BCA Assessment Report

4 - 10 Inman Road, Cromer

Project:	4 - 10 Inman Road, Cromer
Reference No:	113390-BCA-r1
Date:	23 September 2021
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Document Control

Revision	Date	Description	
113390-BCA-r1	23 September 2021	Preliminary BCA Assessment Report (CC Stage)	
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EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings for the proposed construction of a new warehouse & distribution facility. at 4 - 10 Inman Road, Cromer, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2019, Volume 1 Amendment 1.

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

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

Item	Description	BCA Provision
Performance Solutions Required		
1.	The firewall on ground floor level will not extend through all parts of the building as required by BCA Clause C2.7 (c)	BCA Clause C2.7
2.	Openings in the adjoining fire compartments on basement level and ground floor level have not been provided with protection in accordance with BCA Clause C3.3. Please note where infill panels do not achieve the required FRL the walls are considered an opening in an external wall.	BCA Clause C3.3
3.	The method of protection to openings formed between external columns of the basement level carpark will vary from that prescribed by BCA Clause C3.4	BCA Clause C3.2 & C3.4
4.	Delete the 30-minute insulation required to the roller shutters located on basement level	BCA Clause C3.5
5.	Permit distance to a point of choice to measure up to 47 metres and distance between exits to measure up to 73 m (Fire Engineer to assess maximum permitted travel distance to allow for future fit-outs or racking layout)	BCA Clause D1.4
6.	Permit extended distance between alternate exits up to 75m (Fire Engineer to assess maximum permitted distance between exits to allow for future fit-outs or racking layout	BCA Clause D1.5
7.	Openings will be located within 3m of the path of travel to the road including drainage openings and openings formed by the non-fire-isolated stairways	BCA Clause D2.12
8.	Attack hydrants will be located within 10 metres of the building.	BCA Clause E1.3
9.	Due to multiple building entries, the fire control centre will not be located at the main entry. Furthermore, the control centre will be located greater than 300mm from street level.	BCA Clause E2.2 & Spec E2.2a
Item	**Description**	**BCA Provision**
Non – Fire Performance Solutions Required		
1.	The construction of external walls is such that they will prevent the penetration of water that could cause unhealthy	No DtS Provisions – FP1.4 Performance Provisions Only

Item	Description	BCA Provision
	or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	
Building Code of Australia Compliance Matters to be Addressed		
1.	Sections & 1: 50 detail of the fire wall construction is to be provided for further assessment.	BCA Spec C1.1
2.	It is recommended than an additional door is provided along the eastern boundary providing access to the pedestrian egress path. It is important that consideration be giving to proposed future fit-outs including any proposed racking layouts which may have a significant impact on the design.	BCA Clause D1.4
3.	The exit doors in unit 1 & Unit 2 do not swing in the direction of travel. It is recommended that the architectural drawings are updated to detail all exit doors swinging in the direction of egress	BCA Clause D2.21
Further Information Required		
1.	Detailed FRL drawings and wall schedule is to be provided nominating FRLS	BCA Part C,D & E
2.	A door schedule shall be provided detailing the location of fire doors	BCA Part D
3.	The location of fire hydrants are to be identified in accordance with BCA Clause E1.3	BCA Clause E1.3
4.	The location of hose reels are to be detailed on the architectural drawings in accordance with BCA Clause E1.4	BCA Clause E1.4

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

1 BASIS OF ASSESSMENT

1.1. Location and Description

The building development, the subject of this report, is located at 4 - 10 Inman Road, Cromer located within the Local Government Area of Northern Beaches Council and legally defined as Lot 1 DP1220196.

The proposed development located at 4-10 Inman Road Cromer consists of the construction of a new warehouse & distribution facility. The site contains the following:

- Refurbishment of 2 x storey existing heritage listed building use as an office premises
- Refurbishment of existing heritage listed cottage
- 2 x Warehouses for use as storage and racked goods (separate building); Building 1 and 2
- Associated car park facilities and landscaping around the site;

The subject site is accessible via Inman Drive and South Creek Road.

1.2. 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) incorporating the State variations where applicable. Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority. The BCA is updated generally on a three-yearly cycle, starting from the 1st of May 2016.

1.3. Purpose

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

1.4. Limitations

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

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

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

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

This report does not include, or imply compliance with:

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

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

(c) The provision of disabled access to the subject development has not been assessed against the deemed to satisfy provision of the BCA2019. A separate Access Consultant is to be engaged to address the Access Provisions of the BCA;

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

(e) Work Health and Safety Act 2011;

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

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

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

1.5. Design Documentation

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

2 BUILDING DESCRIPTION

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

2.1. Rise in Storeys (Clause C1.2)

Building 1 has a rise in storeys of three (3)

Building 2 (Units 1-9) has a rise in storeys of three (3)

The Heritage Office has a rise in storeys of three (3)

The Heritage Cottage has a rise in storeys of one (1)

Note: For the purposes of this BCA Assessment Building 1 & 2 are considered a united building in accordance with Part A7.

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
5	Mezzanine Level & Heritage Office	Commercial (offices)
6	Ground Floor (Heritage Cottage)	Cafe
7a	Basement	Carpark
7b/8	Ground Level	Warehouse/Industrial

2.3. Effective Height (Clause A1.0)

Building 1 *has an effective height* of less than 25 metres and more than 12 metres.

Building 2 (Units 1-9) *has an effective height* of less than 25 metres and more than 12 metres.

The Heritage Office *has an effective height* of less than 25 metres and more than 12 metres.

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

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

Building 1 is required to be of Type A Construction.

Building 2 (Units 1-9) is required to be of Type A Construction.

The Heritage Office is required to be of Type B Construction.

The Heritage Cottage is required to be of Type C Construction.

Note: For the purpose of this assessment buildings 1 & 2 are considered a United Building

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

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

Class 7 or 8 (Type A)	Maximum Floor Area	5,500m^2
	Maximum Volume	33,000m^3
Class 6 (Type C)	Maximum Floor Area	2,000m^2

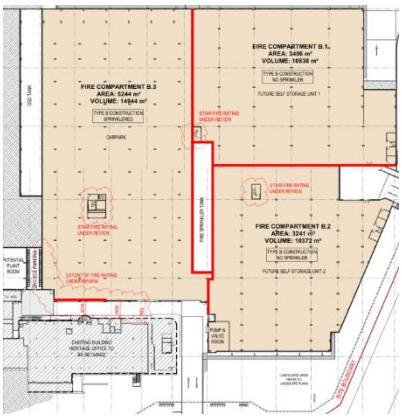
	Maximum Volume	12,000m^3
Class 5 (Type B)	Maximum Floor Area	3,000m^2
	Maximum Volume	18,000m^3
Class 7a	The carpark is to be provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5) and as such there are no maximum floor area or volume limitations for this area.	

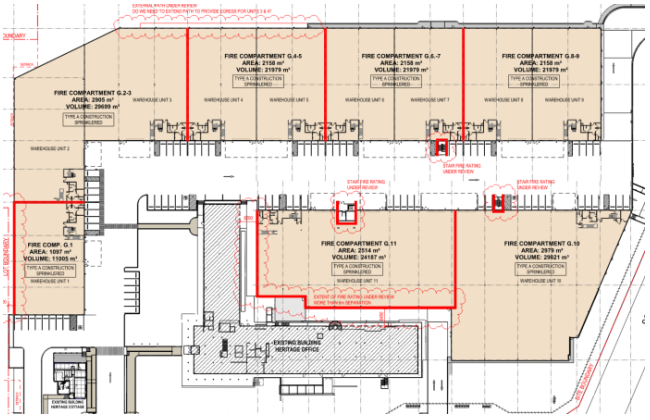
2.6. Fire Compartments

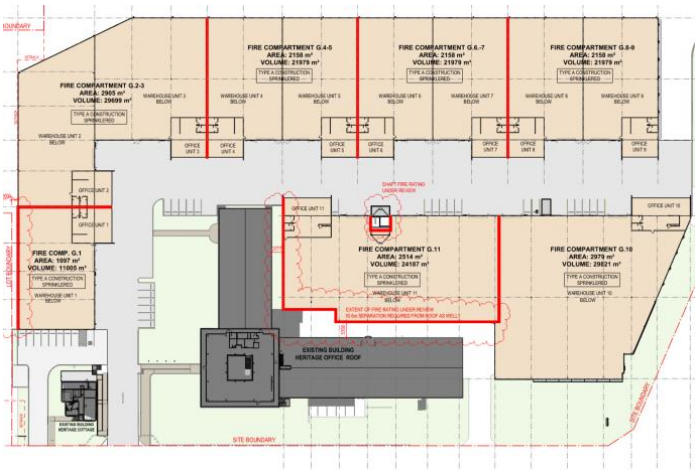
The following *fire compartments* have been assumed:

(a) Fire Compartment B.1
(b) Fire Compartment B.2
(c) Fire Compartment B.3
(d) Fire Compartment G.1
(e) Fire Compartment G/2-3
(f) Fire Compartment G4-5
(g) Fire Compartment G7-8
(h) Fire Compartment G8-9
(i) Fire Compartment G-10
(j) Fire Compartment G-11
(k) Each self-storage unit is considered a single fire compartment.
(l) Heritage office building is considered a single fire compartment.
(m) Existing Heritage Cottage is considered a single fire compartment.

Note: Please refer to Fire Compartment drawings prepared by SBA Architects







2.7. Exits

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

(a) Each Warehouse will be provided with an egress door, discharging to roof as open space in accordance with D2.12.

(b) Warehouse 7-9 has been provided with doors to the rear of the warehouse discharging to the east of the allotment.

(c) Self-storage unit 1 & 2 have been provided with non-fire-isolated stairways discharging to roof as open space and a non-fire-isolated stairway discharging to South Creek Road.

(d) Office Building- Multiple doors discharging to open space

2.8. Climate Zone (Clause A1.0)

The building is located within Climate Zone 5

2.9. Location of Fire-source features

The fire source features for the subject development are:

North: The allotment boundary adjoining Lot 2 DP 1220196

South: The far boundary of South Creek Road

East (Building 2): The allotment boundary adjoining Lot 1 DP1220196

East (Heritage Cottage): Building 2

West (Building 1): The Existing Heritage Office

West (Building 2): The Existing Heritage Cottage

West (Existing Heritage Office): The far boundary of Inman Road

West (Existing Heritage Office): The far boundary of Inman Road

3 MATTERS FOR FURTHER CONSIDERATION

3.1. General

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

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

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

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

3.2. Dimensions and Tolerances

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

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

3.3. Performance Based Design – Performance Solutions

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

Table 2. Performance Solutions

Item	Description	BCA Provision
Performance Solutions Required		
1.	The firewall on ground floor level will not extend through all parts of the building as required by BCA Clause C2.7 (c)	BCA Clause C2.7
2.	Openings in the adjoining fire compartments on basement level and ground floor level have not been provided with protection in accordance with BCA Clause C3.3. Please note where infill panels do not achieve the required FRL the walls are considered an opening in an external wall.	BCA Clause C3.3
3.	The method of protection to openings formed between external columns of the basement level carpark will vary from that prescribed by BCA Clause C3.4	BCA Clause C3.2 & C3.4
4.	Delete the 30-minute insulation required to the roller shutters located on basement level	BCA Clause C3.5
5.	Permit distance to a point of choice to measure up to 47 metres and distance between exits to measure up to 73 m	BCA Clause D1.4

Item	Description	BCA Provision
	(Fire Engineer to assess maximum permitted travel distance to allow for future fit-outs or racking layout)	
6.	Permit extended distance between alternate exits up to 75m (Fire Engineer to assess maximum permitted distance between exits to allow for future fit-outs or racking layout	BCA Clause D1.5
7.	Openings will be located within 3m of the path of travel to the road including drainage openings and openings formed by the non-fire-isolated stairways	BCA Clause D2.12
8.	Attack hydrants will be located within 10 metres of the building.	BCA Clause E1.3
9.	Due to multiple building entries, the fire control centre will not be located at the main entry. Furthermore, the control centre will be located greater than 300mm from street level.	BCA Clause E2.2 & Spec E2.2a
Item	**Description**	**BCA Provision**
Non – Fire Performance Solutions Required		
1.	The construction of external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	No DtS Provisions – FP1.4 Performance Provisions Only

3.4. Matters To Be Addressed At Construction Certificate Stage

3.4.1. BCA Clause C1.9 Non-Combustible Building Elements (Façade Construction)

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

(a) In a building required to be of Type A 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 5, 6, 7 or 8 building if the shaft connects more than 2 storeys.

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

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

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

(i) Plasterboard.

(ii) Perforated gypsum lath with a normal paper finish

(iii) Fibrous-plaster sheet.

(iv) Fibre-reinforced cement sheeting.

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

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

(vii) Bonded laminated materials where—

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

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

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

Currently the external façade construction has been nominated on the plans as follows:

- Northern elevation – ALC-1,2 &3_Solid Aluminium Cladding -Mondoclad– further assessment required as design progresses to ensure *non-combustible* wall construction complies with above.
- Southern elevation – ALC-1,2 &3_Solid Aluminium Cladding -Mondoclad – further assessment required as design progresses to ensure *non-combustible* wall construction complies with above.

