MUSEUMS DISCOVERY CENTRE EXPANSION
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX U
BUILDING CODE OF AUSTRALIA COMPLIANCE STATEMENT

Consult Code Solutions

NSW GOVERNMENT

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Project:	**MUSEUMS DISCOVERY CENTRE CASTLE HILL** **PROPOSED BUILDING J**
Report:	**BCA ASSESSMENT REPORT**
Reference:	**2019-0001-r3**
Date:	**8 September 2020**
Client:	**Department of Premier and Cabinet**

DOCUMENT CONTROL

Revision	**Date**	**Filename:**	2019-0001
2019-0001-r1	01/02/2019	**Description:**	Initial BCA Assessment Report
2019-0001-r2	03/08/2020	**Description:**	Updated BCA Assessment Report
2019-0001-r3	08/09/2020	**Description:**	Final BCA Assessment Report
			Prepared by
		Name:	**Sean Connolly** Accredited Certifier Grade A1, No BPB0070 Building Regulations Consultant
		Signature:	

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PART 1 BASIS OF ASSESSMENT

1.1 Introduction

The report supports a State Significant Development (SSD) Application for the proposed construction and use of a new building to facilitate the expansion of the Museums Discovery Centre (MDC) site at 2 Green Road, Castle Hill.

The proposed building will provide expanded facilities to accommodate the Powerhouse collection including spaces for storage, conservation, research and display and spaces to facilitate increased public access to the collection through education, public programs, workshops, talks, exhibitions and events. The expansion of the existing MDC facility within the site at 2 Green Road Castle Hill will integrate with the existing MDC site located at 172 Showground Road, Castle Hill and its operations on a permanent basis.

The subject building will consist of new three storey structure building as shown on the design documentation listed in Annexure A of this report as the new Building J which will cater for the following uses:

- Storage for the Powerhouse collection and archives (both collected archives and institutional archives).
- Flexibles spaces for education and public programs, workshops, talks, exhibitions and events.
- Suites of conservation laboratories and collection work spaces.
- Photography, digitisation and collection documentation facilities.
- Work space for staff, researchers, industry partners and other collaborators. This will include amenities, meeting and storage rooms, collection research and study areas as well as other ancillary facilities.
- Components of the image and research library.
- Object and exhibition preparation, packing, quarantine and holding areas.

The development proposal also includes-

- Site preparation works, including the termination/relocation and installation of site services and infrastructure, tree removal (337 trees in total), earthworks, and the erection of site protection hoardings and fencing.
- Demolition of existing car park and vehicle accessway along the eastern and north eastern parts of the site. A new at-grade car park is proposed to be constructed on the eastern side of the TAFE site and will accommodate 24 car parking spaces removed from the Building J site.
- Construction of new vehicle accessways to maintain connectivity to the MDC and TAFE sites.
- Subdivision of the proposed Building J site from the TAFE site including creation of right-of-carriageway easement to facilitate access over the new realigned accessway by TAFE vehicles and consolidation to form a single lot with the existing MDC site.

1.2 Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA2019, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve BCA compliance.

1.3 Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume 1 - Building Code of Australia, 2019 Edition (BCA) incorporating the State variations where applicable.

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.

(d) the Disability Discrimination Act 1992 including the Disability (Access to Premises – Buildings) Standards 2010 including the Access provisions in Parts D3 and F2.4 of the BCA;

(e) the Energy Efficiency requirements in Section J of the BCA;

(f) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Water Supply Authority, Electricity Supply Authority, WorkCover, Roads and Maritime Services (RMS), Council and the like; and

1.5 Design Documentation

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

PART 2 BUILDING DESCRIPTION

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

2.1 Rise in Storeys (Clause C1.2)

The building has a rise in storeys of Three (3)

2.2 Classification (Clause A3.2)

The building has been classified as follows.

Class	Description
5	Offices
7b	Storage
8	Workrooms & Laboratories
9b	Public Exhibition

2.3 Effective Height (Clause A1.1)

The building has an effective height of less than 25.0 metres.

2.4 Type of Construction Required (Table C1.1)

Type A Construction.

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

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

- Class 5 & 9b - Maximum Floor Area 8,000 m^2
  Maximum Volume 48,000 m^3
- Class 7b & 8 - Maximum Floor Area 5,000 m^2
  Maximum Volume 30,000 m^3

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2.6 Climate Zone (Clause A1.1)

The building is located within Climate Zone 6.

PART 3 ESSENTIAL FIRE SAFETY MEASURES

The following fire safety measures are required to be installed in the building.

