTING CONSTRUCTION		
2.0: General Requirements	Informational	Noted
2.1: Exposure to fire-source features	A building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the *fire-source feature*, or vertical projection of the feature, is not obstructed by another part of the building that– (i) has an FRL of not less than 30/–/–; and (ii) is neither transparent nor translucent.	Noted
2.2: Fire protection for a support of another part	Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL not less than that required by other	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	provisions of this Specification; and if located within the same *fire compartment* as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	
2.3: Lintels	No lintels considered to be used in this development with curtain wall construction	N/A
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. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
2.5: General concessions	Structures on roofs — A *non-combustible* structure situated on a roof need not comply with the other provisions of this Specification if it only contains— (i) lift motor equipment; or (ii) one or more of the following: (A) Hot water or other water tanks. (B) Ventilating ductwork, ventilating fans and their motors. (C) Air-conditioning chillers. (D) Window cleaning equipment. (E) Other service units that are *non-combustible* and do not contain flammable or combustible liquids or gases. Rooftop plant and equipment can be supported off non-combustible structures. Otherwise no concessions under this clause applicable	CRA – Refer Annexure C
2.6: Mezzanine floors: Concession	No mezzanine floors proposed	N/A
2.7: Enclosure of shafts	Fire-isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction having an FRL required for the walls of a non-load-bearing shaft in the same building, as per specification C1.1. This fire rating is required in two directions. The above does not apply to shafts extending beyond the roof covering, other than fire isolated stair and lift shafts and the bottom of *non-combustible* shafts laid directly on the ground. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
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 *non-combustible*.	CRA – Refer Annexure C

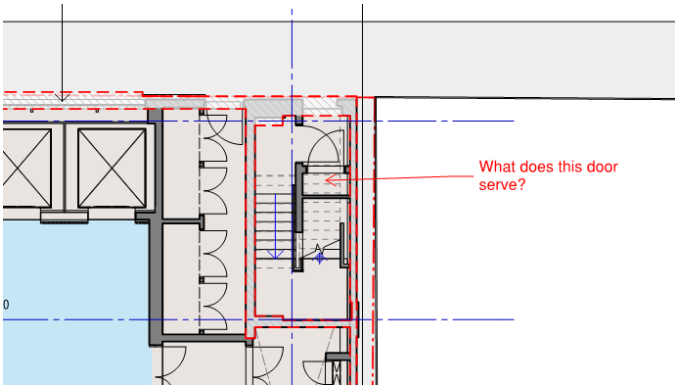
SECTION C: FIRE RESISTANCE			
		(Note: insulation and sarking used must be *non-combustible*) • Internal walls required to be fire rated must extend to– (i) to the underside of the floor next above; or (ii) the underside of a roof complying with Table 3; or (iii) if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the *non-combustible* roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other combustible building elements; or (iv) a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes. • Load bearing internal walls (including those part of a loadbearing shaft) and *fire walls* must be of concrete or masonry. • Non-loadbearing internal walls required to be fire rated, as well as non-load bearing lift, ventilating, pipe, garbage or similar shaft wall must be of *non-combustible* construction. **Note:** This includes *non-combustible* insulation. When an insulation material is not certified as *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage. • The FRLs specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5m of a window and are exposed through that window to a *fire-source feature*. • It should also be noted that if Dincel or Rediwall material is to be used as an element where the BCA requires such element to be *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage. At this stage it has been assumed that no such products are proposed to development. No details provided on all FRL's of all elements. Further details to be assessed at Crown Certificate Stage	
3.2:	Concessions for floors	No floor concessions applicable to this development	Noted
3.3:	Floor Loading of Class 5 and 9b buildings: Concession	If a floor in a Class 5 or 9b building is designed for a live load not exceeding 3 kPa— (a) the floor next above (including floor beams) may have an FRL of 90/90/90; or	Noted

SECTION C: FIRE RESISTANCE			
		(b) the roof, if that is next above (including roof beams) may have an FRL of 90/60/30. Further details to be assessed at Crown Certificate Stage	
3.4:	Roof superimposed on concrete slab: Concession	Rooftop documented as a concrete slab thus provisions of this clause not applicable	Noted
3.5:	Roof: Concession	A roof need not comply with Table 3 if its covering is *non-combustible* and the building— a) has a sprinkler system (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 *effective height* of not more than 25 m and the ceiling immediately below the roof has a *resistance to the incipient spread of fire* to the roof space of not less than 60 minutes. Rooftop documented as a concrete slab thus provisions of this clause not applicable	Noted
3.6:	Roof lights	No roof lights proposed	N/A
SPECIFICATION C1.10 – FIRE HAZARD PROPERTIES			
1.	Scope	Informational	-
2.	Application	Informational	Noted
3.	Floor linings and floor coverings	A floor lining or floor covering must have– a) a *critical radiant flux* not less than that listed in Table 2; and b) in a building not protected by a sprinkler system complying with Specification E1.5, a maximum smoke development rate of 750 percent-minutes; and c) a *group number* complying with Clause 6(b), for any portion of the floor covering that is continued more than 150 mm up a wall. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
4.	Wall and ceiling linings	a) A wall or ceiling lining system must comply with the *group number* specified in Table 3 and for buildings not fitted with a sprinkler system complying with Specification E1.5 have– (i) a *smoke growth rate index* not more than 100; or (ii) an *average specific extinction area* less than 250 m2/kg.	CRA – Refer Annexure C