- Eastern elevation – ALC-1,2 &3_Solid Aluminium Cladding -Mondoclad ALC-1,2 &3_Solid Aluminium Cladding -Mondoclad – further assessment required as design progresses to ensure *non-combustible* wall construction complies with above.
- Western elevation – ALC-1,2 &3_Solid Aluminium Cladding -Mondoclad further assessment required as design progresses to ensure *non-combustible* wall construction complies with above.

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

It should be noted that perimeter walls of basement (below ground) floor levels are also deemed to be external walls and the above provisions apply.

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

3.4.2. BCA Clause C2.7- Separation By Fire Walls & BCA Spec C1.1- Fire Protection For A Support Of Another Part

Detailed architectural drawings are required to be provided with regards to the construction of the fire walls separating adjoining fire compartments for further assessment.

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.

Where internal columns have been constructed which support the fire wall separating compartment the Structural Engineer is to factor into the design that a failure of the element on one side does not affect the fire performance of the wall.

Alternatively, structural support is to be provided on either side of the wall.

3.4.3. BCA Clause D1.4- Exit Travel Distance

It is recommended than an additional door is provided along the eastern boundary providing access to the pedestrian egress path.

It is important that through the Fire Engineering process consideration is giving to future fit outs or racking plans and worst case scenario is assessed.

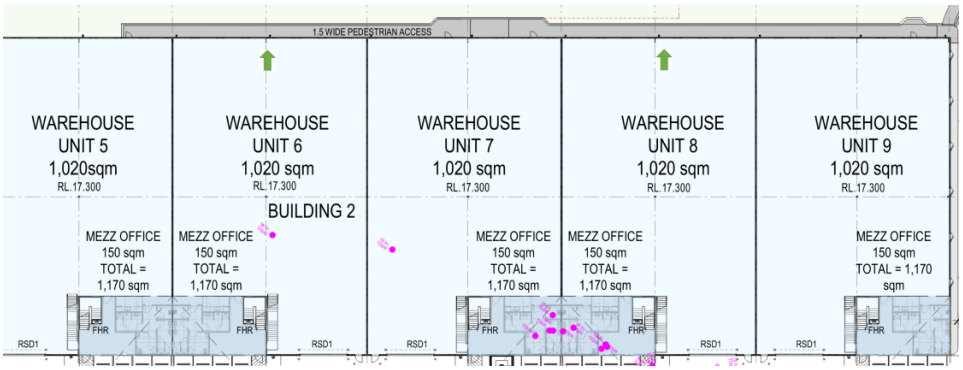


Figure 1-Additional Egress Door

3.4.4. BCA Clause E1.3- Fire Hydrants

It is recommended that the hydrant booster is located closer to the allotment boundary to have a minimum set back of 10 m from the adjoining building to comply with the requirements of AS2419.1-2005

Furthermore, a hardstand is required to be provided within 20 metres of the pump room. Spatial requirements of the hard stand shall be in accordance with the below diagram.

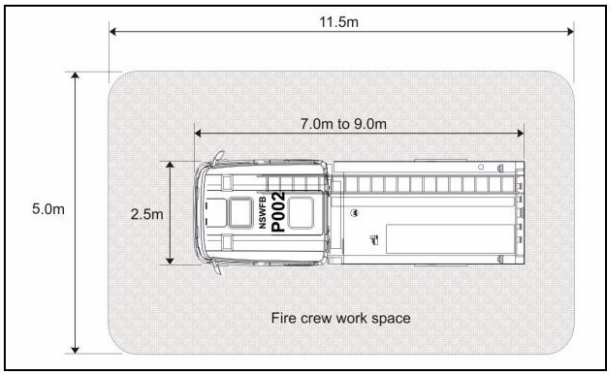


Figure 1 Minimum fire crew work space of a hardstand area

Figure 2- Hardstand

The pump room is located adjoining a non-sprinkler protected part of the building and is required to be protected with walls aching an FRL 240/240/240 and doors achieving an FRL -/60/30

Sufficient details have not been provided at this stage in relation to water storage. It is recommended that the Hydraulic consultant undertake further investigation to establish if sufficient pressures and flows can be provided.

3.4.5. BCA Clause E1.8- Fire Control Centre

As the building has a floor area which exceeds 18,000 m2 a fire control centre shall be provided in accordance with BCA Clause E1.8.

fire control centre must—

(a) provide an area from which fire-fighting operations or other emergency procedures can be directed or controlled; and

(b) contain controls, panels, telephones, furniture, equipment and the like associated with the required fire services in the building; and

(c) 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.

The architectural drawings are to be updated to denote the location of the fire control centre.

ANNEXURE A DESIGN DOCUMENTATION

Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 3. Architectural Plans

Architectural Plans Prepared by SBA Architects			
Title	**Drawing Number**	**Revision**	**Date**
Basement Plan	GA110	P3	26/08/21
Ground Floor/Site Plan	GA200	P3	26/08/21
Mezzanine Level Overall	GA210	P3	26/08/21
Roof Plan Overall	GA220	P3	26/08/21
Warehouse Elevations-Sheet 1	GA301	P1	29/06/21
Warehouse Elevations-Sheet 2	GA302	P1	26/08/21
Warehouse Elevations-Sheet 2	GA303	P1	26/08/21
Office Type A - Elevations And Section	GA310	P1	26/08/21
Office Type B -Elevations And Sections	GA311	P1	26/08/21
Heritage Office Elevations	GA320	P2	16/07/21
Heritage Cottage Cafe -Elevations And Sections	GA325	P2	26/08/21
Overall Sections -Sheet 1	GA350	P1	29/06/21
Overall Sections -Sheet 2	GA351	P1	29/06/21
Overall Sections -Sheet 3	GA352	P1	29/06/21
Heritage Building -Sections	GA360	P1	16/07/21
Fire Compartmentation Plan - Basement Level	GA901	P1	15/09/21
Fire Compartmentation Plan - Ground Floor	GA902	P1	15/09/21
Fire Compartmentation Plan - Mezzanine Level	GA903	P1	15/09/21

ANNEXURE B ESSENTIAL SERVICES

Annexure B - Essential Services

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

Table 4. Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Fire doors	**BCA2019 C2.12** (Separation of Equipment) **BCA2019 C3.4** (Acceptable methods of Protection) **BCA2019 C3.5** (Doors in Fire Walls) AS1735.11- 1986 **BCA2019 C3.13** (Opening in Shafts) Spec C3.4 AS1905.1: 2015 **& proposed Fire Engineering Performance Solution Report**
2.	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
3.	Fire shutters	**BCA2019 C3.4** (Acceptable methods of protection) **BCA2019 Spec. C3.4** AS1905.2-2005 **& proposed Fire Engineering Performance Solution Report**
4.	Lightweight construction	**BCA2019 C1.1, Spec. C1.1** **BCA2019 C1.8, Spec C1.8** **BCA2019 C2.7** (Fire Walls) **BCA2019 C2.8** (Separation – same storey) **BCA2019 C2.12** (Separation of Equipment) AS1530.4:2014
General		
5.	Portable fire extinguishers	**BCA2019 E1.6** AS 2444–2001

Item	Essential Fire and Other Safety Measures	Standard of Performance
6.	Fire blankets	AS 2444–2001
General Egress		
7.	Automatic fail safe devices > Auto open Sliding Exit doors > Break Glass release	**BCA2019 D2.21** (Operation of Latches) AS 1670.1:2018 (Fire)
8.	Required Automatic Doors	**D2.19** (Doorways and Doors)
9.	Swing of Exit Doors	**D2.20** (Swinging Doors)
10.	Warning & operational signs	**BCA2019 D2.23 (**Signs on Fire Doors) **BCA2019 D3.6** (Braille Exit Signs) (Note: E4.5 (Exit Signs)) **BCA2019 E3.3** (Lift Signs)
Lifts		
11.	Access to Lift Pits > Located at lowest level or if >3m provided through an access door	**BCA2019 D1.17** (Access to Lift Pits) 'DANGER LIFT WELL – ENTRY OF UNAUTHORISED PERSONS PROHIBITED – KEEP CLEAR AT ALL TIMES'
Electrical Services		
12.	Automatic fire detection & alarm: > Incorporating a thermal detection system in the basement carpark **Note:** if there is a SSISEP or EWIS applies different dB(A) i.e. At bedheads not SOU doors.	**BCA2019 E2.2**, NSW Table E2.2a, **Spec E2.2a** **Spec E2.2a** - Clause 4 (Smoke detection system) **Spec E2.2a** - Clause 7 (BOWS) AS 1670.1:2018 (Fire) – Section 4 and 5 (Detectors) AS 1670.4:2018 (EWIS)
13.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1:2018
14.	Exit signs	**BCA2019 E4.5** (Exit Signs) **BCA2019 E4.6** (Direction Signs) **BCA2019 E4.8** (Design and Operation - Exits) AS/NZS 2293.1:2018
Hydraulic Services		
15.	Automatic fire suppression systems > General Sprinklers	**BCA2019 E1.5** AS 2118.1:2017 (Sprinklers)

Item	Essential Fire and Other Safety Measures	Standard of Performance
	> Combined Sprinklers and Hydrant	AS 2118.6:2012 (Combined Sprinklers/Hydrant)
16.	Fire hydrant systems > NSW Storz Couplings	**BCA2019 E1.3** **BCA2019 C2.12 (Separation of Equipment)** AS 2419.1:2005 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections' **& proposed Fire Engineering Performance Solution Report**
17.	Hose reel systems	**BCA2019 E1.4** AS 2441:2005
18.	System Monitoring Monitoring Required for any: > Any Sprinkler System	**BCA2019 E1.5, Spec E1.5** AS2118.1-2017 AS 1670.3:2018
Mechanical Services		
19.	Fire dampers	**BCA2019 E2.2, Spec E2.2a, Spec E2.2b** **BCA2019 C3.15** AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
20.	1. Mechanical air handling systems 2. Mechanical ventilation to carpark.	**BCA2019 E2.2, Table E2.2a** AS 1668.1:2015 (Amdt 1) **Note: 5.5.3 Override control** To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point. **Note:** Signage should be located at the car park entry indicating the location of the control switches.
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—		

Item	Essential Fire and Other Safety Measures	Standard of Performance

(i) ((be designed and installed to operate as a smoke control system in accordance with AS 1668.1:2015; or

(ii)

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

(B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1:2018; and

for the purposes of this provision, each *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 1668.1:2015 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.

A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS 1668.1:2015 systems that are provided for zone smoke control and automatic air pressurisation for fire-isolated exits.

Performance Solutions

	Description of Performance Solution	DTS Provision
1.	The firewall on ground floor level will not extend through all parts of the building as required by BCA Clause C2.7 (c)	BCA Clause C2.7
2.	Openings in the adjoining fire compartments on basement level and ground floor level have not been provided with protection in accordance with BCA Clause C3.3. Please note where infill panels do not achieve the required FRL the walls are considered an opening in an external wall.	BCA Clause C3.3
3.	The method of protection to openings formed between external columns of the basement level carpark will vary from that prescribed by BCA Clause C3.4	BCA Clause C3.2 & C3.4
4.	> Delete the 30-minute insulation required to the roller shutters located on basement level	BCA Clause C3.5
5.	Permit distance to a point of choice to measure up to 47 metres and distance between exits to measure up to 73 m > (Fire Engineer to assess maximum permitted travel distance to allow for future fit-outs or racking layout)	BCA Clause D1.4
6.	Permit extended distance between alternate exits up to 75m (Fire Engineer to assess maximum permitted distance between exits to allow for future fit-outs or racking layout	BCA Clause D1.5
7.	Openings will be located within 3m of the path of travel to the road including drainage openings and openings formed by the non-fire-isolated stairways	BCA Clause D2.12

Item	Essential Fire and Other Safety Measures	Standard of Performance
8.	Attack hydrants will be located within 10 metres of the building.	BCA Clause E1.3
9.	Due to multiple building entries, the fire control centre will not be located at the main entry. Furthermore, the control centre will be located greater than 300mm from street level.	BCA Clause E2.2 & Spec E2.2a

ANNEXURE C FIRE RESISTANCE LEVELS

Annexure C - Fire Resistance Levels

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

Type A Construction

Table 5. Type A Construction

Item	Class 7b	Class 5& 7a
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*	240/240/240 240/240/180 240/180/90	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*	-/240/240 -/240/180 -/-/-	-/120/120 -/90/90 -/-/-
External Columns - Loadbearing - Non-loadbearing	240/-/- -/-/-	120/-/- -/-/-
Common Walls & Fire Walls	240/240/240	120/120/120
Stair and Lift Shafts required to be fire-resisting - Loadbearing - Non-loadbearing	240/120/120 -/120/120	120/120/120 -/120/120
Internal walls bounding sole occupancy units - Loadbearing - Non-loadbearing	240/-/- -/-/-	120/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: - Loadbearing - Non-loadbearing	240/-/- -/-/-	120/-/- -/-/-
Ventilating, pipe, garbage and like shafts: - Loadbearing - Non-loadbearing	240/120/120 -/120/120	120/90/90 -/90/90
Other loadbearing internal walls, beams trusses and columns	240/-/-	120/-/-
Floors	240/240/240	120/120/120
Roofs[1]	240/90/60	120/60/30

[1] The roof need not comply with any FRL's due to the sprinkler protection of the building (part).