Item	Proposed Essential Fire Safety Measure	Minimum Standard of Performance
1.	Access panels, doors and hoppers to fire resisting shafts	BCA2019 Clause C3.13
2.	Automatic fail safe devices (optional)	BCA2019 Clause D2.21, AS1670.1-2018 and Manufacturer's Specification
3.	Automatic fire suppression system (sprinkler system)	BCA2019 Clause E1.5, AS2118.1-2017
4.	Emergency lighting	BCA2019 Clauses E4.2 & E4.4, AS2293.1-2018
5.	Exit signs	BCA2019 Clauses E4.5, E4.6 & E4.8, AS2293.1-2018
6.	Fire dampers	BCA2019 Specification C3.15, AS/NZS1668.1-2015, AS1682.1 & 2
7.	Fire doors	BCA2019 Spec C3.4, AS1905.1-2015
8.	Fire hose reel system	BCA2019 Clause E1.4, AS2441-2005
9.	Fire hydrant system	BCA2019 Clause E1.3, AS2419.1-2005
10.	Fire seals protecting openings in fire resisting components of the building	BCA2019 Clause C3.15, AS1530.4-2005
11.	Fire shutters (optional)	BCA2019 Spec C3.4, AS1905.2-2005
12.	Fire windows (optional)	BCA2019 Spec C3.4
13.	Lightweight Fire Rated Construction (optional)	BCA2019 Clause / Specification C1.8
14.	Mechanical air handling systems	BCA2019 Clause F4.5, F4.11, AS/NZS1668.2-2012
15.	Paths of travel, stairways, passageways or ramps	BCA2019 Section D
16.	Portable fire extinguishers	BCA2019 Clause E1.6, AS2444-2001
17.	Required (automatic) exit doors (optional)	BCA2019 Clause D2.19, AS1670.1-2018
18.	Wall wetting sprinkler and drencher system (optional)	BCA2019 Clause C3.4
19.	Warning and operational signs	BCA2019 Clause D2.23, EP&A Reg. 2000 Clause 183
20.	Fire Engineering Performance based 'Alternative Solution' report	To be advised at Construction Approval Stage

PART 4 FIRE RESISTANCE LEVELS

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

Type A Construction

Item	Class 5 or 9b	Class 7b or 8
Loadbearing External Walls • less than 1.5m to a fire source feature • 1.5 – 3m from fire source feature; • more than 3m from a fire source feature.	120/120/120 120/90/90 120/60/30	240/240/240 240/240/180 240/180/90
Non-Loadbearing External Walls • less than 1.5m to a fire source feature • 1.5 – 3m from fire source feature; • more than 3m from a fire source feature.	-/120/120 -/90/90 -/-/-	-/240/240 -/240/180 -/-/-
External Columns • Loadbearing • Non-loadbearing	120/-/- -/-/-	240/-/- -/-/-
Fire Walls	120/120/120	240/240/240
Stair and Lift Shafts • Loadbearing • Non loadbearing	120/120/120 -/120/120	240/120/120 -/120/120
Internal walls bounding sole occupancy units • Loadbearing • Non loadbearing	120/-/- -/-/-	240/-/- -/-/-
Internal walls bounding public corridors, hallways and the like: • Loadbearing • Non loadbearing	120/-/- -/-/-	240/-/- -/-/-
Ventilating, pipe garbage and the like shafts: • Loadbearing • Non loadbearing	120/90/90 -/90/90	240/120/120 -/120/120
Other loadbearing internal walls, beams trusses and columns	120/-/-	240/-/-
Floors	120/120/120	240/240/240
Roofs [1]	120/60/30	240/90/60