SECTION C: FIRE RESISTANCE		
	b) A *group number* of a wall or ceiling lining and the *smoke growth rate index* or *average specific extinction area* must be determined in accordance with AS 5637.1. Further details to be assessed at Crown Certificate Stage	
5. Air-handling ductwork	Rigid and flexible ductwork must comply with the *fire hazard properties* set out in AS 4254 Parts 1 and 2. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
6. Lift cars	Materials used as— a) floor linings and floor coverings must have a *critical radiant flux* not less than 2.2; and b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
7. Other materials	Materials and assemblies not included in Clauses 3, 4, 5 or 6 must not exceed the indices set out in Table 4. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
SPECIFICATION C3.4 – FIRE DOORS, SMOKE DOORS, FIRE WINDOWS AND SHUTTERS		
1. Scope	Informational	Noted
2. Fire doors	Fire door sets must comply with AS1905.1 and not fail by radiation through any glazed part during the period specified for integrity in the required FRL. Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
SPECIFICATION C3.15 – PENETRATION OF WALLS, FLOORS AND CEILINGS BY SERVICES		
1. Scope	Informational	Noted
2. Application	For Information only	Noted
3. Metal pipe system	No Details of fire sealing systems proposed at this stage - Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
4. Pipes penetrating sanitary compartments	No Details of fire sealing systems proposed at this stage - Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
5. Wires and cables	No Details of fire sealing systems proposed at this stage - Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
6. Electrical switches and outlets	No Details of fire sealing systems proposed at this stage - Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C
7. Fire-stopping	No Details of fire sealing systems proposed at this stage - Further details to be assessed at Crown Certificate Stage	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
PART D1 – PROVISION FOR ESCAPE		
D1.0: Deemed-to-Satisfy Provisions	Informational	Noted
D1.1: Application of Part	The *Deemed-to-Satisfy Provisions* of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or a Class 4 part of a building.	Noted
D1.2: Number of exits required	• As the building has an *effective height* of more than 25 metres, not less than 2 *exits* must be provided from each storey. • Without passing through another *sole-occupancy unit*, every occupant of a storey or part of a storey must have access to an *exit* or at least 2 *exit*, if 2 or more are required. Currently only one exit is proposed to ground floor and level 1 – thus these levels to be assessed against applicable performance provisions under a separate FER at CC stage. All other levels have two exits as required for a building over 25m in effective height.	**PS Refer Part 5.3**
D1.3: When fire-isolated stairways and ramps are required	Every exit stairway is documented as being a fire isolated exit as required.	Complies
D1.4: Exit travel distances	• no point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m; and • in a Class 5 or 6 building, the distance to a single *exit* serving a storey at the level of access to a road or open space may be increased to 30 m. Based on an open floor plan to each level – egress travel distances currently as required to all levels and areas. Each level has also been nominated with a dotted corridor line connecting both egress stairs and the lifts to allow for future tenancy separation on each level. At ground level, the maximum travel distance for a class 5 is 30m to a single exit which is achieved.	Complies
D1.5: Distance between alternative exits	*Exits* that are required as alternative means of egress must be– (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 *exits* is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than — 60 m apart; and (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart.	Complies

SECTION D: ACCESS AND EGRESS		
	Note: the distance between *exits* must be measured through the point at which travel two *exits* is available. Current distance between alternate exits where two exits are provided is as required.	
D1.6: Dimensions of exits and paths of travel to exits	In a required *exit* or path of travel to an *exit*– • the unobstructed height throughout exits and paths of travel to *exits* must not be less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and • the unobstructed width of each *exit* or path of travel to an *exit*, except for doorways must be not less than 1m; • the unobstructed width of doorways must be not less than 750 mm, unless providing access for people with disabilities in which case the unobstructed width must be not less than 850 mm. • the required width of a stairway or ramp must be measured clear of all obstructions such as handrails. • the unobstructed width of a required *exit* must not diminish in the direction of travel to a road or open space. Aggregate egress widths of exits to each floor suitable for accommodated population. – no details of clear exit widths within stairs that must be a minimum 1.0m clear – to be further assessed at Crown Certificate stage.	CRA – Refer Annexure C
D1.7: Travel via fire-isolated exits	• A doorway from a room must not open directly into a stairway that is required to be fire-isolated unless it is from – (i) a public corridor, public lobby or the like; or (ii) a *sole-occupancy unit* occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. • D1.7 (b) - Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (i) to a road or open space; or (ii) to a point— (A) in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	(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 *exit* necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4, for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. Fire isolated stair access and discharge as required requiring no further protection other than the small doorway below – confirmation to be provided what this door is – as a minimum it will require a self-closing -/60/30 fire door.  	
D1.9: Travel by non-fire-isolated stairways or ramps	There are no non-fire isolated stairs required or proposed.	N/A
D1.10: Discharge from exits	• *Exits* must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the *exit*. • If a required *exit* leads to open space, the path of travel to the road must have an unobstructed width	Complies

SECTION D: ACCESS AND EGRESS		
	of not less than 1m. min width of required exit if greater. • The discharge points of alternative *exits* must be as far apart as practical Discharge of proposed exits as per this clause – direct to open space.	
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: Each office level – 36 persons based on 10m^2 per person to the NLA areas	Noted
D1.14: Measurement of distances	Informational – The nearest part of an *exit* means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a *horizontal exit*, the nearest part of the doorway.	For Information Only - Noted
D1.15: Method of Measurement	For Information Only	Noted

SECTION D: ACCESS AND EGRESS		
D1.16: Plant rooms, lift motor rooms and electricity network substations: concession	Informational – (a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a floor area of not more than 100 m^2; or (ii) all but one point of egress from a plant room, a lift machine room or a Class 8 electricity network substation with a floor area of not more than 200 m^2. (b) A ladder permitted under (a)— (i) may form part of an *exit* provided that in the case of a fire-isolated stairway it is contained within the shaft; or (ii) may discharge within a storey in which case it must be considered as forming part of the path of travel; and (iii) for a plant room or a Class 8 electricity network substation, must comply with AS 1657. All plantroom access is direct from each floor without the need for any access stairs, ladders or the like	N/A
D1.17: Access to lift pits	Access to the lift pit is assumed to be through the bottom landing doors as the pit is assumed to be less than 3m deep. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
PART D2 – CONSTRUCTION OF EXITS		
D2.0: Deemed-to-Satisfy Provisions	Informational	Noted
D2.1: Application of Part	Informational– Except for D2.13, D2.14(a), D2.16, D2.17(d), D2.17(e), D2.21 and D2.24, the Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 3 building. Except for D2.13, D2.14(a), D2.16, D2.17(d), D2.17 (e), D2.18 & D2.24, the deemed-to-satisfy Provisions of this Part do not apply to internal parts of the Class 2 *sole-occupancy units*.	Noted
D2.2: Fire-isolated stairways and ramps	The fire isolated stairways must be constructed of *non-combustible* materials and constructed so that if there is local failure it will not cause structural damage to or impair the fire-resistance of the shaft. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
D2.3: Non-fire-isolated stairways and ramps	There are no non-fire isolated stairs to development	N/A
D2.4: Separation of rising and descending stair flights	Al fire stairs are descending stairs only that discharge direct to a road or open space	N/A