Type B Construction

Table 6. Type B Construction

Item	Class 5
Loadbearing External Walls - Less than 1.5m to a *fire- source feature* - 1.5 – less 3m from *fire- source feature* - 3 – less 9m from *a fire- source feature* - 9 – less 18m from a *fire- source feature* - 18m or more from a *fire- source feature*	120/120/120 120/90/60 120/30/30 120/30/- -/-/-
Non-Loadbearing External Walls - Less than 1.5m to a *fire- source feature* - 1.5 – less 3m from *fire- source feature* - 3m or more from a *fire- source feature*	-/120/120 -/90/60 -/-/-
Loadbearing External Columns - Less than 18m - 18m or more	120/-/- -/-/-
Non-Loadbearing External Columns	-/-/-
Common Walls & Fire Walls	120/120/120
Stair and Lift Shafts required to be fire-resisting - Loadbearing Stair & Lift shaft - Non-loadbearing Stair shaft only	120/120/120 -/120/120
Internal walls bounding sole occupancy units - Loadbearing - Non-loadbearing	120/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: - Loadbearing - Non-loadbearing	120/-/- -/-/-
Other loadbearing internal walls and columns	120/-/-
Roofs	-/-/-

Type C Construction

Table 7. Type C Construction

Item	Class 6
External Walls - Less than 1.5m to a *fire-source feature* - 1.5 – less 3m from *fire-source feature* - 3m or more from a *fire-source feature*	 90/90/90 60/60/60 -/-/-
External Column not incorporated in an external wall - Less than 1.5m to a fire source feature - 1.5 – less 3m from fire source feature; - 3m or more from a fire source feature	 90/-/- 60/-/- -/-/-
Common Walls and Fire Walls	90/90/90
Internal walls bounding sole occupancy units	-/-/-
Internal walls bounding public corridors, hallways and the like	-/-/-
Internal walls bounding a stair if required to be fire rated	60/60/60

Note: An external wall that is required to have an *FRL* need only be tested from the outside to satisfy the *FRL* requirement.

ANNEXURE D DETAILED BCA 2019 ASSESSMENT

Annexure D – Detailed BCA 2019 Assessment

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

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

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

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

Deemed to Satisfy Clause Assessment

Table 8. Deemed to Satisfy Clause Assessment

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

Section C: Fire Resistance				
Part C1 – Fire Resistance and Stability				
C1.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C1.1:	Type of construction required	The minimum Type of fire-resisting construction of a building must be determined in accordance with Table C1.1.	Building 1 is required to be of Type A Construction. Building 2 is required to be of Type A Construction. The heritage office is required to be of Type B Construction. The heritage cottage is required to be of Type C Construction. Refer to Specification C1.1 requirements at the end of this Section.	CRA – Refer Annexure F
C1.2:	Calculation of rise in storeys	The rise in storeys is the sum of the greatest number of storeys at any part of the external walls of the building and any storeys within the roof space— (a) above the finished ground next to that part; or (b) if part of the external wall is on the boundary of the allotment, above the natural ground level at the relevant part of the boundary. A storey is not counted if— it is situated at the top of the building and contains only heating, ventilating or lift equipment, water tanks, or similar service units or equipment	Building 1 has a rise in storeys of three (3) Building 2 (Units 1-9) has a rise in storeys of three (3) The Heritage Office has a rise in storeys of three (3) The Heritage Cottage has a rise in storeys of one (1)	Noted
C1.3:	Buildings of multiple classification	Informational	The building contains multiple classifications including Class 5,6 7a,7b and or 8	Noted
C1.4:	Mixed Types of construction	A building may be of mixed Types of construction where it is separated in accordance with C2.7 and the Type of	As Buildings 1 & 2 are not separated by a fire wall in accordance with C2.7(b), mixed type of construction may not be applied.	N/A

Section C: Fire Resistance			
	construction is determined in accordance with C1.1 or C1.3.		
C1.5: Two Storey Class 2, 3 or 9c buildings	N/A	N/A	N/A
C1.6: Class 4 Parts of building	N/A	N/A	N/A
C1.7: Open spectator stands and indoor sports stadium	N/A	N/A	N/A
C1.8: Lightweight construction	Lightweight construction used in a fire-rated application is to comply with Specification C1.8.	Specific details regarding the location and use of lightweight construction has not been provided at this stage. Where lightweight construction is installed to provide a fire resistance level to building elements it shall be installed identical to the prototype that was submitted to the Standard Fire Test. It is recommended that detailed architectural drawings including BCA Specification be provided to demonstrate compliance at Construction Certificate Stage	CRA – Refer Annexure F
C1.9: Non-combustible building elements	(a) In a building required to be of Type A or B construction, the following building elements and their components must be *non-combustible*: (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (ii) The flooring and floor framing of lift pits. (iii) Non-loadbearing internal walls where they are required to be fire-resisting. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot	At this stage specific details with regards to the external wall components have not been provided. Specific details or test reports to demonstrate compliance with external cladding and other attachments have not been provided at this stage. Further assessment of the architectural drawings and specification is required at Construction Certificate stage.	**FI – Refer Part 3.5**

Section C: Fire Resistance			
	products of combustion, that is non-loadbearing, must be of *non-combustible* construction in— (i) a building required to be of Type B construction, subject to C2.10, in— (A) 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		

Section C: Fire Resistance			
	(B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and (C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.		
C1.10: Fire hazard properties	Fire hazard properties of internal linings, materials and assemblies must comply with C1.10 of the BCA and Specification C1.10, including floor, wall and ceiling linings, air-handling ductwork, lift cars, insulation, *sarking-type materials* and attachments, or be considered *non-combustible*.	Specific details with regards to the linings of internal floors, walls and ceilings have not been provided at this stage. The following is to be achieved; <u>Floor Linings</u> A critical radiant flux of 1.2 kW/m2 <u>Wall & ceiling Linings</u> Fire Isolated Exits- Group 1 Public Corridors; Group 1, 2 or 3 <u>Ceilings</u>; Fire Isolated Exits- Group 1 Public Corridors; Group 1, 2 or 3 Rigid and flexible ductwork must comply with the fire hazard properties set out in AS 4254.1and AS 4254.2. A BCA specification and schedule of proposed materials and finishes is to be provided for further assessment.	CRA – Refer Annexure F
C1.11: Performance of external walls in fire	Concrete external walls that could collapse as complete panels (e.g. tilt-up and pre-cast concrete), in a building having a rise in storeys of not more than 2, must comply with Specification C1.11.	Building 1& 2 have a rise in storeys of more than two (2) and therefore these provisions of this clause do not apply	N/A

Section C: Fire Resistance			
C1.12: Non-combustible materials	Clause now deleted and relocated to C1.9.	Noted	Noted
C1.13: Fire-protected timber: Concession	N/A	N/A	N/A
C1.14: Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be *non-combustible* unless it is one of the following: (a) An ancillary element that is *non-combustible*. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grille not more than 2 m² in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and (iii) does not extend beyond one fire compartment; and (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—	At this stage details of ancillary items that may be attached to the external wall have not been provided. In particular details should be provided for the following; > Awning, sunshade, canopy, blind or shading hood > Signage fixed to the external wall. > Louvres Further assessment of the Construction Certificate documentation is required.	CRA – Refer Annexure F

Section C: Fire Resistance			
	(i) meets the relevant requirements of Table 4 of Specification C1.10 as for an internal element; and (ii) serves a storey— (A) at ground level; or (B) immediately above a storey at ground level; and (iii) does not serve an *exit*, where it would render the *exit* unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) A paint, lacquer or a similar finish. (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k).		
Part C2 – Compartment and Separation			
C2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C2.1: Application of Part	Informational - C2.2, C2.3 and C2.4 do not apply to a carpark provided with a sprinkler system complying with Specification E1.5 (other than an FPAA101D or FPAA101H system), an open-deck carpark or an open spectator stand.	Noted	Noted
C2.2: General floor area and volume limitations	The size of *fire compartments* in the building must not exceed that specified in Table C2.2.	The fire compartment sizes do not exceed the limitations prescribed by BCA Clause C2.2 Please refer to Fire Compartment drawings prepared by SBA Architects P1 dated 15.09.21	**Complies**

Section C: Fire Resistance				
C2.3:	Large isolated buildings	N/A	N/A	N/A
C2.4:	Requirements for open spaces and vehicular access	N/A	N/A	N/A
C2.5:	Class 9a and 9c Buildings	N/A	N/A	N/A
C2.6:	Vertical separation of openings in external walls	Where the vertical projection of an opening in an external wall falls no further than 450 mm outside an opening in the storey next below, the openings must be provided with vertical separation complying with Clause C2.6, that is: > They must be protected with a 900mm high (*FRL* 60/60/60) spandrel extending at least 600mm above the separating slab, or > They must be provided with a 1.1m horizontal projection (*FRL* 60/60/60) also extending at least 450mm either side of the openings. The above does not apply to openings within the same stairway. For the purposes of this clause, opening means that part of the external wall of a building that does not have an *FRL* of 60/60/60 or greater.	It is proposed to provide the building with a sprinkler protection system other than within fire compartments B.1 & B.2, therefore the concessions available via this clause may be applied to ground level and mezzanine level as the "building part" is sprinkler protected. Please refer to Fire Compartment drawings prepared by SBA Architects P1 dated 15.09.21	**Complies**
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-*	Each warehouse on ground floor will be considered a single fire compartment and therefore required to be separated from the adjoining warehouse (compartment) via fire wall achieving an FRL 240. 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	CRA – Refer Annexure F

Section C: Fire Resistance			
	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. **Separation of *fire compartments*** – A part of a building separated from the remainder of the building by a *fire wall* may be treated as a separate *fire compartment* if it is constructed in accordance with this clause and the *fire wall* extends to the underside of – > a floor having an *FRL* required for a *fire wall*; or	unless the required fire resisting performance of the fire wall is maintained. The fire wall is proposed not to extend beyond the first-floor mezzanine level and into the on-grade carpark and the construction of the fire wall will be addressed via Fire Engineering Performance Solution. Where an element provides lateral support and failure of the element may impact the fire performance of the wall said element shall be protected in accordance with Spec C1.1 Clause 2.2 and be provided with an FRL similar to that required of the fire wall (FRL 240) A fire wall should not collapse because it is supported by another building element on the other side of the wall. A 1:50 detail of the fire wall detail particular at the junction with the roof is to be provided for further assessment. Structural Engineer to provide structural drawings and design certification specifically referencing BCA Clause C2.7 & Spec C1.1 Clause 2.2	**PS-Refer to Part 3.3** **FI-Refer to Part 3.4**

Section C: Fire Resistance			
	> the roof covering.		
C2.8: Separation of classifications in the same storey	Where a storey has different classifications located alongside one another: > each building element in that storey must have the higher *FRL* prescribed in Specification C1.1 for that element for the classifications concerned; or > the parts must be separated in that storey by a *fire wall* having the higher *FRL* prescribed in Table 3; or > where one part is a carpark complying with Table 3.9, 4.2 or 5.2 of Specification C1.1, the parts may be separated by a *fire wall* complying with the appropriate Table.	Basement level 1 contains Class 7a parts and Class 7b/8 parts. The fire wall separating the classification is required to be constructed to achieve the higher *FRL* prescribed in Specification C1.1(FRL 240). Detailed architectural drawings including wall schedule denoting FRL requirements are to be submitted for further assessment.	CRA – Refer Annexure F
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. 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.	The carpark (part) is required to be provided with a ceiling that achieves a minimum FRL 120/120/120. However, as the floor between the warehouse and storage facility is required to achieve an FRL 240/240/240 for consistency it is recommended that the slab to the carpark and self-storage area be provided with FRL 240.	CRA – Refer Annexure F
C2.10: Separation of lift shafts	N/A	As the lift shaft does not connect more than three storeys, the shaft is not required to be fire-isolated.	N/A
C2.11: Stairways and lifts in one shaft	N/A	N/A	N/A
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	It is assumed that all equipment within the development is provided with battery backup and therefore the provisions of this clause are not applicable.	N/A

Section C: Fire Resistance			
	> emergency generators used to sustain emergency equipment operating in the emergency mode; or > central smoke control plant; or > boilers; or > a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more. Equipment need not be separated in if the equipment comprises: > smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or > stair pressurizing equipment installed in compliance with the relevant provisions of AS 1668.1:2015; or > a lift installation without a machine room; or > equipment otherwise adequately separated from the remainder of the building. Separation must be by construction having an *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.		
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.	An existing substation is located in the basement level of the heritage office building. There are no proposed works to this area and at this stage no required upgrades as part of the Development Consent.	Noted

Section C: Fire Resistance			
	> A main switchboard which sustains emergency equipment operating in the emergency mode must be fire separated from any other part of the building by construction having an *FRL* of not less than 120/120/120 and have the doorway fitted with self-closing fire door having an *FRL* of not less than –/120/30. > Any electrical conductors located within the building that supply a substation or main switchboard for emergency equipment must comply with BCA clause C2.13. > Emergency equipment switchgear must be separated from non-emergency equipment switchgear by metal partitions designed to minimize the spread of a fault from the non-emergency equipment switchgear. > Emergency equipment includes but is not limited to the following: o fire hydrant booster pumps; o sprinkler pumps; o hose reel pumps; o air-handling systems designed to exhaust and control the spread of smoke; o emergency lifts; o control and indicating equipment; and o sound systems and intercom systems for emergency purposes. Note: Consideration should be given to the location of Electrical Substations on adjoining sites in regards to proximity to Fire Hydrant Boosters being within 10.0m	Therefore, as assessment of the emergency supply system has not been undertaken.	