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

PART 5 BCA COMPLIANCE ASSESSMENT

5.1 General

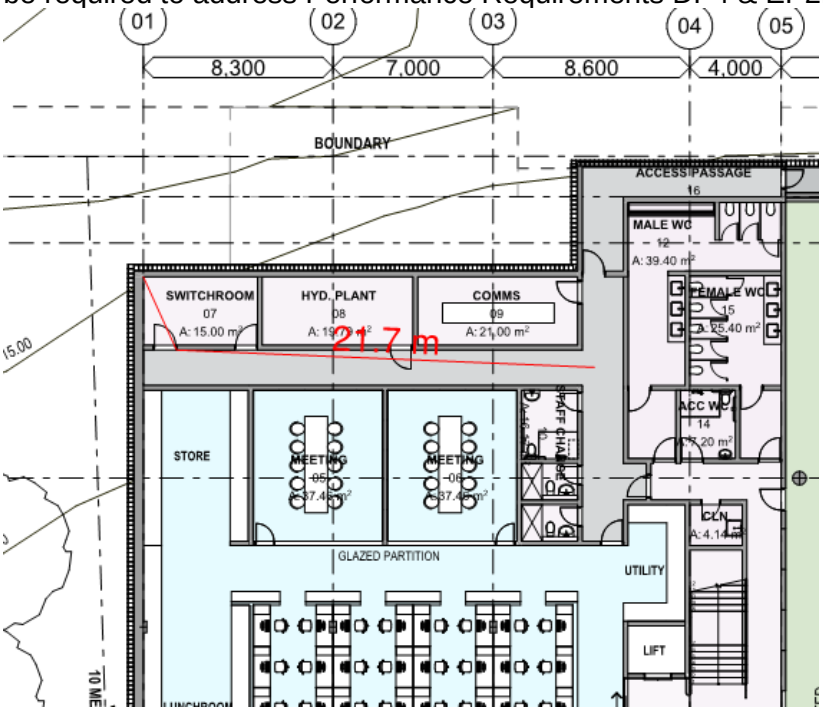
Assessment of the Architectural design documentation against the Deemed-to-Satisfy Provisions of the Building Code of Australia, 2019 (BCA) has revealed the following areas where compliance with the BCA may require further consideration and/or may involve assessment as Performance Based (Fire Engineered)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

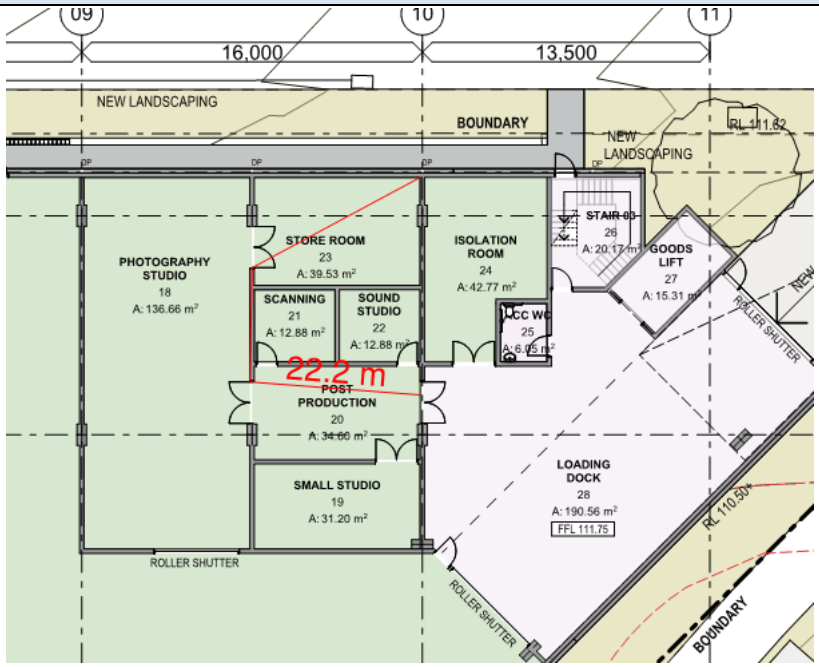
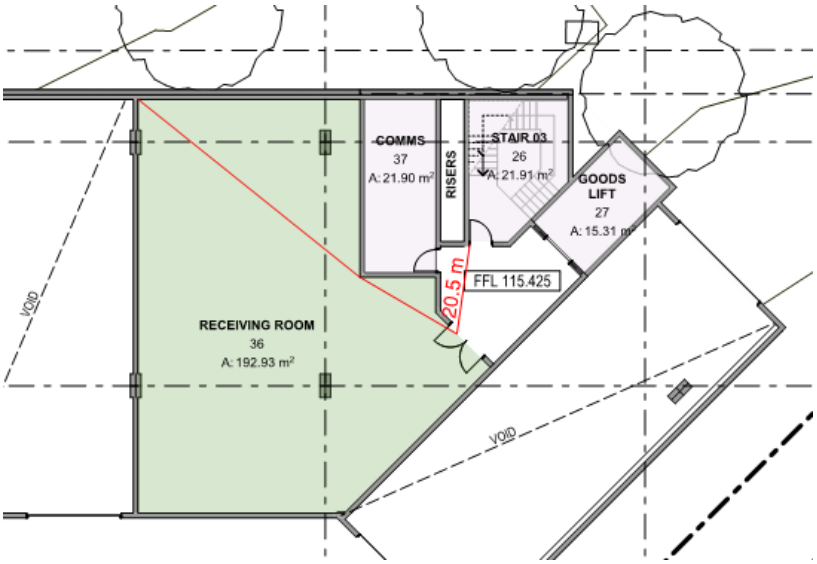
Annexure B to this report provides a detailed assessment of the proposal against all relevant Deemed-to-Satisfy Provisions of the BCA.