SECTION D: ACCESS AND EGRESS		
D2.7: Installations in exits and paths of travel	• Access to service shafts and services other than to fire-fighting or detection equipment must not be provided from a fire-isolated stairway or fire-isolated passageway. • Gas or other fuel services must not be installed in a required *exit.* • Any electricity meters, distribution boards or ducts, or telecommunications distribution boards or equipment installed in corridors/hallways/lobbies or the like must be enclosed with *non-combustible* construction or a fire protective covering with doorways suitably sealed against smoke spread. • Electrical wiring may be installed in a fire-isolated *exit* if the wiring is associated with: – a lighting, detection, or pressurization system serving the *exit*; or – a security, surveillance or management system serving the *exit*; or – an intercommunication system or an audible or visual alarm system in accordance with D2.22; or – the monitoring of hydrant or sprinkler isolating valves. Further assessment required at Crown Certificate Stage as there are EDB and Comms Cupboards located on each floor	CRA – Refer Annexure C
D2.8: Enclosure of space under stairs and ramps	No enclosures proposed beneath stairs.	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. All stairs are less than 2.0m width thus only a single handrail on one side of the fire isolated stairs is required.	Noted
D2.10: Pedestrian ramps	• A ramp serving as a required *exit* must— (i) where the ramp is also serving as an accessible ramp under Part D3, be in accordance with AS 1428.1; or (ii) in any other case, have a gradient not steeper than 1:8. • The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586.	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	The only ramp proposed is a 1:21 entrance ramp to the office foyer area. To have slip resistance finish as per this clause.	
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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
D2.12: Roof as open space	There are some areas being considered as roof as open space under this clause being the garden terrace area at level 9 where the general public will have access to. It is assumed the rooftop sab will possess a 120/120/120 FRL thus suitable construction.	CRA – Refer Annexure C
D2.13: Goings and risers	Stairways must comply with the following: • stairways must have not more than 18 and not less than 2 risers in each flight; • goings must be between 250 mm and 355 mm; • risers must be between 115 mm high and 190 mm high; • the slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700; • the goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (R) are considered constant if the variation between– (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm. • Risers must not contain any openings that would permit a 125 mm sphere to pass through. • each tread must have a non-slip finish or an adequate non-skid strip near the edge of the nosings; • treads must be of solid construction (not mesh or perforated) if the stairway is more than 10 m high or connects more than 3 storeys. • 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.* Risers and goings documented at 250 goings and 173mm risers as required. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C

<table>
<tr><th colspan="3">SECTION D: ACCESS AND EGRESS</th></tr>
<tr><td>D2.14: Landings</td><td>Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586.

Further assessment required at Crown Certificate Stage

<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Condition</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr>
</table></td><td>CRA – Refer Annexure C</td></tr>
<tr><td>D2.15: Thresholds</td><td>The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless–

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

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

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

b) in other cases–

(i) the doorway opens to a road or open space, external stair landing or external balcony; and

(ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.

Further assessment required at Crown Certificate Stage</td><td>CRA – Refer Annexure C</td></tr>
<tr><td>D2.16: Barriers to prevent falls</td><td>Balustrades must be provided to stairs and balconies, driveway ramps etc where there is a fall of more than 1m. Balustrades must comply with the following:

<u>Balustrade minimum heights</u>

• 865 mm above stair nosings;</td><td>CRA – Refer Annexure C</td></tr>
</table>

SECTION D: ACCESS AND EGRESS		
	• 865 mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length; and • 1 m in all other locations. <u>Balustrade openings – fire-isolated stairs</u> • maximum openings of 300 mm; or • where rails are used– – a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and – the opening between rails must not be more than 460 mm <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. The rooftop planter beds and balustrading at level 9 to be reviewed in further detail to ensure there are no climbable elements. The current details shown on plan 460555 have a 1.0m high glazed balustrade above the planter bed with no climbable elements nominated.	
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 • be fixed at a height of not less than 865 mm above the nosings of the stair treads and the floor surface of the ramp, landing, or the like; and • be continuous between stair flight landings and have no obstruction that will break a hand-hold. • be constructed to comply with clause 12 of AS 1428.1 (including handrails to the fire stairs). • Handrails in common areas (other than fire stairs) must also accord with D3.3. <u>Clause 12 of AS 1428.1-2009</u> A required *exit* (fire isolated or non-fire isolated) serving an area required to be accessible must be fitted with handrails in accordance with Clause 12 of AS1428.1. The handrail shall follow the angle of the nosings and be consistent height through the stair flight and any landings with no vertical sections at the landing. Compliance can be achieved via offset risers at the bottom of the flight in accordance with Figure 28 in AS1428.1-2009 or with	CRA – Refer Annexure C

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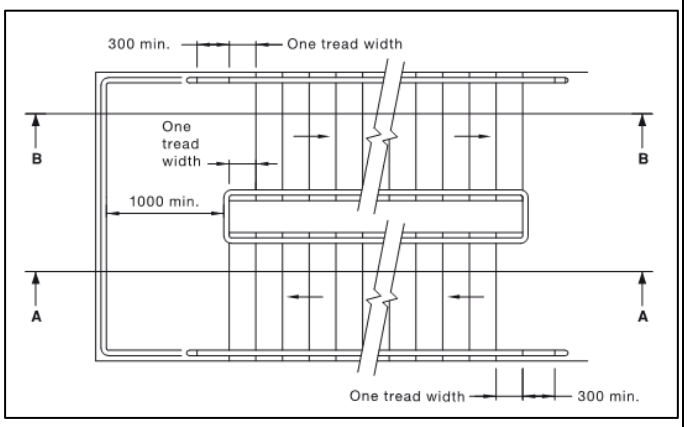
	larger landings to accommodate required handrail extensions.  *Figure 28 in AS1428.1-2009* As currently documented - offset stair flights will enable handrail compliance with above. Further assessment required at Crown Certificate Stage	
D2.18: Fixed platforms, walkways stairways and ladders	Plant areas may be accessed via stairs and ladders compliant with AS 1657-2018. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
D2.19: Doorways and doors	• Sliding doors serving as *exit* doors must be openable manually under a force of not more than 110N. • *Exit* doors that are power operated must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source and if leading to road or open space, open automatically if there is a power failure or on the activation of a fire or smoke alarm anywhere in the *fire compartment* served by the door. • A power operated door in a path of travel to a required *exit* must be able to be opened manually under a force of not more than 110 N if there is a malfunction of the power source. Further assessment required at Crown Certificate Stage particularly of auto sliding entry doors to office foyer at ground level.	CRA – Refer Annexure C
D2.20: Swinging doors	Swinging doors in a required *exit* must not encroach– (i) at any part of its swing by more than 500 mm on the required 1m width of the *exit* and (ii) when fully open, by more than 100 mm on the required 1m *exit* width; and	CRA – Refer Annexure C

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	the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door. A swinging door in a required *exit* must swing in the direction of egress unless– • it serves a building or part with a floor area not more than 200 m^2, it is the only required *exit* from the building or part and it is fitted with a device for holding it in the open position; or • it serves a sanitary compartment or airlock (in which case it may swing in either direction). Currently all required exit doors on levels 1 to 10 are swing doors that swing in the direction of egress.	
D2.21: Operation of latch	All doors in a required *exit* or forming part of a required *exit* AND doors in a path of travel to a required *exit* must be readily openable without a key from the side that faces a person seeking egress, by– (i) a single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – A. be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and B. have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm and not more than 45mm; or (ii) a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor. (iii) where the latch operation device referred to in (ii) is not located on the door leaf itself— (A) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located— (aa) not less than 500 mm from an internal corner; and (bb) for a hinged door, between 1 m and 2 m from the door leaf in any position; and (cc) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position. (B) braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. The above requirements do not apply to a door that –	CRA – Refer Annexure C