Section C: Fire Resistance			
C2.14: Public corridors in Class 2 and 3 Buildings	N/A	N/A	N/A
Part C3 – Protection of Openings			
C3.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
C3.1: Application of Part	(a) The Deemed-to-Satisfy Provisions of this Part do not apply to– (i) Control joints, weep holes and the like in external walls of masonry construction and joints between panels in external walls of pre-cast concrete panel construction if, in all cases they are not larger than necessary for the purpose; and (ii) Non-combustible ventilators for subfloor or cavity ventilation, if each does not exceed 45 000 mm2 in face area and is spaced not less than 2 m from any other ventilator in the same wall; and (iii) Openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like; and (iv) In a carpark– (A) Service penetrations through; and (B) Openings formed by a vehicle ramp in, (aa) A floor other than a floor that separates a part not used as a carpark, providing the connected floors comply as a single fire compartment for the purposes of all other requirements of the	Noted	Noted

Section C: Fire Resistance				
		Deemed-to-Satisfy Provisions of Sections C, D and E. (b) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings in building elements required to be fire-resisting include doorways, windows (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL. (c) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings, other than those covered under (a)(iii), between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the building, are deemed to be openings in an external wall.		
C3.2:	Protection of openings in external walls	Openings in an external wall that is required to have an *FRL* must be protected in accordance with C3.4 if the distance between the opening and the *fire-source feature* is: > less than 3 m from a side or rear boundary; or > less than 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or > less than 6 m from another building on the allotment that is not Class 10; and if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand. Where wall-wetting sprinklers are used, they must be located externally.	The western elevation of the basement carpark contains openings which are located within 6m of the adjoining heritage office located within the same allotment. Please note that openings formed between columns are considered openings in external walls and are required to be protected in accordance with BCA Clause C3.2 & C3.4 The openings on this elevation exceed 1/3 of the area of the external wall of the storey in which and technically cannot comply with the provisions of BCA Clause C3.2. The Fire Engineer is to address openings in the external wall of the basement carpark adjoining the heritage office via Performance Solution Report.	**PS-Refer to Part 3.3**

<table>
<tr><th colspan="4">Section C: Fire Resistance</th></tr>
<tr>
<td>C3.3:</td>
<td>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>
</td>
<td>Opening in adjoining fire compartments have not been protected in accordance with BCA Clause C3.3.

Please note that where infill panels are installed which do not achieve an FRL these are considered openings in an external wall.</td>
<td>PS-Refer to Part 3.3</td>
</tr>
<tr>
<td>C3.4:</td>
<td>Acceptable methods of protection</td>
<td>Where protection is required, openings must be protected as follows:
<u>Doorways:</u>
(i) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or
(ii) –/60/30 fire doors that are self-closing.
<u>Windows:</u>
(i) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or</td>
<td>Please refer to discussion within BCA Clause C3.2</td>
<td>Noted</td>
</tr>
</table>

Section C: Fire Resistance				
		(ii) –60/– fire windows that are automatically closing or permanently fixed in the closed position; or (iii) –/60/– automatic closing fire shutters. Other openings: (i) Excluding voids – internal or external wall-wetting sprinklers; or (ii) Construction having an *FRL* not less than –/60/– Fire doors, fire windows and fire shutters must comply with BCA Specification C3.4.		
C3.5:	Doorways in fire walls	Doorways in the fire walls must be protected by a self-closing fire door that achieves an *FRL* of not less than that required by Specification C1.1 for the *fire wall* except that each door must have an insulation level of at least 30.	It is proposed to delete the 30-minute insulation rating required to the roller shutter for Unit 1 Vehicle Entry. It is assumed all other doors located in fire walls can achieve the required FRL -240/30 A door schedule is required for further assessment.	**PS-Refer to Part 3.3**
C3.6:	Sliding fire doors	N/A	N/A	N/A
C3.7:	Protection of doorways in horizontal exits	A doorway that is part of a horizontal exit must be protected by a single fire door that has an FRL of not less than that required by Specification C1.1 for the fire wall except that the door must have an insulation level of at least 30, or by one of the other options in Clause C3.7.	Horizontal exits are not proposed within the building	CRA – Refer Annexure F
C3.8:	Openings in fire-isolated exits	N/A	N/A	N/A
C3.9:	Service penetrations in fire-isolated exits	N/A	N/A	N/A
C3.10:	Openings in fire-isolated lift shafts	N/A	N/A	CRA – Refer Annexure F

Section C: Fire Resistance			
C3.11: Bounding Construction: Class 2, 3 and 4 Buildings	N/A	N/A	N/A
C3.12: Openings in floors and ceilings for services	Where services pass through a floor which is required to achieve an *FRL* or a ceiling required to have a *resistance to the incipient spread of fire*, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15. Where a service passes through a floor which is required to be protected by a *fire-protective* covering, the penetration must not reduce the fire performance of the covering.	Where services pass through the floor and ceilings provided with an FRL the service should be protected in accordance with C3.12. The service, building element and any protection method at the penetration are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the required FRL or resistance to the incipient spread of fire; or differ from a prototype assembly of the service, building element and protection method in accordance with Section 4 of AS 4072.1. All service drawings including Mechanical, Electrical, Hydraulic & Fire are to be submitted for further assessment at CC stage.	CRA – Refer Annexure F
C3.13: Openings in shafts	N/A	N/A	N/A
C3.15: Openings for service installations	Where services pass through an element which is required to achieve an *FRL* (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15. **Note:** contractors should check with PCA to confirm compliance with their proposed fire stopping method.	Where services pass through building elements provided with an FRL, the service should be protected in accordance with C3.15. The service, building element and any protection method at the penetration— are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the required FRL or resistance to the incipient spread of fire; or differ from a prototype assembly of the service, building element and protection method in accordance with Section 4 of AS 4072.1.	CRA – Refer Annexure F

Section C: Fire Resistance				
			All service drawings including Mechanical, Electrical, Hydraulic & Fire Services are to be provided for further assessment at CC stage	
C3.16:	Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4:2014 to achieve the required *FRL*.	Where required, construction joints to be protected in accordance with clause C3.16.	CRA – Refer Annexure F
C3.17:	Columns protected with lightweight construction to achieve an 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.	Specific details regarding lightweight construction have not been provided at this stage. It is assumed the building can readily comply. Detailed architectural drawings and BCA specification are required to be submitted to demonstrate compliance.	CRA – Refer Annexure F
Specification C1.1 – Fire-Resisting Construction				
2.0:	General Requirements	Informational	Noted	Noted
2.1:	Exposure to fire-source features	A building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the *fire-source feature*, or vertical projection of the feature, is not obstructed by another part of the building that– (iii) has an *FRL* of not less than 30/–/–; and (iv) is neither transparent nor translucent.	Informational	Noted
2.2:	Fire protection for a support of another part	Where a part of a building required to have an *FRL* depends upon direct vertical or lateral support from another part to maintain its *FRL*, that supporting part must have an *FRL* not less than that required by other provisions of this Specification; and if located within the same *fire compartment* as the part it supports have an	Where internal columns have been constructed which support the fire wall separating compartment the Structural Engineer is to factor into the design that a failure of the element on one side does not affect the fire performance of the wall.	**FI- Refer to Part 3.4**

Section C: Fire Resistance				
		FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	Alternatively, structural support is to be provided on either side of the wall.	
2.3:	Lintels	A lintel must have the FRL required for the part of the building in which it is situated unless it does not contribute to the support of a fire door, fire window or fire shutter and meets the requirements of Spec C1.1 clause 2.3 (a) & (b).	Structural Engineer is to provide design certification and consider the requirements of spec C1.1.	CRA – Refer Annexure F
2.4:	Attachments not to impair fire-resistance	The method of attaching or installing a finish, lining, ancillary element or service installation to a building element must not reduce the fire-resistance of that element to below that required.	Structural Engineer is to provide design certification and consider the requirements of spec C1.1.	CRA – Refer Annexure F
2.5:	General concessions	> Steel columns (1 or 2 storey buildings) > Structures on roofs 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.	The following concessions may be applied; Steel columns — A steel column, other than one in a fire wall or common wall, need not have an FRL in a building that contains only 1 storey. Please note, this may only be applied where the structural column does not provide lateral support to the firewall separating fire compartments. 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.	CRA – Refer Annexure F

Section C: Fire Resistance				
			Other service units that are *non-combustible* and do not contain flammable or combustible liquids or gases.	
2.6:	Mezzanine floors: Concession	N/A	The “mezzanine” levels do not meet the definition of a mezzanine and therefore the concessions may not be applied.	N/A
2.7:	Enclosure of shafts	N/A	N/A	N/A
2.8:	Carparks in Class 2 and 3 Buildings	N/A	N/A	N/A
2.9:	Residential Aged Care building: Concession	N/A	N/A	N/A
3.0:	Type A fire-resisting construction	Type A fire-resisting construction is applicable to the development.	Refer to part 3 clauses below for the relevant Type A Construction requirements appliable to the project.	-
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*. (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	It is assumed the building can readily comply. Sufficient details have not been provided at this stage to demonstrate compliance The fire walls throughout the building are to achieve a minimum FRL 240/240/240. The “mezzanine: levels floors are required to be provided with an FRL 240/240/240	CRA – Refer Annexure F

Section C: Fire Resistance			
	less or *sarking-type material*, must not be crossed by timber or other combustible building elements; or (iv) a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes. > Load bearing internal walls (including those part of a loadbearing shaft) and fire walls must be of concrete or masonry. > Non-loadbearing internal walls required to be fire rated, as well as non-load bearing lift, ventilating, pipe, garbage or similar shaft wall must be of non-combustible construction. **Note:** This includes *non-combustible* insulation. When an insulation material is not certified as *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage. > The *FRL*s specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5m of a window and are exposed through that window to a *fire-source feature*. > It should also be noted that if Dincel material is to be used as an element where the BCA requires such element to be *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage		
3.2: Concessions for floors	A floor need not comply with Table 3 if— (a) it is laid directly on the ground	The basement floor slab need not be provided with an FRL.	Noted

Section C: Fire Resistance				
3.3:	Floor Loading of Class 5 and 9b buildings: Concession	N/A	N/A	N/A
3.4:	Roof superimposed on concrete slab: Concession	N/A	N/A	N/A
3.5:	Roof: Concession	A roof need not comply with Table 3 if its covering is *non-combustible* and the building— (a) has a sprinkler system (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.	As part of the building (excluding B.1 & B.2 compartments) is proposed to be provided with a sprinkler system in accordance with BCA Clause E1.5, the roof of those parts need not be provided with an FRL.	Noted
3.6:	Roof lights	N/A	N/A	N/A
3.7:	Internal columns and walls: Concession	For a building with an *effective height* of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than *fire walls* and shaft walls may have— (a) in a Class 7& 8 building— (i) with rise in storeys exceeding 3: *FRL* 60/60/60 (ii) with rise in storeys not exceeding 3: no FRL.	Internal columns directly below the roof other than those providing lateral support to a fire wall are required may be provided with no FRL. Structural Engineer to provide further comment with regards to the support of internal fire walls separating fire compartments.	CRA – Refer Annexure F

Section C: Fire Resistance				
3.8:	Open spectator stands and indoor sports stadiums concession	N/A	N/A	N/A
3.9:	Carparks	N/A	N/A	N/A
3.10:	Class 2 and 3 buildings Concession	N/A	N/A	N/A
4.0:	Type B fire-resisting construction	Type B fire-resisting construction is applicable to the development.	Refer to part 3 clauses below for the relevant Type B Construction requirements appliable to the project.	-
4.1:	Fire-resistance of building elements	The *FRL*'s of all elements are to be in accordance with the *FRL*'s detailed in the Table contained within Part 4.0 of this report. > External walls, common walls and the flooring and floor framing of lift pits must be *non-combustible* (Note: insulation and sarking used must be *non-combustible*) > if a stair shaft supports any floor or a structural part of it— (i) the floor or part must have an *FRL* of 60/–/– or more; or (ii) the junction of the stair shaft must be constructed so that the floor or part will be free to sag or fall in a fire without causing structural damage to the shaft; and > Internal walls required to be fire rated must extend to– (i) to the underside of the floor next above if that floor has an *FRL* of at least 30/30/30; or	There are no new buildings works to the Heritage Office. The proposed scope is to "make good". A detailed assessment of this Fire Resisting requirements has not been undertaken.	CRA – Refer Annexure F