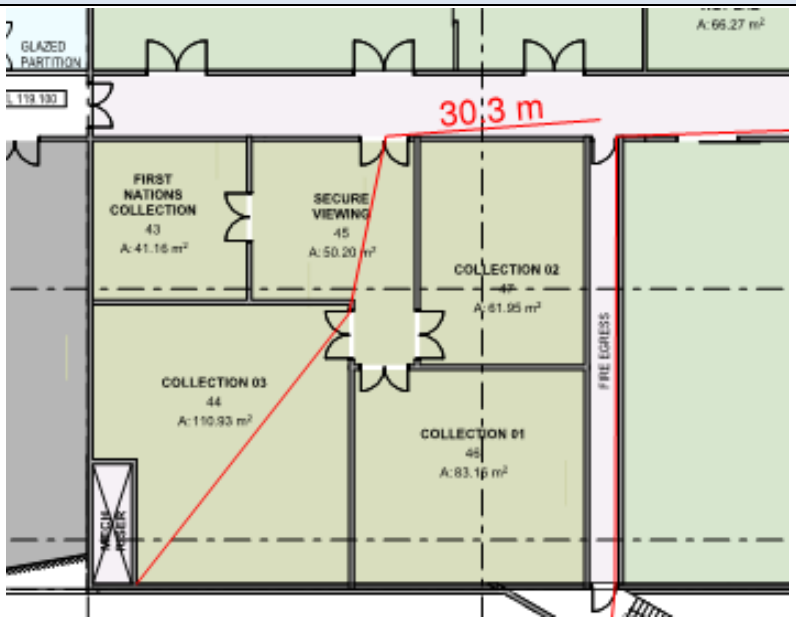
5.2 Performance Based Design – Performance Solutions

There are specific aspects of the design which do not comply with the strict Deemed-to-satisfy provisions of the BCA. These matters will need to be addressed in a detailed Fire Engineering Performance based 'Alternative Solution' report to be prepared for this development under separate cover at the Construction Approval Stage:

Item	Description of Performance Solution	DTS Provision
1	**Fire-resistance of Building Elements** The fire resisting construction (FRL's) of building elements is required to be in accordance with those prescribed Table 3 of Specification C1.1. It is understood that the FRL's of some of building elements will not be in accordance with Table 3 of Specification C1.1**.** A performance based 'Alternative Solution' will be required to address Performance Requirements CP1 & CP2.	Clause / Specification C1.1
2	**Separation of Fire Walls** The fire wall on gridline 05 on each storey is required to achieve an FRL as per Specification C1.1 for a building required to be of Type A Construction i.e. 240/240/240 FRL. However, this fire wall is proposed to be a glazed wall in parts and only have an FRL of 2 hours which does not comply with Clause C2.7 & Specification C1.1 A performance based 'Alternative Solution' will be required to address Performance Requirements CP1 & CP2.	Clause C2.7 & Specification C1.1

Item	Description of Performance Solution	DTS Provision
3	**Doorways in Fire Walls** A doorway in a fire wall must be protected by a fire door or fire shutter which has an FRL of not less than that required by Specification C1.1 for the fire wall. As the fire wall along gridline 05 is proposed to only have an FRL of 2 hours rather than 4 hours as per Specification C1.1, the doors in this wall will not have the FRL prescribed in Specification C1.1 A performance based 'Alternative Solution' will be required to address Performance Requirements CP2 & CP8.	Clause C3.5
4	**Exit Travel Distances (D1.4)** No point on the floor should be more than 20m from an exit or from a point where a choice of exits is available with the maximum travel distance to one of those exits being 40m. Travel distances exceed the clause requirement in the following areas and therefore, a performance based 'Alternative Solution' will be required to address Performance Requirements DP4 & EP2.2.  **Lower Ground Floor**	Clause D1.4

Item	Description of Performance Solution	DTS Provision
	 **Lower Ground Floor**  **Ground Floor**	

Item	Description of Performance Solution	DTS Provision
	 **Level 1 Floor**	
5	**Distance Between Alternative Exits** Travel distances between alternative exits should not be more than 60m. Travel distances exceed the clause requirement in the following areas and therefore, a performance based 'Alternative Solution' will be required to address Performance Requirements DP4 & EP2.2.  **Level 1 Floor**	Clause D1.5