SECTION D: ACCESS AND EGRESS		
	(i) serves only or is within a *sole-occupancy unit* in a Class 2 building; or (ii) serves a *sole-occupancy unit* in a Class 5, 6, 7 or 8 building with a floor area not more than 200m^2; or (iii) are fitted with a fail-safe device which automatically unlocks the door upon the activation of an AS 1670.1 detection system installed throughout the building and is readily openable when unlocked. All doors in a required *exit* or forming part of a required *exit* AND doors in a path of travel to a required *exit* must be readily openable– (i) without a key from the side that faces a person seeking egress; and (ii) by a single hand pushing action on a single device such as a panic bar located between 900mm and 1.2 m from the floor; and (iii) where a two-leaf door is fitted, the provisions of (i) and (ii) need only apply to one door leaf if the appropriate requirements of D1.6 are satisfied by the opening of that one leaf; and (iv) where the door is a door in a path of travel providing re-entry to the building from a balcony terrace or the like, it may be fitted with key-operated fastenings only, the tongues of which must be locked in the retracted position whenever the building is occupied by the public, so the door can yield to pressure. Further assessment required at Crown Certificate Stage	
D2.22: Re-entry from fire-isolated exits	Doors of the fire-isolated *exits* 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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C

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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
PART D3 - ACCESS FOR PEOPLE WITH A DISABILITY		
D3.0: Deemed-to-Satisfy Provisions	Informational	Noted
D3.1: General building access requirements	Access complying with AS 1428.1-2009 must be provided from the principal pedestrian entrance(s): <u>Class 5</u> • to and within all areas normally used by the occupants as well as to the rooftop terrace area at level 9. Access provided via main entrance at ground level and then via lifts to all other levels.	Complies
D3.2: Access to buildings	Access complying with AS 1428.1-2009 must be provided to the building from the main points of pedestrian entry at the allotment boundary. Access provided via main entrance at ground level and then via lifts to all other levels including level 9	Complies
D3.3: Parts of buildings to be accessible	• Walkways and ramps must comply with clause 10 of AS 1428.1-2009. • Fire-isolated stairways must comply with clause 11 (f) & (g) of AS 1428.1-2009. • Accessways must have passing spaces (1800 mm x 2000 mm) complying with AS 1428.1-2009 at maximum 20 m intervals on those parts of an accessway where a direct line of sight is not available. • Accessways must have turning spaces (1540 mm x 2070 mm) within 2m of the end of the accessway and at maximum 20 m intervals along the accessway. Note: Turning spaces must be provided clear of fixtures and fittings such as skirtings, general purpose outlets (GPOs), fire extinguishers etc. • An intersection of accessways satisfies the spatial requirements for a passing and turning space. Note: The Access to Premises Standards to not provide the concessions provided in sub-cluses (g) and (h) in this clause, hence compliance with the Access to Premises Standards will require the floor covering in the accessible	CRA – Refer Annexure C

	areas to strictly comply with Clause 7.4.1(a) of AS1428.1-2009. Accessible lockers have been provided to the unisex accessible EOT facilities at level 1 and access to rooftop via lift facilities including circulation spaces.	
D3.4: Exemptions	Informational – The following areas are not required to be accessible: • an area where access would be inappropriate because of the particular purpose for which the area is used. • an area that would pose a health or safety risk for people with a disability. • any path of travel providing access only to an exempted area. The following areas in the building are considered to not be accessible due to the specific uses of the room or space: 1. Level 9 and level 10 plantroom. 2. Level 1 plant areas and MSB	Noted
D3.5: Accessible car parking	No general carparking provided, thus no accessible parking required.	N/A
D3.6: Signage	• Braille and tactile signage complying with Specification D3.6 and incorporating the international symbol of access, or deafness as appropriate, must identify each: – sanitary facility; and – any space with a hearing augmentation system; and – identify each door required by E4.5 to be provided with an *exit* sign and state “Exit” and “Level” and either: (aa) the floor level number; or (bb) a floor level descriptor; or (cc) a combination of (aa) and (bb) • Signage including the international symbol for deafness in accordance with AS 1428.1 must be provided within a room containing a hearing augmentation system identifying – – the type of hearing augmentation; and – the area covered within the room; and – if receivers are being used and where the receivers can be obtained.	CRA – Refer Annexure C

		• Signage to accessible sanitary facilities must identify if the facility is suitable for left or right handed use; and • Signage to identify an ambulant accessible facility in accordance with AS 1428.1 must be located on the door of the facility. • Where a pedestrian entrance is not accessible, directional signage incorporating the international symbol of access, in accordance with AS 1428.1 must be provided to direct a person to the location of the nearest accessible pedestrian entrance; • Where a bank of facilities is not provided with an accessible unisex sanitary facility, directional signage incorporating the international symbol of access in accordance with AS 1428.1 must be places at the location of the sanitary facilities that are not accessible, to direct a person to the location of the nearest accessible unisex facility. • in a building subject to F2.9, directional signage complying with Specification D3.6 must be provided at the location of each— (i) bank of sanitary facilities; and (ii) accessible unisex sanitary facility, other than one that incorporates an accessible adult change facility, to direct a person to the location of the nearest accessible adult change facility within that building. Further assessment required at Crown Certificate Stage	
D3.7:	Hearing augmentation	Not required to Class 5 base building tenancies	N/A
D3.8:	Tactile indicators	No TGSI's required to development as there are no non FIS's or 1:14-1:20 ramps proposed	N/A
D3.12:	Glazing on an Accessway	On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1. Further assessment required at Crown Certificate Stage particularly the ground floor glazed entry	CRA – Refer Annexure C
SPECIFICATION D3.6 – BRAILLE AND TACTILE SIGNS			
1.	Scope	Informational	Noted
2.	Location of Braille and Tactile Sign	Signs including symbols, numbering and lettering must be designed and installed as follows: a) Braille and tactile components of a sign must be located not less than 1200 mm and not higher than 1600 mm above the floor or ground surface. b) Signs with single lines of characters must have the line of tactile characters not less than 1250 mm and	CRA – Refer Annexure C