Section C: Fire Resistance			
	(ii) the underside of a roof complying with Table 3; or (iii) the underside of a ceiling having a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes; or (iv) the underside of the roof covering if it is *non-combustible* and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other combustible building elements; or (v) 450 mm above the roof covering if it is combustible; and > Load bearing internal walls (including those part of a loadbearing shaft) and *fire walls* must be of concrete or masonry. > Non-loadbearing internal walls required to be fire rated must be of *non-combustible* construction. **Note:** This includes *non-combustible* insulation. When an insulation material is not certified as *non-combustible*, this material will need to be the subject of a Fire Engineering Assessment at the CC stage. > in a Class 7or 8 building, in the storey immediately below the roof, internal columns and internal walls other than *fire walls* and shaft walls, need not comply with Table 4; and > lift, subject to C2.10, ventilating, pipe, garbage, and similar shafts which are not for the discharge of hot products of combustion and not loadbearing, must be of *non-combustible* construction in— (i) a Class 7 or 8 building if the shaft connects more than 2 storeys;		
4.2: Carparks	N/A	N/A	N/A

Section C: Fire Resistance				
4.3:	Class 2 and 3 buildings: Concession	N/A	N/A	N/A
5.0:	Type C fire-resisting construction	Type C fire-resisting construction is applicable to the development.	Refer to part 3 clauses below for the relevant Type C Construction requirements appliable to the project.	CRA – Refer Annexure F
5.1:	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. > An external wall that is required to have an FRL need only be tested from the outside to satisfy the FRL requirement. > Internal walls in a Class 2 or 3 building required to be fire rated must extend to– (i) to the underside of the floor next above if that floor has an *FRL* of at least 30/30/30 or a fire-protective covering on the underside of the floor; or (ii) the underside of a ceiling having a resistance to the incipient spread of fire to the roof space above itself of not less than 60 minutes; or (iii) the underside of the roof covering if it is *non-combustible* and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other combustible building elements; or (iv) 450 mm above the roof covering if it is combustible; and	There are no new buildings works to the Heritage Building (Café). The proposed scope relates to internal alternation. A detailed assessment of this Fire Resisting requirements has not been undertaken.	Noted
5.2:	Carparks	N/A	N/A	N/A

Section D: Access and Egress				
Part D1 – Provision for Escape				
D1.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
D1.1:	Application of Part	The Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or a Class 4 part of a building.	Noted	Noted
D1.2:	Number of exits required	General > Without passing through another *sole-occupancy unit*, every occupant of a storey or part of a storey must have access to an exit	Each part of the building has been provided with at least a single exit.	CRA – Refer Annexure F
D1.3:	When fire-isolated stairways and ramps are required	N/A	The stairs throughout the building connect no more than one (1) storey and therefore are not required to be contained within a fire-isolated shaft.	CRA – Refer Annexure F
D1.4:	Exit travel distances	<u>Class 7/8</u> No point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m. > no point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m	The distance to an exit or a point of choice exceeds the prescriptive requirements of the BCA in the following locations; 1. Unit 2- Distance to an exit measured up to 42m 2. Unit 3- Distance to a point of choice measured up to 32m and distance to an exit measured up to 48m 3. Unit 4- Distance to a point of choice measured up to 47m and distance to an exit measured up to 47m- 4. Unit 11- Distance to a point of choice measured up to 30m and distance to an exit measured up to 45m	**PS-Refer to Part 3.3**

Section D: Access and Egress			
		5. Unit 12- Distance to a point of choice measured up to 44m and distance to an exit measured up to 73m Fire Engineer to be engaged at CC stage to address extended travel distance. In relation to units 6, and 8 it is recommended than an additional door is provided along the eastern boundary providing access to the pedestrian egress path.	
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— (i) in all other cases — 60 m apart; and (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart. Note: the distance between *exits* must be measured through the point at which travel two *exits* is available.	The distance between alternative exits exceeds the prescriptive requirements of the BCA in the following locations; 1. Storage unit 1- Distance between alternate exits measured up to 69m 2. Storage unit 2- distance between exits measure up to 64m 3. Carpark- Distance between exits measured up to 104m 4. Unit 11- distance between exits measured up to 65m Fire Engineer to be engaged at CC stage to address extended distance between exits	**PS-Refer to Part 3.3**
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 architectural drawings demonstrate that all doors achieve a minimum of 750mm and all paths of travel to an exit are generally a minimum of 1m clear.	**Complies**

Section D: Access and Egress				
		> 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.		
D1.7:	Travel via fire-isolated exits	N/A	N/A	N/A
D1.8:	External stairways or ramps in lieu of fire-isolated exits	N/A	N/A	N/A
D1.9:	Travel by non-fire-isolated stairways or ramps	> A non-fire-isolated stairway serving as a required *exit* must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. > In a Class 7 or 8 building, the distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or non-fire-isolated ramp must not exceed 80m. > In a Class 7 or 8 building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than –	The travel distance of the non-fire-isolated stairs are such that compliance is demonstrated. The distance to open space is less than 80m and the door from the stair is directly to roof as open space.	**Complies**

Section D: Access and Egress			
	(i) 20 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or (ii) 40 m from one of 2 such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.		
D1.10: Discharge from exits	*Exits* must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the *exit*. If a required *exit* leads to open space, the path of travel to the road must have an unobstructed width of not less than 1m. If an *exit* discharges to open space that is at a different level that the public road to which it is connected, the path of travel to the road must be by a ramp or other incline not steeper than 1:8, or a BCA compliant stairway. The discharge points of alternative *exits* must be as far apart as practical	The exits throughout the building are considered to be located where they cannot be blocked, therefore, suitable barrier/bollards are not required. However, external factors that may have implications are out of our control.	**Complies**
D1.11: Horizontal exits	N/A	N/A	N/A
D1.12: Non-required stairways, ramps or escalators	N/A	N/A	N/A
D1.13: Number of persons accommodated	Informational– The number of persons accommodated in a storey, room or mezzanine must be determined within consideration to the purpose for which it is used and the layout of the floor area by– (a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by	It is assumed that there will be no more than 20 persons per tenancy.	Noted

Section D: Access and Egress			
	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:		
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.	Noted	Noted
D1.15: Method of Measurement	Informational	Noted	Noted
D1.16: Plant rooms, lift motor rooms and electricity	Informational –	Sufficient details have not been provided at this stage.	CRA – Refer Annexure F

Section D: Access and Egress			
network substations: concession	(a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a floor area of not more than 100 m2; or (ii) all but one point of egress from a plant room, a lift machine room or a Class 8 electricity network substation with a floor area of not more than 200 m2. (b) A ladder permitted under (a)— (i) may form part of an *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.	However, it is assumed that compliance is readily achievable. Further details to be provided at CC stage for assessment.	
D1.17: Access to lift pits	Access to the lift pit is assumed to be through the bottom landing doors as the pit is assumed to be less than 3m deep.	Access to the lift pit is assumed to be through the bottom landing doors as the pit is assumed to be less than 3m deep.	CRA – Refer Annexure F
D1.18: Egress from early childhood centres	N/A	N/A	N/A
Part D2 – Construction of Exits			
D2.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
D2.1: Application of Part	Informational– Except for D2.13, D2.14(a), D2.16, D2.17(d), D2.17(e), D2.21 and D2.24, the Deemed-to-Satisfy Provisions of	Noted	Noted

Section D: Access and Egress				
		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.*		
D2.2:	Fire-isolated stairways and ramps	N/A	N/A	N/A
D2.3:	Non-fire-isolated stairways and ramps	Required stairs and ramps (including landings and any supporting building elements) must be constructed according to D2.2, or only of- (a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue".	Structural Engineer to confirm at CC stage.	CRA – Refer Annexure F
D2.4:	Separation of rising and descending stair flights	N/A	Stairs are not required to be contained within a fire-isolated shaft.	N/A
D2.5:	Open access ramps and balconies	N/A	N/A	N/A
D2.6:	Smoke lobbies	N/A	N/A	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: o a lighting, detection, or pressurization system serving the *exit*; or o a security, surveillance or management system serving the *exit*; or o an intercommunication system or an audible or visual alarm system in accordance with D2.22; or o the monitoring of hydrant or sprinkler isolating valves.	Sufficient details have not been provided at this stage. The location of service cupboards is yet to be determined. Where a service cupboard contains electrical equipment and is located along the path of travel the door shall be provided with a non-combustible construction or a fire protective covering with doorways suitably sealed against smoke spread for further assessment. It is recommended that a door schedule is provided for further assessment.	CRA – Refer Annexure F
D2.8:	Enclosure of space under stairs and ramps	N/A	N/A	N/A
D2.9:	Width of stairways and ramps	Informational– A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2 m.	There are no stairs which exceed 2m in width	Noted

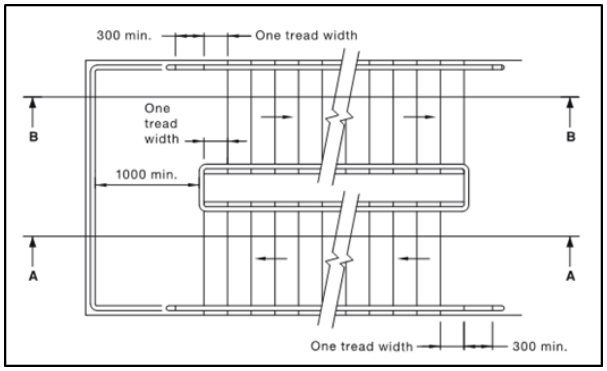
Section D: Access and Egress			
D2.10: Pedestrian ramps	> A ramp serving as a required *exit* must— (i) where the ramp is also serving as an accessible ramp under Part D3, be in accordance with AS 1428.1:2009; or (ii) in any other case, have a gradient not steeper than 1:8. > The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.	Sufficient details have not been provided at this stage for assessment. However, it is assumed compliance is readily achievable. Details with regards to the gradient of external ramps are to be provided for further assessment.	CRA – Refer Annexure F
D2.11: Fire-isolated passageways	N/A	N/A	N/A
D2.12: Roof as open space	If an exit discharges to a roof of a building, the roof must— (a) have an FRL of not less than 120/120/120; and (b) not have any roof lights or other openings within 3 m of the path of travel of persons using the exit to reach a road or open space.	The roof of the carpark, storage units 1 and 2 is considered to facilitate egress to the road and therefore is technically required to comply with the provisions of BCA Clause D2.12. All openings within 3m of the path of travel to the road including drainage openings and openings formed by the non-fire-isolated stairways are to be addressed via Fire Engineering Performance Solution Report.	**PS-Refer to Part 3.3**
D2.13: Goings and risers	Stairways must comply with the following: > Stairways must have not more than 18 and not less than 2 risers in each flight; > Goings must be between 240 mm and 355 mm within the residential units; > Goings must be between 250 mm and 355 mm; > Goings must be between 250 mm and 355 mm in other areas;	Sufficient details have not been provided at this stage to undertake a detailed assessment. However, it is assumed the building can readily comply. Updated architectural drawings including 1:50 details of stairways to be provided for further assessment.	CRA – Refer Annexure F

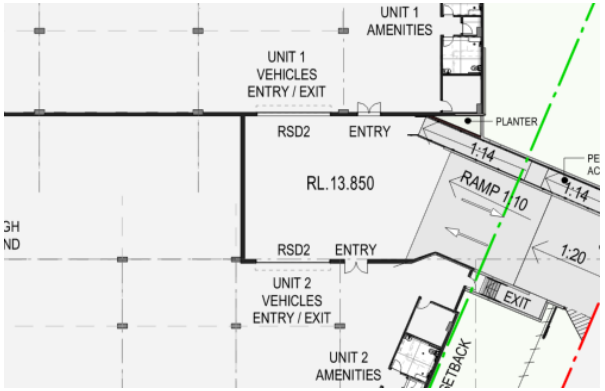
Section D: Access and Egress			
	> Risers must be between 115 mm high and 190 mm high; > The slope relationship (2 x riser dimension + going dimension) must be within the range of 550-700; > The goings and risers must be constant (uniform) throughout each flight and the dimensions of goings (G) and risers (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. > **In the case of a required stairway, no winders in lieu of a landing** > Treads must have a surface or nosing strip with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with AS 4586-2013 Slip resistance classification of new pedestrian surface materials.		
D2.14: Landings	Landings must be not less than 750 mm long and have either a surface with a slip-resistance classification complying with Table D2.14 or a strip at the edge of the landing with a slip-resistance classification complying	The architectural drawings compliant landings in accordance with BCA Clause D2.14.	CRA – Refer Annexure F