	not higher than 1350 mm above the floor or ground surface. c) Signs identifying rooms containing features or facilities listed in D3.6 must be located – (i) on the wall on the latch side of the door with the leading edge of the sign located between 50 mm and 300 mm from the architecture; and (ii) where (i) is not possible, the sign may be placed on the door itself. d) Signs identifying a door required by E4.5 to be provided with an *exit* sign must be located – (i) on the side that faces a person seeking egress; and (ii) on the wall on the latch side of the door with the leading edge of the sign located between 50 mm and 300 mm from the architrave; and (iii) where (ii) is not possible, the sign may be placed on the door itself. Further assessment required at Crown Certificate Stage	
3. Braille and Tactile Sign Specification	a) Tactile characters must be raised or embossed to a height of not less than 1 mm and not more than 1.5mm. b) Title case must be used for all tactile characters, and – (i) upper case tactile characters must have a height of not less than 15 mm and not more than 55 mm, except that the upper case tactile characters on a sign identifying a door required by E4.5 to be provided with an *exit* sign must have a height of not less than 20 mm and not more than 55 mm; and (ii) lower case tactile characters must have a minimum height of 50% of the related upper case characters. c) Tactile characters, symbols, and the like, must have rounded edges. d) The entire sign, including any frame, must have all edges rounded. e) The background, negative space or fill of signs must be of matt or low sheen finish. f) The characters, symbols, logos and other features on signs must be matt or low sheen finish. g) The minimum letter spacing of tactile characters on signs must be 2 mm. h) The minimum word spacing of tactile characters on signs must be 10 mm.	CRA – Refer Annexure C

		i) The thickness of letter strokes must not be less than 2 mm and more than 7 mm. j) Tactile text must be left justified, except that single words may be centre justified. k) Tactile text must be Arial typeface. Further assessment required at Crown Certificate Stage	
4.	Luminance contrast	The following applies to luminance contrast: a) The background, negative space, fill of a sign or border with a minimum width of 5 mm must have a luminance contrast with the surface on which it is mounted of not less than 30%. b) Tactile characters, icons and symbols must have a minimum luminance contrast of 30% to the surface on which the characters are mounted. c) Luminance contrasts must be met under the lighting conditions in which the sign is to be located. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
5.	Lighting	Braille and tactile signs must be illuminated to ensure luminance contrast requirements are met at all times during which the sign is required to be read. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
6.	Braille	The following applies to braille: a) Braille must be grade 1 braille (uncontracted) in accordance with the criteria set out by the Australian Braille Authority. b) Braille must be raised and domed. c) Braille must be located 8 mm below the bottom line of text (not including descenders). d) Braille must be left justified. e) Where an arrow is used in the tactile sign, a solid arrow must be provided for braille readers. f) On signs with multiple lines of text and characters, a semicircular braille locater at the left margin must be horizontally aligned with the first line of braille text. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
PART E1 – FIRE FIGHTING EQUIPMENT			
E1.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E1.3:	Fire hydrants	As the building has a floor area greater than 500 m^2, a fire hydrant system complying with AS 2419.1-2005 must be provided to serve the building.	**PS Refer Part 5.3**

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	Details should be provided showing: 1. Hydrant booster assembly location as required facing Hume Street and is within sight of the main entrance 2. Hydrant pump room location is at level 9 plant level. This internal pump room is accessed via a fire-isolated exit off an airlock facility as required; 3. 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. The Fire hydrant landing valve in Stair 2 serving Level 9 is located on the mid-landing, in lieu of the landing of the level served thus needs to eb addressed against the relevant performance provisions of EP1.3	CRA – Refer Annexure C
E1.4: Fire hose reels	Fire Hose Reels are not required to the Class 5 building or ancillary plantroom areas	N/A
E1.5: Sprinklers	The building must be provided with a sprinkler system complying with Table E1.5 and Specification E1.5 installed throughout. The sprinkler valve room location should be indicated on the plans. The room must have direct egress to road or open space. Alternatively, if the sprinkler system is a combined hydrant / sprinkler system then there will be no separate dedicated valve room required. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
E1.8: Fire control centres	• The building must be provided with a fire control centre facility in accordance with Clauses 2 to 5 of 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. Connection of this FCC (FIP) to the overall development including the Station portion to be addressed as part of the main building works	CRA – Refer Annexure C
E1.9: Fire precautions during construction	Informational– • During construction, not less than one portable fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required / temporary *exit*: and • After the building has reach an *effective height* of 12m, the required fire hydrants and fire hose reels must be operational on all floor / roof covered storeys, except for the 2 uppermost storeys; and all required booster connections must be installed.	Noted

SECTION E: SERVICES AND EQUIPMENT			
E1.10:	Provision for special hazards	Suitable additional provisions must be made if special problems of firefighting could arise because of the nature or quantity of stored materials or the location of the building in relation to a water supply. No special hazards with Site C OSD building – building usage assessed as part of the Fire Engineering scope	Noted
Specification E1.5 – FIRE SPRINKLER SYSTEMS			
1.	Scope	Informational	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.	CRA – Refer Annexure C
3.	Separation of sprinklered and non-sprinklered areas	Entire building will be sprinkler protected	Complies
4.	Protection of openings	Entire building will be sprinkler protected	Complies
5.	Fast response sprinklers	Fast response sprinklers may be installed only if they are suitable for the type of application proposed and it is demonstrated that the sprinkler system is designed to accommodate their use.	CRA – Refer Annexure C
6.	Sprinkler valve enclosures	(a) Sprinkler alarm valves if required 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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
7.	Water supply	(a) 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 (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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
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	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
		(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. Further assessment required at Crown Certificate Stage	
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). Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
PART E1.8 – FIRE CONTROL CENTRES			
1.	Scope	Informational – As the building has an effective height of greater than 25m but less than 50m the FCC must comply with Clauses 2 to 5 below	Noted
2.	Purpose and content	A fire control centre must— (a) provide an area from which fire-fighting operations or other emergency procedures can be directed or controlled; and (d) contain controls, panels, telephones, furniture, equipment and the like associated with the required fire services in the building; and (e) not be used for any purpose other than the control of— (i) fire-fighting activities; and (ii) other measures concerning the occupant safety or security. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
3.	Location of fire control centre	A fire control centre must be so located in a building that egress from any part of its floor, to a road or open space, does not involve changes in level which in aggregate exceed 300 mm.	Complies
4.	Equipment not permitted within a fire control centre	An internal combustion engine, pumps, sprinkler control valves, pipes and pipe fittings must not be located in a fire control centre but may be located in rooms accessed through the fire control centre. Location of FCC is such that there is no other equipment contained within this clause	Complies
5.	Ambient sound level of fire control centre	(a) The ambient sound level within the fire control centre measured when all fire safety equipment is operating	Complies

SECTION E: SERVICES AND EQUIPMENT		
	in the manner in which it operates in an emergency must not exceed 65 dB(A). (b) The measurement must be taken for a sufficient time to characterize the effects of all sound sources. Where there is not a great variation in noise level, a measurement time of 60 seconds may be used. There is no equipment called up by this clause that would impact on the FCC location in the office entry foyer	
PART E2 – SMOKE HAZARD MANAGEMENT		
E2.0: Deemed-to-Satisfy Provisions	Informational	Noted
E2.1: Application of Part	Informational	Noted
E2.2: General requirements (including Tables E2.2a and E2.2b)	**General smoke hazard management requirements** An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one *fire compartment* to another *fire compartment* or operates in a manner that may unduly contribute to the spread of smoke from one *fire compartment* to another *fire compartment* (such as lobby air supply) must— (i) be designed and installed to operate as a smoke control system in accordance with AS 1668.1; 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 1668.1; and for the purposes of this provision, each *sole-occupancy unit* in a Class 2 or 3 building is treated as a separate *fire compartment*. Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS1668.1 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated *exits*. **Fire-isolated exits** All fire-isolated *exits* serving a storey above an *effective height* of 25 m must be provided with an automatic air pressurisation system for fire-isolated *exits* in accordance with AS 1668.1. The automatic air pressurisation system applies to the entire *exit*. Stair pressurisation door velocity performance limited on Level 1 (single stair connection only) and Level 9 Roof (Terrace/Plant) as relief air paths	**PS Refer Part 5.3** CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
		are not available or direct to outside and has been addressed under separate cover against the performance provisions of EP2.2. **<u>Zoned Smoke Control System</u>** The building must be provided with a zoned smoke control system as per AS1668.1-2015. The zone pressurisation system is to be provided to Ground, Level 1 (Plant and EOT) and Level 9 Roof Plant levels, in lieu of throughout all areas of the building and has been addressed under separate cover against the performance provisions of EP2.2. Further assessment required at Crown Certificate Stage	
E2.3:	Provisions for special hazards	No special hazards to commercial office building	N/A
SPECIFICATION E2.2a – SMOKE DETECTION AND ALARM SYSTEM			
1.	Scope	Informational	Noted
2.	Type of system	System to comply with Clauses 4, 6, 7 and 8	Noted
4.	Smoke detection system	No details of smoke detection and alarm system - Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
6.	Smoke detection for smoke control system	No details of smoke detection and alarm system - Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
7.	Building occupant warning system	No details of smoke detection and alarm system - Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
8.	System Monitoring	No details of smoke detection and alarm system - Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
PART E3 – LIFT INSTALLATIONS			
E3.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E3.1:	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
E3.2:	Stretcher facility in lifts	A stretcher facility must be provided to an emergency lift required by E3.4. A stretcher facility must be provided to passenger lifts installed to serve any storey above an *effective height* 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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
E3.4:	Emergency lifts	As the building exceeds 25m in effective height, both lifts must be emergency lifts contained within a fire isolated shaft. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
E3.5:	Landings	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D.	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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
E3.7:	Fire service controls	The lifts serving any storey above an *effective height* of 12 m must be provided with: 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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
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 Crown Certificate stage.	CRA – Refer Annexure C
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 Crown Certificate stage.	CRA – Refer Annexure C
SPECIFICATION E3.1 – LIFT INSTALLATIONS			
1.	Scope	Informational	Noted
2.	Lift cars exposed	(a) A lift car exposed to solar radiation directly, or indirectly by re-radiations, must have – (i) mechanical ventilation at a rate of one air change per minute; or (ii) mechanical cooling. (b) A 2-hour alternative power source for ventilation or mechanical cooling at (a) must be provided in the event of normal power loss. Lift cars are considered to be exposed to solar radiation with glazing to rear wall of shaft	CRA – Refer Annexure C
3.	Lift car emergency lighting	A lift car must have an emergency lighting system designed – (a) to come on automatically upon failure of the normal light supply; and (b) to provide at least 20 lux of lighting for 2 hours on the alarm initiation button. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
4.	Cooling of lift shaft	While a lift in a lift shaft is in service, the cooling of the lift shaft must – (a) ensure that the dry bulb air temperature in the lift shaft does not exceed 40°C; and (b) if the cooling is by a ventilation system, be provided with an air changed rate determined using a temperature rise of no more than 5 K. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
5.	Lift foyer access	Where there is a security foyer in a building, access may be via locked security doors provided – (a) security doors revert to the unlocked state in the event of – (i) power failure; or (ii) fire alarm; and (b) locked foyer areas are monitored by closed circuit television and intercom system to a 24-hour staffed location. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
6.	Emergency access doors in a single enclosed lift shaft	(a) Where a lift is installed in a single enclosed lift shaft having a distance between normal landing entrances greater than 12.2m, emergency access doors must be provided and constructed as follows: (i) The clear opening size of emergency doors must be not less than 600 mm wide x 980 mm high. (ii) Hinged doors must not open towards the interior of the lift shaft. (iii) Doors must be self-closing and self-locking. (iv) Doors must be marked on the landing side with the letters not less than 35 mm high: "DANGER LIFTWELL ACCESS" "KEEP FURNITURE AND FIXTURES CLEAR". (v) Doors from the landing side must only be openable by a tool. (vi) Each emergency door must be provided with a positive breaking electrical contact, wired into the control circuit to prevent movement of the lift until the emergency door is both closed and locked. (b) In single enclosed lift shafts where – (i) ropes are installed; and (ii) the vertical distance between the lift car sill and the landing door head is less than 600 mm; and (iii) the counterweight is resting on its fully compressed buffer, emergency egress from the lift car must be provided in the form of an interlocked door with clear opening dimensions not less than 600 mm x 600 mm, accessible from the lift car entrance or the lift car rook (where the door is located in the wall of the lift shaft). Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
PART E4 – VISIBILITY IN AN EMERGENCY, EXIT SIGNS AND WARNING SYSTEMS			
E4.0:	Deemed-to-Satisfy Provisions	Informational	Noted
E4.2:	Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with Clause E4.2 of the BCA and AS 2293.1-2018. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
E4.3:	Measurement of distance	Informational	Noted
E4.4:	Design and operation of emergency lighting	The emergency lighting system must comply with AS 2293.1-2018. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C