<table>
<tr><th colspan="4">Section D: Access and Egress</th></tr>
<tr><td></td><td>with Table D2.14 when tested in accordance with AS 4586:2013.<table><tr><th rowspan="2">Application</th><th colspan="2">Surface Condition</th></tr><tr><th>Dry</th><th>Wet</th></tr><tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr><tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr><tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr><tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr></table></td><td>Architectural specification and test reports in accordance with 4586:2013 are to be provided for further assessment.</td><td></td></tr>
<tr><td>D2.15: Thresholds</td><td>The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless–
(a) in a building required to be accessible, the doorway–
(i) opens to a road or open space; and
(ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1:2009; or
(b) in other cases–
(i) the doorway opens to a road or open space, external stair landing or external balcony; and
(ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.</td><td>The current configuration of the doorways and adjoining steps are such that they demonstrate compliance with the provision of this clause.
Note; where an exit discharges to the road or open space a step up to 190mm can be incorporated within the threshold of the doorway.</td><td>CRA – Refer Annexure F</td></tr>
</table>

Section D: Access and Egress			
D2.16: Barriers to prevent falls	Balustrades must be provided to stairs and balconies, driveway ramps etc where there is a fall of more than 1m. Balustrades must comply with the following: <u>Balustrade minimum heights</u> > 865 mm above stair nosings; > 865 mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length; and > 1 m in all other locations. <u>Balustrade openings – fire-isolated stairs</u> > maximum openings of 300 mm; or > where rails are used– o a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and o the opening between rails must not be more than 460 mm <u>Balustrade openings – other than fire-isolated stairs</u> > A 125 mm sphere must not be able to pass through any opening and for stairways, the 125 mm is measured above the nosing line of the stair treads. <u>Climbability – other than fire-isolated stairs</u> For floors more than 4m above the surface beneath, the balustrade must not incorporate any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that could facilitate climbing.	Sufficient details have not been provided at this stage to undertake a detailed assessment. However, it is assumed compliance is readily achievable. It is to be noted that barriers and handrails to the stairs within the warehouse units shall be constructed independently. Detailed architectural drawings including 1:50 detail of balustrades are to be provided for further assessment.	CRA – Refer Annexure F

Section D: Access and Egress			
D2.17: Handrails	Handrails to stairways must: > be located along at least one side of the ramp or flight (a flight being 2 or more risers); and > located along each side if the total width of the stairway or ramp is 2m or more; and > be fixed at a height of not less than 865 mm above the nosings of the stair treads and the floor surface of the ramp, landing, or the like; and > be continuous between stair flight landings and have no obstruction that will break a hand-hold. > be constructed to comply with clause 12 of AS 1428.1:2009 (including handrails to the fire stairs). > Handrails in common areas (other than fire stairs) must also accord with D3.3. <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 AS 1428.1:2009. The handrail shall follow the angle of the nosings and be consistent height through the stair flight and any landings with no vertical sections at the landing. Compliance can be achieved via offset risers at the bottom of the flight in accordance with Figure 28 in AS 1428.1:2009 or with larger landings to accommodate required handrail extensions.	Assessment of the architectural drawings generally demonstrate handrails in compliant locations as required by BCA Clause D2.17. However, a details assessment has not been undertaken. Detailed architectural drawings including 1:50 detail of stair and handrails is to be provided for further assessment.	CRA – Refer Annexure F

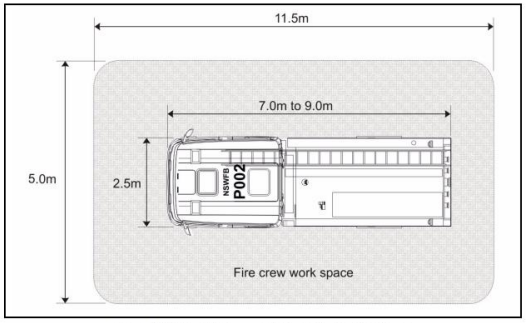
Section D: Access and Egress			
	 Figure 28 in AS 1428.1:2009		
D2.18: Fixed platforms, walkways stairways and ladders	N/A	N/A	N/A
D2.19: Doorways and doors	> Sliding doors serving as *exit* doors must be openable manually under a force of not more than 110N. > *Exit* doors that are power operated must 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.	Sliding doors have been proposed within the building.	Noted
D2.20: Swinging doors	Swinging doors in a required *exit* must not encroach–	The exit doors in unit 1 & Unit 2 do not swing in the direction of travel. It is recommended that the	**FI-Refer to Part 3.4**

Section D: Access and Egress			
	(i) at any part of its swing by more than 500 mm on the required 1m width of the *exit* and (ii) when fully open, by more than 100 mm on the required 1m *exit* width; and the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door. A swinging door in a required *exit* must swing in the direction of egress unless– > it serves a building or part with a floor area not more than 200 m2, it is the only required *exit* from the building or part and it is fitted with a device for holding it in the open position; or > it serves a sanitary compartment or airlock (in which case it may swing in either direction).	architectural drawings are updated to detail all exit doors swinging 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– (iii) a single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – (A) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and (B) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm and not more than 45mm; or	No details of hardware have been provided at this stage. A door schedule and BCA specification is to be submitted which demonstrate compliance with D2.21 and AS1428.1-2009.	CRA – Refer Annexure F

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

Section D: Access and Egress			
D2.22: Re-entry from fire-isolated exits	N/A	N/A	N/A
D2.23: Signs on doors	Signage in accordance with this clause is to be located on all fire and smoke doors stating “Fire Safety Door, Do Not Obstruct, Do Not Keep Open” and the discharge door from the fire isolated stairways are to state “Fire Safety Door – Do Not Obstruct” in capital letters not less than 20mm in height. Note: Fire signage in accordance with clause 183 of the Environmental Planning and Assessment Regulation 2000 is also required.		CRA – Refer Annexure F
D2.24: Protection of openable windows	N/A	N/A	N/A
D2.25: Timber stairways: concession	N/A	N/A	N/A
Part D3 – Access for People with A Disability			
D3.0: Deemed-to-Satisfy Provisions	Informational	**Please refer to separate Access Report prepared by BCA Logic**	Noted

Section E: Services and Equipment			
Part E1 – Fire Fighting Equipment			
E1.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E1.3: Fire hydrants	As the building has a floor area greater than 500 m2, a fire hydrant system complying with AS 2419.1:2005 must be provided to serve the building.	The hydrant booster assembly is proposed to be located on Inman Road and is proposed to be located within 10m of the heritage office.	**PS-Refer to Part 3.3**

Section E: Services and Equipment			
	> Hydrant booster assembly location. The booster location must comply with the following: o be within 8m of a hardstand for fire brigade appliance; o be within sight of the main entry; > Assuming it is attached to the building, be separated from the building by construction achieving FRL 90/90/90 for 2m either side of and 3m above the upper hose connections > Hydrant pump room location (if a pumpset is required). An internal pump room must have a door opening to a road or open space or egress to open space via a fire-isolated *exit*; > Internal hydrants in each fire-isolated *exit* at each storey providing coverage to all parts of the building. For internal fire hydrant coverage, all points on the floor must be covered by a 10m hose stream, issuing from 30 m hose length, extending not less than 1m into the room. Note: Consideration should be given to the location of Electrical Substations on adjoining sites in regards to proximity to Fire Hydrant Boosters being within 10.0m	It is recommended that the hydrant booster is located closer to the allotment boundary to have a minimum set back of 10 m from the adjoining building. It is assumed the building buildings are to be protected with external attack hydrant, these attack hydrants will be located within 10m of the building, however, it is proposed to address the location of these hydrants via a Performance Solution report. The hydrant pump room is located within the driveway adjoining the driveway around the heritage office. A hardstand is required to be provided within 20 m of the pump room. Spatial requirements of the hard stand shall be in accordance with the below diagram.  *Figure 1 Minimum fire crew work space of a hardstand area* The pump room is located adjoining a non-sprinkler protected part of the building and is required to be protected with walls aching an FRL 240/240/240 and doors achieving an FRL -/60/30 Sufficient details have not been provided at this stage in relation to water storage. It is recommended that the Hydraulic consultant undertake further investigation to establish if sufficient pressures and flows can be provided.	**FI-Refer to Part 3.4**

Section E: Services and Equipment			
E1.4: Fire hose reels	A fire hose reel system complying with BCA clause E1.4 and AS 2441:2005 must be provided to the building (excluding Classes 2, 3, 4, 5, 8 and 9c). All points on a floor shall be within reach of a 4 m hose stream issuing from a nozzle at the end of the hose laid on floor. The hose length shall not exceed 36 m. Fire hose reels must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors, except— (i) doorways in walls referred to in C2.5(a)(v) in a Class 9a building and C2.5(b)(iv) in a Class 9c building, separating ancillary use areas of high potential fire hazard; and (ii) doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (iii) doorway openings to shafts referred to in C3.13.	Sufficient details have not been provided at this stage. It is assumed the building can readily comply. The architectural drawings are to be updated to denote the location of fire hose reels. Fire hose reels shall be located within 4m of an exit.	CRA – Refer Annexure F
E1.5: Sprinklers	The building must be provided with a sprinkler system complying with Table E1.5 and Specification E1.5 installed throughout.	At this stage the design has been based on the fact that each warehouse tenancy may be considered an occupancy of excessive hazard. Warehouse units 1-12 will be provided with a sprinkler system in accordance with AS2118.1-2017. Self-storage units 1-2 will not be provided with a sprinkler system Wet Fire Services drawings and designed certification are to be prepared by an accredited practitioner (fire safety) in accordance with AS2118.1-2017 and reference applicable BCA Clause and Fire Engineering Performance Solution Report.	CRA – Refer Annexure F

Section E: Services and Equipment			
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.	Sufficient details have not been provided at this stage. However, it is assumed the building can readily comply. Updated architectural drawings are to be submitted detailing the location of portable fire extinguishers in accordance with BCA Clause E1.6	CRA – Refer Annexure F
E1.8: Fire control centres	> The building must be provided with a fire control centre facility in accordance with BCA Specification E1.8. > The fire control centre must be located so that egress from any part of its floor to a public road or open space does not involve changes in level which in aggregate exceed 300 mm.	As the building has a floor area which exceeds 18,000 m^2 a fire control centre shall be provided in accordance with BCA Clause E1.8. fire control centre must— (a) provide an area from which fire-fighting operations or other emergency procedures can be directed or controlled; and (b) contain controls, panels, telephones, furniture, equipment and the like associated with the required fire services in the building; and (c) 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. The architectural drawings are to be updated to denote the location of the fire control centre. Due to multiple building entries, the fire control centre will not be located at the main entry. It is proposed to address the location of the control centre via Fire Engineering Performance Solution Report.	**FI-Refer to Part 3.4** **PS- Refer to Part 3.3**
E1.9: Fire precautions during construction	Informational–	To be noted during construction	Noted

Section E: Services and Equipment				
		> 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.		
E1.10:	Provision for special hazards	N/A	N/A	N/A
Specification E1.5 – Fire Sprinkler Systems				
1.	Scope	Informational	Noted	Noted
2.	Application of automatic fire sprinkler standards	An automatic fire sprinkler system shall comply with AS2118 as relevant to the building classification and the design of the hydraulic consultant. Where the building is residential class 2 or 3 then refer to Specification E1.5a for specific design requirements and concessions.	The building shall be provided with a sprinkler system in accordance with AS 2118.1-2017. Wet fire service drawings are to be designed and prepared by an accredited certifier (fire safety) making specific reference to BCA Clause E1.5, AS2118.1-2017 and any relevant Fire Engineering Performance Solution report for further assessment.	CRA – Refer Annexure F
3.	Separation of sprinklered and non-sprinklered areas	Where a part of a building is not protected with sprinklers, the sprinklered and non-sprinklered parts must be fire-separated with a wall or floor which must – (a) comply with any specific requirement of the Deemed-to-Satisfy Provisions of the BCA; or (b) where there is no specific requirement, comply with the relevant part of AS 2118, FPAA101D or FPAA101H.	The building will be provided with a sprinkler system in accordance with BCA Clause E1.5 & AS 2118.1-2017	CRA – Refer Annexure F

Section E: Services and Equipment				
4.	Protection of openings	Any openings, including those for service penetrations, in construction separating sprinklered and non-sprinklered parts of a building, including the construction separating the areas nominated for omitted protection in AS 2118.1:2017, must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C3.	N/A	N/A
5.	Fast response sprinklers	N/A	N/A	N/A
6.	Sprinkler valve enclosures	(a) Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or open space. (b) All sprinkler valve rooms and enclosures must be secured with a system suitable for use by the fire brigade.	The sprinkler alarm valve enclosure is assumed to be contained within the pump room located on basement level. level Access is provided via a ramp from Inman Road The location of the enclosure is with direct egress to a road or open space.	**Complies**
7.	Water supply	(a) A required sprinkler system must be provided with at least one water supply. (b) A required sprinkler system in a building greater than 25 m in effective height must be provided with dual water supply except that a secondary water supply storage capacity of 25,000 litres may be used if – (i) the storage tank is located at the topmost storey of the building; and (ii) the building occupancy is classified as no more hazardous than Ordinary Hazard 2 (OH2) under AS 2118.1:2017; and (iii) an operational fire brigade service is available to attend a building fire.	Wet fire service drawings are to be designed and prepared by an accredited certifier (fire safety) making specific reference to BCA Clause E1.5, AS2118.1-2017 and any relevant Fire Engineering Performance Solution report for further assessment.	CRA – Refer Annexure F
8.	Building occupant warning system	A required sprinkler system, except a FPAA101D sprinkler system, must be connected to and activate a	Wet/dry fire service drawings are to be designed and prepared by an accredited certifier (fire safety) making specific reference to BCA Clause E1.5, E2.2a,	CRA – Refer Annexure F