SECTION E: SERVICES AND EQUIPMENT			
E4.5:	Exit signs	Exits signs are to be provided above or adjacent to a door providing egress as well as directional signage throughout the entire development where necessary. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
E4.6:	Direction signs	Where an *exit* is not readily apparent, directional signage is to be installed indicating the direction of egress. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
E4.8:	Design and operation of exit signs	*Exit* signs must comply with AS 2293.1-2018 and be clearly visible at all times when the building is occupied. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
E4.9:	Emergency warning and intercom systems	An Emergency warning and intercom system complying where applicable with AS 1670.4 must be installed within the building. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY			
PART F1 – DAMP AND WEATHERPROOFING			
F1.0:	Deemed-to-Satisfy Provisions	*Performance Requirement* FP1.4, for the prevention of the penetration of water through external walls, must be complied with. There are no Deemed-to-Satisfy Provisions for this *Performance Requirement* in respect of external walls. The assessment contained within this report does not include an assessment against Performance Provision FP1.4.	**PS Required Refer Part 5.3 of Report**
F1.1:	Stormwater drainage	Stormwater drainage to comply with AS3500.3-2003. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
F1.4:	External above ground membranes	Waterproofing membranes for external above ground use to comply with AS4654 Parts 1 and 2-2012. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
F1.5:	Roof coverings	Roof coverings are to comply with BCA Clause F1.5. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
F1.6:	Sarking	*Sarking-type materials* used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2-1994. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
F1.7:	Water proofing of wet areas in buildings	Wet areas must be constructed in accordance with AS 3740-2010 and F1.7 of the BCA. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
F1.9:	Damp-proofing	Moisture is to be prevented from reaching the walls above a damp-proof course, and the underside of the suspended floors. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
F1.13:	Glazed Assemblies	Glazed assemblies are to comply with AS2047 and AS1288. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
PART F2 – SANITARY AND OTHER FACILITIES			
F2.0:	Deemed-to-Satisfy Provisions	Informational	Noted
F2.2:	Calculation of number of occupants and facilities	Informational – a) The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means	Noted

SECTION F: HEALTH AND AMENITY		
	b) Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females c) In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility *required* for people with a disability may be counted once for each sex d) For the purpose of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels	
F2.3: Facilities in Class 3 to 9 buildings (including Table F2.3)	(a) Except where permitted by (b), (c), (f), F2.4(a) and F2.4(b), separate sanitary facilities for males and females must be provided for Class 3, 5, 6, 7, 8 or 9 buildings in accordance with Table F2.3. (b) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (c) If the majority of employees are one sex, not more than 2 employees of the other sex may share toilet facilities if the facilities are separated by means of walls, partitions and doors to afford privacy. (d) Employees and the public may share the same facilities in a Class 6 and 9b building (other than a school or early childhood centre) provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. (e) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females. (f) Separate sanitary facilities for males and females need not be provided for patients in a ward area of a Class 9a building. Based on 36 staff per floor, the number of sanitary facilities proposed per floor is as required being 1 x Male WC, 1 x Urinal, 1 x Male Handbasin, 1 x Female WC, 1 x Female Handbasin and one accessible per floor. The EOT facilities at level 1 are considered to be over and above the required sanitary facilities as such occupants who use the EOT are considered to be employees within the building thus served by sanitary facilities on each floor.	CRA – Refer Annexure C
F2.4: Accessible sanitary facilities (including Table F2.4)	No details of actual fit out unisex accessible sanitary facility or ambulant facilities to toilets on each level or EOT proposed. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
F2.5: Construction of sanitary compartments	a) Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend— (i) from floor level to the ceiling in the case of a unisex facility; or (ii) to a height of not less than 1.5 m above the floor if primary school children are the principal users; or (iii) 1.8 m above the floor in all other cases.	Complies

SECTION F: HEALTH AND AMENITY		
	b) The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F2.5, between the closet pan within the sanitary compartment and the doorway. Individual cubicles for WC's proposed as required.	
F2.6: Interpretation: urinals and washbasins	Informational– (a) A urinal may be— (i) an individual stall or wall-hung urinal; or (ii) each 600 mm length of a continuous urinal trough; or (iii) a closet pan used in place of a urinal. (b) A washbasin may be— (i) an individual basin; or (ii) a part of a hand washing trough served by a single water tap.	Noted
PART F3 – ROOM SIZES		
F3.0: Deemed-to-Satisfy Provisions	Informational	Noted
F3.1: Height of rooms and other spaces	The height of rooms and other spaces must be not less than— (a) in a Class 5 building— (i) except as allowed in (ii) and (f) — 2.4 m; and (ii) a corridor, passageway, or the like — 2.1 m; and (b) in any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, storeroom, 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 Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
PART F4 – LIGHT AND VENTILATION		
F4.0: Deemed-to-Satisfy Provisions	Informational	Noted
F4.1: Provision of natural light	No natural light provisions required for Class 5 buildings	N/A
F4.4: Artificial Lighting	Lighting to all areas is to comply with AS 1680.0. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
F4.5: Ventilation of rooms	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2-2012. Assume each floor will be mechanically ventilated - Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C

SECTION F: HEALTH AND AMENITY		
F4.8: Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a – • workplace normally occupied by more than one person. Assume all toilets will be mechanically ventilated and open to a corridor. Further assessment required at Crown Certificate Stage	Complies
F4.9: Airlocks	If sanitary compartments are prohibited from opening directly to another room: Class 5 • access must be by an airlock, hallway or other room with a floor area of not less than 1.1m^2 and fitted with self-closing doors at all access doorways; or • the sanitary compartments must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view. Assume all toilets will be mechanically ventilated and open to a corridor. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C

SECTION G: ANCILLARY PROVISIONS		
PART G1 – MINOR STRUCTURES AND COMPONENTS		
NSW G1.101: Provision for cleaning windows	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: • the windows can be cleaned wholly from within the building; or • via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.	CRA – Refer Annexure C
PART G6 – OCCUPIABLE OUTDOOR AREAS		
G6.1: Application of part	There is an occupiable outdoor area to the building with general public access proposed top the level 9 garden terrace area.	Noted
G6.2: Fire hazard properties	(a) Subject to (b), a lining material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element. (b) The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C1.10: (i) *Average specific extinction area.* (ii) Smoke-Developed Index. (iii) Smoke development rate. *Smoke growth rate index* (SMOGRA$_{RC}$). Further assessment required at Crown Certificate Stage for any linings to the rooftop area proposed	CRA – Refer Annexure C
G6.3: Fire Separation	For the purposes of the Deemed-to-Satisfy Provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an occupiable outdoor area, however a *fire wall* cannot be used to separate an occupiable outdoor area into different *fire compartments*. No fire separation required at rooftop level under this clause.	N/A

SECTION G: ANCILLARY PROVISIONS		
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 rooftop terrace area where the general public have access to has compliant egress travel distances with the two exits that serve this level	Complies
G6.5: Construction of exits	For the purposes of the Deemed-to-Satisfy Provisions of Part D2, a reference to a storey or room includes an occupiable outdoor area. The rooftop terrace is served by two fire isolated exits as required	Complies
G6.6: Fire fighting equipment	Except for Clause 7(b)(i) of Specification E1.5, for the purposes of the Deemed-to-Satisfy Provisions of Part E1, a reference to a storey includes an occupiable outdoor area. The rooftop terrace will need to be is served by the fire hydrants located inside the fire isolated stairs as well as an external EWIS speaker system. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
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. One of the lifts connects the rooftop terrace area as required.	Complies
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. Further assessment required at Crown Certificate Stage	CRA – Refer Annexure C
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. For information Only	Noted
G6.10: Fire orders	For the purposes of the Deemed-to-Satisfy Provisions of G4.9, a reference to a storey includes an occupiable outdoor area. Provisions of this clause not applicable to this development	N/A

PART H2 – PUBLIC TRANSPORT BUILDINGS		
H2.1: Application of Part	Informational – Whilst the Station portion below the Site C OSD is considered and assessed as a public transport building under this part - the Commercial office building is not deemed to be a public transport building portion.	Noted

SECTION J: ENERGY EFFICIENCY (Class 5) - To be assessed by separate consultant under separate cover

ANNEXURE C - BCA COMPLIANCE SPECIFICATION

The following BCA matters are to be addressed by specific BCA Design Certificate to be issued by the relevant architectural, services and engineering consultants at the Crown 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. Equipment will be separated in accordance with Clause C2.12 of BCA2019.
7. The main switch room sustaining emergency equipment required to operate in emergency mode, will be separated from the remaining building with construction having an FRL 120/120/120 and provided with self-closing -/120/130 fire doors in accordance with Clause C2.13 of BCA2019.
8. 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.
9. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C3.9 of BCA2019.
10. 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.
11. 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.
12. The lift doors will be -/60/- fire doors complying with AS1735.11 in accordance Clause C3.10 of BCA2019.
13. 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.
14. 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.
15. Fire doors will comply with AS1905.1 and Specification C3.4 of BCA2019.
16. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
17. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
18. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
19. 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.

20. 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.
21. New pedestrian ramps will comply with AS1428.1-2009, Clause D2.10 and Part D3 of BCA2019. The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.
22. The fire-isolated passageways will be in accordance with Clause D2.11 of BCA2019.
23. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586.
24. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS4586 where the edge ledge to a flight below.
25. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
26. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the plant-rooms will comply with AS1657-2018 or Part D2 of BCA2019.
27. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
28. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 of BCA2019.
29. Re-entry doors from the fire-isolated exits will be in accordance with Clause D2.22 of BCA2019.
30. Signage will be provided on fire and smoke doors in accordance with Clause D2.23 of BCA2019.
31. The new works will be accessible in accordance with Clause D3.1 and table D3.1, D3.2, D3.3 of BCA2019, and with AS1428.1-2009, with particular note to door circulation spaces, accessway widths, turning spaces and floor coverings, in accordance with Part D3 of BCA2019.
32. Braille and tactile signage will in accordance with Clause D3.6, and Specification D3.6 of BCA2019.
33. On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, will be clearly marked in accordance with AS1428.1-2009 and Clause D3.12 of BCA2019.
34. The fire control centre will be in accordance with Clauses 2 to 5 of Specification E1.8 or BCA2019.
35. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.
36. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2.
37. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
38. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
39. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS3740.

40. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
41. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS1288 / AS2047.
42. Sanitary facilities will be provided in the building in accordance with Clause F2.3 and Table F2.3 of BCA2019.
43. Accessible sanitary facilities will be provided in the building in accordance with Clause F2.4, Table F2.4 (a) of BCA2019 and AS1428.1-2009.
44. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.
45. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
46. Ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019 as applicable.
47. Water closets and urinals will be located in accordance with Clause F4.8 of BCA2019.
48. The sanitary compartments will be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
49. A safe manner for cleaning of windows located 3 or more storeys above ground level will be provided in accordance with the Work Health & Safety Act 2011 and regulations made under that Act in accordance with NSW G1.101 of BCA2019.
50. 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.
51. Building Fabric and Thermal Construction will be in accordance with Part J1 of BCA2019.
52. Glazing will be in accordance with Part J1 of BCA2019.
53. Building sealing will be in accordance with Part J3 of BCA2019.
54. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2019.

Electrical Services Design Certification:

55. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019 and the Fire Engineering Report prepared by Norman Disney & Young.
56. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS2293.1-2018.
57. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS2293.1-2018.
58. An emergency warning and intercom system (EWIS) will be provided to the building in accordance with Clause E4.9 of BCA2019.
59. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0.

Hydraulic Services Design Certification:

60. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and ASNZS3500.3
61. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS2419.1 as required, and the Fire Engineering Report prepared by Norman Disney & Young.

62. A sprinkler system will be installed in accordance with Clause E1.5 of BCA2019, Specification E1.5 and appropriate part(s) of AS2118-2017 and the Fire Engineering Report prepared by Norman Disney & Young.

63. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS2444-2001.

Mechanical Services Design Certification:

64. 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.

65. Stair pressurisation will be installed in the building in accordance with Table E2.2a of BCA2019 and AS 1668.1-2015 and the Fire Engineering Report prepared by Norman Disney & Young.

66. A zoned smoke control system will be installed in the building in accordance with Table E2.2a, Specification E2.2a of BCA2019 and AS1668.1-2015 and the Fire Engineering Report prepared by Norman Disney & Young.

67. The building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS1668.2-2012.

Structural Engineers Design Certification:

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

- Dead and Live Loads – AS1170.1
- Wind Loads – AS1170.2
- Earthquake actions – AS1170.4
- Masonry – AS3700
- Concrete Construction – AS3600
- Steel Construction AS4100
- Aluminium Construction – AS/NZS1664.1 or 2
- ABCB Standard for Construction of Buildings in Flood Hazard Areas.

69. The FRL's of the structural 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.

70. The lift shaft will have an FRL in accordance with Clause C2.10 and Specification C1.1 of BCA2019.

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

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

73. 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:

74. The lifts throughout the development will be provided with stretcher facilities in accordance with Clause E3.2 of BCA2019 and will be capable of accommodating a stretcher with a patient lying horizontally by proving a clear space not less than 600mm wide x 2000mm long x 1400mm high above the floor level.

75. 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.

76. The emergency lifts will be provided in the building in accordance with Clause E3.4 of BCA2019 and the Fire Engineering Report prepared by Norman Disney & Young.

77. 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.

78. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3.10.

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

80. The lifts will comply with AS1735.12 in accordance with Clause E3.6 of BCA2019.

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