Section E: Services and Equipment				
		building occupant warning system complying with Clause 7 of Specification E2.2a.	AS1670.1-2018, AS2118.1-2017 and any relevant Fire Engineering Performance Solution report for further assessment.	
9.	Connection to Other Systems	Where a smoke hazard management system is installed and is actuated by smoke detectors, the sprinkler system must, wherever practicable, be arranged to also activate the smoke hazard management system.	Wet/dry fire service drawings are to be designed and prepared by an accredited certifier (fire safety) making specific reference to BCA Clause E1.5, E2.2a, AS1670.4-2018, AS2118.1-2017 and any relevant Fire Engineering Performance Solution report for further assessment.	CRA – Refer Annexure F
10.	Anti-tamper Devices	(a) Where a sprinkler system is installed – (i) over any stage area in a theatre, public hall or the like, visual and audible status indication of sprinkler valves must be provided at the location normally used by the stage manager; or (ii) in a space housing lift electrical and control equipment (including machine rooms, secondary floors and sheave rooms), any valves provided to control sprinklers in these spaces must be located adjacent to the space. (b) Any valves provided to control sprinklers required by (a) must be fitted with anti-tamper monitoring devices connected to a monitoring panel.	Wet/dry fire service drawings are to be designed and prepared by an accredited certifier (fire safety) making specific reference to BCA Clause E1.5, E2.2a, AS1670.4-2018, AS2118.1-2017 and any relevant Fire Engineering Performance Solution report for further assessment.	CRA – Refer Annexure F
11.	Sprinkler Systems in Carparks	A sprinkler system protecting a carpark complying with Table 3.9 of Specification C1.1 in a multi-classified building must – (a) be independent of the sprinkler system protecting any part of the building not used as a carpark; or (b) if forming part of a sprinkler system protecting a part of the building not used as a carpark, be designed such that the section protecting the non-carpark part can be isolated without interrupting the water	Wet/dry fire service drawings are to be designed and prepared by an accredited certifier (fire safety) making specific reference to BCA Clause E1.5, E2.2a, AS1670.1-2018, AS2118.1-2017 and any relevant Fire Engineering Performance Solution report for further assessment.	CRA – Refer Annexure F

Section E: Services and Equipment				
		supply or otherwise affecting the effective operation of the section protecting the carpark.		
12.	Residential Care Buildings	N/A	N/A	N/A
13.	Sprinkler systems in lift installations	(a) Where sprinklers are installed in a space housing lift electrical and control equipment, including machine rooms, secondary floors and sheave rooms, sprinklers in these spaces must – (i) have heads protected from accidental damage by way of a guard that will not impair the performance of the head; and (ii) be capable of being isolated and drained, either separately or collectively, without isolating any other sprinklers within the building. (b) Valves provided to control sprinklers referred to in (a) must be installed in accordance with Clause 10(b).	Wet/dry fire service drawings are to be designed and prepared by an accredited certifier (fire safety) making specific reference to BCA Clause E1.5, E2.2a, AS1670.4-2018, AS2118.1-2017 and any relevant Fire Engineering Performance Solution report for further assessment.	CRA – Refer Annexure F
Part E1.8 – Fire Control Centres				
1.	Scope	Informational	Noted	Noted
2.	Purpose and content	A fire control centre must— (c) 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—	Noted	CRA – Refer Annexure F

Section E: Services and Equipment				
		(i) fire-fighting activities; and (ii) other measures concerning the occupant safety or security.		
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.	As previously discussed, a space has not been indicated on the architectural drawings for the fire brigade to co-ordinate its search and rescue, and firefighting operations during a fire. As the control centre is expected to be contained within the building, this will involve changes in level which in aggregate exceed 300 mm. The client has advised that a fire engineer has been engaged to provide a performance solution to address variations to the deemed to satisfy provisions of the BCA. Updated architectural drawings are to be provided for further assessment	**PS- Refer to Part 3.3**
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.	Noted	Noted
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 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.	Wet/dry fire service drawings are to be designed and prepared by an accredited certifier (fire safety) making specific reference to BCA Clause E1.5, E2.2a, AS1670.4-2018, AS2118.1-2017 and any relevant Fire Engineering Performance Solution report for further assessment.	CRA – Refer Annexure F
6.	Construction of a fire control room	N/A	N/A	N/A

Section E: Services and Equipment				
7.	Protection of openings in a fire control room	N/A	N/A	N/A
8.	Doors to a fire control room	N/A	N/A	N/A
9.	Size and content of a fire control room	N/A	N/A	N/A
10.	Ventilation and power supply for a fire control room	N/A	N/A	N/A
11.	Sign for a fire control room	N/A	N/A	N/A
12.	Lighting for a fire control room	N/A	N/A	N/A

Part E2 – Smoke Hazard Management				
E2.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E2.1:	Application of Part	Informational	Noted	Noted
E2.2:	General requirements (including Tables E2.2a and E2.2b)	**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	The building is a four (4) story building containing class 7/8 parts. In accordance with BCA Clause E2.2 the following essential fire safety measures in relation to smoke hazard management shall be provided;	CRA – Refer Annexure F

	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 1668.1:2015; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the *fire compartments* served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1668.1:2015; 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 1668.1:2015 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. A smoke detection system must be installed in accordance with Clause 6 of Specification E2.2a to operate AS1668.1:2015 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated *exits*. . **Class 7a buildings** A Class 7a building including a basement provided with a mechanical ventilation system in accordance with AS 1668.2:2012 must comply with clause 5.5 of AS 1668.1:2015 except that fans with metal blades for operation at normal temperatures may be used, and the	1. Automatic smoke detection & Alarm System in accordance with AS1670.1-2018; or 2. Sprinkler System in accordance with AS2118.1-2017. **Class 7a Carpark** A Class 7a building, including a basement, provided with a mechanical ventilation system in accordance with AS 1668.2 must comply with clause 5.5 of AS 1668.1 except that— (a) fans with metal blades suitable for operation at normal temperature may be used; and (b) the electrical power and control cabling need not be fire rated.	

		electrical power and control cabling need not be fire rated.		
E2.3:	Provisions for special hazards	N/A	N/A	N/A
Specification E2.2a – Smoke Detection and Alarm System				
1.	Scope	Informational	Noted	Noted
2.	Type of system	A required automatic smoke detection and alarm system must be provided in accordance with the following: (a) Class 7 or 8 buildings— a smoke detection system complying with Clause 4.		CRA – Refer Annexure F
3.	Smoke alarm system	N/A	N/A	N/A
4.	Smoke detection system	(a) All Class 2 - 9 buildings— (i) A smoke detection system must— (A) subject to (b) and (c), comply with AS 1670.1; and (B) activate a building occupant warning system in accordance with Clause 7. (ii) In kitchens and other areas where the use of the area is likely to result in smoke detectors causing spurious signals— (A) any other detector deemed suitable in accordance with AS 1670.1 may be installed provided that smoke detectors are installed elsewhere in the sole-occupancy unit in accordance with the requirements for alarms in Clause 3(b)(i) and Clause 3(b)(ii); or (B) an alarm acknowledgement facility may be installed, except where the kitchen or	A smoke detection and alarm system complying with BCA Clause E2.2a Clause 4, & AS1670.1-2018 will be provided throughout the industrial warehouses. Service drawings & design certification to be prepared by an accredited practitioner (fire safety) for further assessment.	CRA – Refer Annexure F

		other area is in a building protected with a sprinkler system complying with Specification E1.5 (other than a FPAA101D or FPAA101H system), the detectors need not be installed in the kitchen or other areas likely to result in spurious signals.		
5.	Combined smoke alarm and smoke detection system	N/A	N/A	N/A
6.	Smoke detection for smoke control system	N/A	N/A	N/A
7.	Building occupant warning system	Subject to E4.9, a building occupant warning system provided as part of a smoke hazard management system must comply with clause 3.22 of AS 1670.1 to sound through all occupied areas	A Building occupant warning system complying with BCA Clause E2.2a Clause 6, & AS1670.1-2018 will be provided throughout the industrial warehouses. Service drawings & design certification to be prepared by an accredited practitioner (fire safety) for further assessment.	CRA – Refer Annexure F
8.	System Monitoring	N/A	N/A	N/A
Part E3 – Lift Installations				
E3.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
E3.1:	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1	No details provided at this stage. Detailed architectural drawings and specification to be provided for assessment for further assessment.	CRA – Refer Annexure F
E3.2:	Stretcher facility in lifts	N/A	The lift does not serve a storey above an effective height of 12m	N/A

E3.3: Warning against use of lifts in fire	Warning signs indicating “DO NOT USE LIFTS IF THERE IS A FIRE” shall be displayed near every call button for a passenger lift or group of lifts throughout a building as per E3.3.	No details provided at this stage. Detailed architectural drawings and specification to be provided for assessment for further assessment.	CRA – Refer Annexure F
E3.4: Emergency lifts	N/A	N/A	N/A
E3.5: Landings	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D.	The architectural drawings detail compliant landings in accordance with BCA Clause D2.14 Detailed architectural drawings and specification to be provided for further assessment.	**Complies**
E3.6: Passenger lifts	In an accessible building, every passenger lift must be one of the types specified in Table E3.6a, have accessible features in accordance with Table E3.6b, and not rely on a constant pressure device for its operation if the lift car is fully enclosed.	Detailed lift drawings and specification have not been provided for at this stage for assessment. The floor size of the lift cars generally shows sufficient dimensions, which shall be not less than 1100 wide x 1400mm deep. Certification shall be provided from the lift supplier for the accessible features at Construction Certificate stage.	CRA – Refer Annexure F
E3.7: Fire service controls	N/A	N/A	N/A
E3.8: Aged care buildings	N/A	N/A	N/A
E3.9: Fire service recall switch	N/A	N/A	N/A
E3.10: Lift car service drive control switch	N/A	N/A	N/A
Part E4 – Visibility In An Emergency, Exit Signs And Warning Systems			
E4.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted

E4.2: Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with Clause E4.2 of the BCA and AS/NZS 2293.1:2018.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.2 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.3: Measurement of distance	Informational	Noted	Noted
E4.4: Design and operation of emergency lighting	The emergency lighting system must comply with AS/NZS 2293.1:2018.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.4 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.5: Exit signs	*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.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.5 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.6: Direction signs	Where an *exit* is not readily apparent, directional signage is to be installed indicating the direction of egress.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.6 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.7: Class 2 and 3 buildings and Class 4 Parts: Exemptions	Informational	Noted	Noted
E4.8: Design and operation of exit signs	*Exit* signs must comply with AS/NZS 2293.1:2018 and be clearly visible at all times when the building is occupied.	Electrical engineer (Fire Systems Design accredited practitioner) to provide drawings, design certification and electrical specification demonstrating compliance with Clause E4.8 of the BCA and AS/NZS 2293.1:2018.	CRA – Refer Annexure F
E4.9: Emergency warning and intercom systems	N/A	N/A	N/A

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

Section F: Health and Amenity				
F1.9:	Damp-proofing	Moisture is to be prevented from reaching the walls above a damp-proof course, and the underside of the suspended floors.	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA specification	CRA – Refer Annexure F
F1.10:	Damp-proofing of floors on the ground	If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870:2011	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA specification	CRA – Refer Annexure F
F1.11:	Provision of floor wastes	N/A	N/A	N/A
F1.12:	Sub-floor ventilation	N/A	N/A	N/A
F1.13:	Glazed Assemblies	Glazed assemblies are to comply with AS 2047:2014 and AS 1288:2006.	No details provided at this stage. This matter to be addressed via detailed architectural drawings & BCA Specification	CRA – Refer Annexure F
Part F2 – Sanitary and Other Facilities				
F2.0:	Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F2.1:	Facilities in residential buildings (including Table F2.1)	N/A	N/A	N/A
F2.2:	Calculation of number of occupants and facilities	Informational – (a) The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means (b) Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females	As discussed within BCA Clause D2.13 it is assumed that there will be no more than 20 persons per tenancy. The sanitary facilities provided throughout the development are capable for the following occupants 1. Warehouse 1 & 2- 2 accessible sanitary compartments capable of serving 20 persons.	CRA – Refer Annexure F

Section F: Health and Amenity				
		(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	2. Each warehouse has been providing with an accessible sanitary compartment 2 female pans, 1 male pan, one urinal and 1 male and female pan on first floor. These sanitary facilities are capable of serving 120 persons.	
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.	Sanitary facilities have been allocated on an equal basis for male and female employees. At OC stage suitable signage is required to be provided to indicate which sex each compartment is for.	CRA – Refer Annexure F
F2.4:	Accessible sanitary facilities (including Table F2.4)	Employee sanitary facility required by Clause F2.1 is to be an accessible unisex compartment compliant with AS 1428.1:2009.	**Please refer to separate access report prepared by BCA Logic.**	CRA – Refer Annexure F

Section F: Health and Amenity				
F2.5:	Construction of sanitary compartments	(a) Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend— (i) from floor level to the ceiling in the case of a unisex facility; or (ii) to a height of not less than 1.5 m above the floor if primary school children are the principal users; or (iii) 1.8 m above the floor in all other cases. (b) The door to a fully enclosed sanitary compartment must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F2.5, between the closet pan within the sanitary compartment and the doorway. <u>Early childhood centre</u> In an early childhood centre, facilities for use by children must have each sanitary compartment screened by a partition which, except for the doorway, is opaque for a height of at least 900 mm but not more than 1200 mm above the floor level.	In accordance with BCA Clause F2.5, the door to the sanitary compartment shall be provided with lift off hinges. A door schedule and BCA specification is to be submitted at Construction Certificate stage for further assessment	CRA – Refer Annexure F
F2.6:	Interpretation: urinals and washbasins	Informational– (a) A urinal may be— (i) an individual stall or wall-hung urinal; or (ii) each 600 mm length of a continuous urinal trough; or (iii) a closet pan used in place of a urinal.	Noted	Noted

Section F: Health and Amenity			
	(b) A washbasin may be— (i) an individual basin; or (ii) a part of a hand washing trough served by a single water tap.		
F2.8: Waste Management	N/A	N/A	N/A
F2.9: Accessible adult change facilities	N/A	N/A	N/A
Part F3 – Room Heights			
F3.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F3.1: Height of rooms and other spaces	(a) The height of rooms and other spaces must be not less than— (b) in a Class 7 or 8 building— (i) except as allowed in (ii) and (f) — 2.4 m; and (ii) a corridor, passageway, or the like — 2.1 m; and (c) in a Class 9a health-care building— (i) a patient care area — 2.4 m; and (ii) an operating theatre or delivery room — 3 m; and (iii) a treatment room, clinic, waiting room, passageway, corridor, or the like — 2.4 m; and (d) in any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and	Based on a scaled assessment of the architectural drawings assessment compliance is generally demonstrated. .	**Complies**

Section F: Health and Amenity			
	(ii) a commercial kitchen — 2.4 m; and (iii) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like. (iv) A required accessible adult change facility – 2.4m		
Part F4 – Light and Ventilation			
F4.0: Deemed-to-Satisfy Provisions	Informational	Noted	Noted
F4.1: Provision of natural light	N/A	N/A	N/A
F4.2: Methods and extent of natural lighting	N/A	N/A	N/A
F4.3: Natural light borrowed from adjoining room	N/A	N/A	N/A
F4.4: Artificial Lighting	Lighting to all areas is to comply with AS/NZS 1680.0:2009.	Electrical details have not been provided at this stage. Electrical engineer to provide Electrical Services drawings and design certification making specific reference to 1680.0:2009. & BCA Clause F4.4	CRA – Refer Annexure F
F4.5: Ventilation of rooms	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2:2012.	Mechanical details have not been provided at this stage. Mechanical engineer to provide Electrical Services drawings and design certification making specific reference to AS 1668.2:2012 & BCA Clause F4.6	CRA – Refer Annexure F
F4.6: Natural ventilation	N/A	N/A	N/A

Section F: Health and Amenity			
F4.7: Ventilation borrowed from adjoining room	N/A	N/A	N/A
F4.8: Restriction on position of water closets and urinals	Sanitary compartments must not open directly into a – > kitchen or pantry > public dining room or restaurant > dormitory in a Class 3 building > room used for public assembly (which is not an early childhood centre, primary school or open spectator stand) > workplace normally occupied by more than one person.	The sanitary compartments are located in locations that comply with the prescriptive requirements of BCA Clause F4.8	**Complies**
F4.9: Airlocks	N/A	N/A	N/A
F4.11: Carparks	Every storey of a carpark (except an open deck carpark) must have: > a system of mechanical ventilation complying with AS 1668.2:2012; or > a system of natural ventilation complying with Section 4 of AS 1668.4:2012.	Sufficient details have not been provided at this stage. Mechanical Engineer to provide design drawings and certification in accordance with AS1668.2-2012 at CC stage.	CRA – Refer Annexure F
F4.12: Kitchen local exhaust ventilation	N/A	N/A	N/A
Part F5 – Sound Transmission and Insulation -N/A			
Part F6 – Condensation Management-N/A			

Section G: Ancillary Provisions
Part G1 – Minor Structures and Components-N/A
Part G2 – Boilers, Pressure Vessels, Heating Appliances, Fireplaces, Chimneys and Flues-NA
Part G3 – Atrium Construction-N/A
Part G4 – Construction in Alpine Areas-N/A
Part G5 – Construction in Bushfire Prone Areas-N/A
Part G6 – Occupiable Outdoor Areas-N/A

Section H: Special Use Buildings
Part H1 – Class 9b Buildings-N/A

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

Section J: Energy Efficiency (Class 3, 5, 6, 7b, 8, 9)			
Part J0 – Energy Efficiency-			
J0.1: Application of Section J	Informational	**A separate Energy Consultant is to be engaged at Construction Certificate stage to address the provisions of Part J**	Noted

ANNEXURE E DEFINITIONS

Annexure E - Definitions

Average specific extinction area

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

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m2) as determined by AS ISO 9239.1:2003.

Effective height

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

Exit

Exit means –

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

(i) An internal or external stairway.

(ii) A ramp.

(iii) A fire-isolated passageway.

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

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

Fire compartment

Fire compartment means –

(a) the total space of a building; or

(b) when referred to in—

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

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

Fire-resistance level (FRL)

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

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order.

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

Fire-source feature

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

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

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

Fire wall

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

Flammability index

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

Group number

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

Horizontal exit

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

Loadbearing

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

Non-combustible

Non-combustible means—

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

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

Open space

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

Performance Requirement

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

Performance Solution

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

Sarking-type material

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

Smoke developed index

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

Smoke development rate

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

Smoke growth rate index

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

Sole-occupancy unit

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

(a) a dwelling; or

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

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

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

ANNEXURE F BCA COMPLIANCE SPECIFICATION

Annexure F – BCA Compliance Specification

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

Architectural Design Certification

1. The FRL's of building elements for the proposed works have been designed in accordance with Table 3 of Specification C1.1 of BCA2019 for a building of Type A Construction, Table 4 of Specification C1.1 of BCA2019 for a building of Type B Construction and Table 5 of Specification C1.1 of BCA2019 for a building of Type C Construction.
2. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
3. Building elements must be non-combustible in accordance with C1.9 of BCA2019.
4. Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C1.10 and Specification C1.10 of BCA2019.
5. Any ancillary elements fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible will comply with Clause C1.14 of BCA2019.
6. The external walls and openings of separate fire compartments will be protected in accordance with Clause C3.3.
7. The parts of different classifications located alongside one another in the same storey will be separated in accordance with Clause C2.8 and Specification C1.1 of BCA2019.
8. Floors separating storeys of different classifications will comply with BCA Clause C2.9 of BCA2019.
9. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C3.2 and C3.3 of BCA2019 or protected in accordance with Clause C3.4 of BCA2019, except where varied via Fire Engineering Performance Solution.
10. The external walls and openings of separate fire compartments will be protected in accordance with Clause C3.3.
11. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C3.5 of BCA2019.
12. 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.
13. 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.
14. The lift doors will be -/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C3.10 of BCA2019.
15. Columns protected by light weight construction will achieve an FRL not less than the FRL for the element it is penetrating, in accordance with Clause C3.17 of BCA2019.
16. A lintel will have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and it spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non-loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or

one of the leaves of a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification C1.1 Clause 2.3 BCA2019.

17. 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.
18. Fire doors will comply with AS 1905.1:2015 and Specification C3.4 of BCA2019.
19. Fire shutters and fire windows will be in accordance with Specification C3.4 of BCA2019, except where varied via Fire Engineering Performance Solution.
20. The number of exits provided to the building will be in accordance with Clause D1.2 of BCA2019.
21. The required exits will be fire-isolated in accordance with Clause D1.3 of BCA2019.
22. Travel distances to exits will be in accordance with Clause D1.4 of BCA2019, except where varied via Fire Engineering Performance Solution.
23. The alternative exits will be distributed uniformly around the storey and will not be less than 9m apart, and not more that 60m apart, in accordance with Clause D1.5 of BCA2019, except where varied via Fire Engineering Performance Solution.
24. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
25. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
26. The non-required stairways, ramps and escalators will be in accordance with Clause D1.12 of BCA2019.
27. The ladder from the plant, lift machine rooms, and electricity network substation in lieu of a stairway will be in accordance with Clause D1.16 of BCA2019.
28. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
29. 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.
30. 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.
31. The fire-isolated passageway will be in accordance with Clause D2.11 of BCA2019.
32. The roof of the building where the exit discharges will have an FRL of 120/120/120, and will not have roof lights or openings within 3m of the path of travel in accordance with Clause D2.12 of BCA2019, except where varied via Fire Engineering Performance Solution.
33. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
34. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.
35. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.

36. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
37. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
38. Signage will be provided on fire and smoke doors in accordance with Clause D2.23 of BCA2019.
39. The fire control centre will be in accordance with Specification E1.8 or BCA2019.
40. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019, except where varied via Fire Engineering Performance Solution.
41. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2:2012.
42. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
43. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
44. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS 3740:2010.
45. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
46. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS 1288:2006 / AS 2047:2014.
47. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.
48. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
49. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.
50. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.
51. Water closets and urinals will be located in accordance with Clause F4.8 of BCA2019.
52. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
53. Every storey of the carpark will be provided with an adequate system of permanent natural or mechanical ventilation in accordance with Clause F4.11 of BCA2019.
54. 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.
55. Essential fire or other safety measures must be maintained and certified on an ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2000.

Electrical Services Design Certification:

56. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019.
57. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
58. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
59. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.
60. Lighting power and controls will be installed in accordance with Part J6 of BCA2019.

Hydraulic Services Design Certification:

61. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
62. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS 2419.1:2005 as required, except where varied via Fire Engineering Performance Solution.
63. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2019 and AS 2441:2005.
64. A sprinkler system will be installed in accordance with Clause E1.5 of BCA2019, Specification E1.5 and appropriate part(s) of AS 2118.
65. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.

Mechanical Services Design Certification:

66. 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.
67. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS 1668.2:2012.
68. Every storey of the car park will be ventilated in accordance with Clause F4.11 of BCA2019 and where not naturally ventilated it will be mechanically ventilated in accordance with AS 1668.2:2012 as applicable.
69. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J5 of BCA2019
70. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

71. The material and forms of construction for the proposed works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2019 as follows:
    a. Dead and Live Loads – AS/NZS 1170.1:2002
    b. Wind Loads – AS/NZS 1170.2:2011
72. Earthquake actions – AS 1170.4:2007
73. Masonry – AS 3700:2018
74. Concrete Construction – AS 3600:2018
75. Steel Construction AS 4100:1998
76. Aluminium Construction – AS/NZS 1664.1 or 2:1997
77. Timber Construction – AS 1720.1:2010
78. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
79. The FRL's of the structural elements for the proposed works have been designed in accordance with Specification C1.1 of BCA2019, including Table 3 for a building of Type A Construction, including Table 4, for a building of Type B Construction, including Table 5, for a building of Type C Construction.
80. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
81. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2019 to reinstate the FRL of the element concerned.

Lift Services Design Certification:

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

83. 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.

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

85. 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.

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

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

NSW Specification Design Certificate:

88. Materials, floor and wall linings/coverings, surface finished and air-handling ductwork used in the works will comply with the fire hazard properties in accordance with Clause C1.10, NSW Clause C1.10, Specification C1.10 and NSW Specification C1.10 of BCA2019.

89. The building will be separated in accordance with Clause C2.5, and NSW Clause C2.5(b)&(h) of BCA2019.

90. Doorways and other openings in internal walls required to have an FRL will be protected in accordance with Clause C3.11, and NSW Clause C3.11(d) of BCA2019.

91. The number of exits provided to the building will be in accordance with Clause D1.2 and NSW Clause D1.2(d)(vii) of BCA2019.

92. The discharge points of exits will be in accordance with Clause D1.10, and NSW Clause D1.10(f) of BCA2019.

93. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6, and NSW Clause D1.6(f)(vi)&(j) of BCA2019.

94. Stair geometry to the new stairways will be in accordance with Clause D2.13, and NSW Clause D2.13(a)(ix)(x)(xi) of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a nosing strip with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.

95. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15, and NSW Clause D2.15(d)&(e) of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge leads to a flight below.

96. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, NSW Clause D2.16 & NSW Table D2.16a 1 and D2.17 of BCA2019.

97. The doorways and doors will be in accordance with Clause D2.19, NSW Clause D2.19(b)(v) and D2.20 of BCA2019.

98. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D2.21 and NSW Clause D2.21(c)&(d) of BCA2019.

99. A smoke detection and alarm systems will be installed throughout the building in accordance with Table E2.2a, NSW Table E2.2a and NSW Specification E2.2a of BCA2019.

100. Exit signage will be installed in accordance with Clause E4.5, NSW Clause E4.6, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.

101. The building will be mechanically ventilated in accordance with Clause F4.5, NSW F4.5(b) of BCA2019 and AS 1668.2:2012.