Item	Description of Performance Solution	DTS Provision
6	**Travel by Non Fire-Isolated Stairways or Ramps** The maximum distance of travel to a road or open space is 80m when using a non-fire isolated exit stairway. Travel distances exceed the clause requirement in the following areas and therefore, a performance based 'Alternative Solution' will be required to address Performance Requirements DP4, DP5 & EP2.2.	Clause D1.9
7	**Travel by Fire isolated Exits** Doorways opening into fire isolated stairways must be from either a public corridor, public lobby, sanitary compartment, airlock or a sole occupancy unit occupying the whole of the storey. The access doors to Stair 01 on Level 1 and Ground Floor do not comply with this clause as these doors do not open directly from a public corridor, lobby or the like. A performance based 'Alternative Solution' will be required to address Performance Requirements DP4 & DP5.	Clause D1.7
8	**Weatherproofing** Performance Requirement FP1.4 requires that a roof and external wall (including openings around windows and doors) must prevent 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 There are no Deemed-to-Satisfy provisions for this Performance Requirement and as such a performance based 'Alternative Solution' will be required to address Performance Requirement FP1.4.	N/A
9	**Fire-resistance of Building Elements of the existing TAFE Block F** The fire resisting construction (FRL's) of building elements is required to be in accordance with those prescribed Table 3 of Specification C1.1. The proposal to create a new allotment boundary which is less than 18m from the external walls of the existing TAFE Block F will result in a non-compliance with the Deemed-to-Satisfy provisions of Clause C1.1 of the BCA.- See Part 6 of this report A performance based 'Alternative Solution' will be required to address Performance Requirements CP1 & CP2.	Clause / Specification C1.1

5.3 BCA Statement of Compliance

The architectural design documentation as referred to in this report has been assessed against the applicable provisions of the Building Code of Australia, (BCA) and it is considered that such documentation is capable of complying with that Code subject to the following being prepared at the Construction Approval Stage for the development :-

- the details outlined in Annexure B of this report being addressed and shown in the detailed design documentation for the project, and

- the preparation of a Fire Engineering Performance Based 'Alternative Solution' Assessment Report being prepared to address the Performance Solutions outlined in Part 5.2 of this report.

Signed,

Sean Connolly
Consult Code Solutions
Accredited Certifier Level A1 - BPB 0070

PART 6 IMPACTS ON THE ADJACENT TAFE SITE

6.1 General

Following an inspection on 18/06/2020 it can be revealed that the TAFE buildings in the vicinity of the proposed new boundary would have the following BCA Types of Construction (see the attached plan mark-up):-

Block B

Two storey double brick construction and more than 3m from the proposed new boundary i.e. a Fire Source Feature (FSF)

Being of double brick the external walls would satisfy the requirements for Type A Construction and as the walls are more than 3m from a FSF no protection of the openings (windows and doors) in the external walls is required

Block A

Two storey double brick construction and more than 3m from the proposed new boundary i.e. a Fire Source Feature (FSF)

Being of double brick the external walls would satisfy the requirements for Type A Construction even if the proposed new boundary (FSF) is closer that 3m.

If the proposed new boundary is to be located within 3m of this building then the openings in those walls that are within 3m of the proposed new boundary will require protection in accordance with BCA Clause C3.2. However, the subject new boundary appears to be greater than 3m from the existing wall of Block A and as such no protection of the openings would be required.

Covered Ramps

The covered ramps (Concrete ramps supported on streel structure with metal roof cover) are independent Class 10b structures, being separate from the buildings which they attach i.e., Blocks A, B & F.

The covered ramps being Class 10b structures are not required to be fire rated and will not impact on the proposed new boundary location.

Block F

Two storey building, with external walls in some parts brick veneer and in other parts lightweight metal sheet cladding.

This building which is required to be of at least Type B Construction would currently comply with the BCA given that the nearest FSF is more than 18m away (BCA Spec C1.1).

Also the openings in the external walls of this building do not require protection as they are not less than 3m from a FSF.

However, the proposed new eastern boundary re-alignment towards the TAFE site will result in the existing western walls and parts of the northern and southern walls of Block F being within

18m of a FSF ie the proposed new allotment boundary, if assessed under the Deemed-to-Satisfy provisions of the BCA such external walls would be required to be fire rated.

BCA Specification C1.1 requires that the loadbearing parts of external walls that are within 18m of a FSF must have an FRL of 120minutes. Non-load bearing parts of the external walls that are more than 3m from a FSF do not require an FRL.

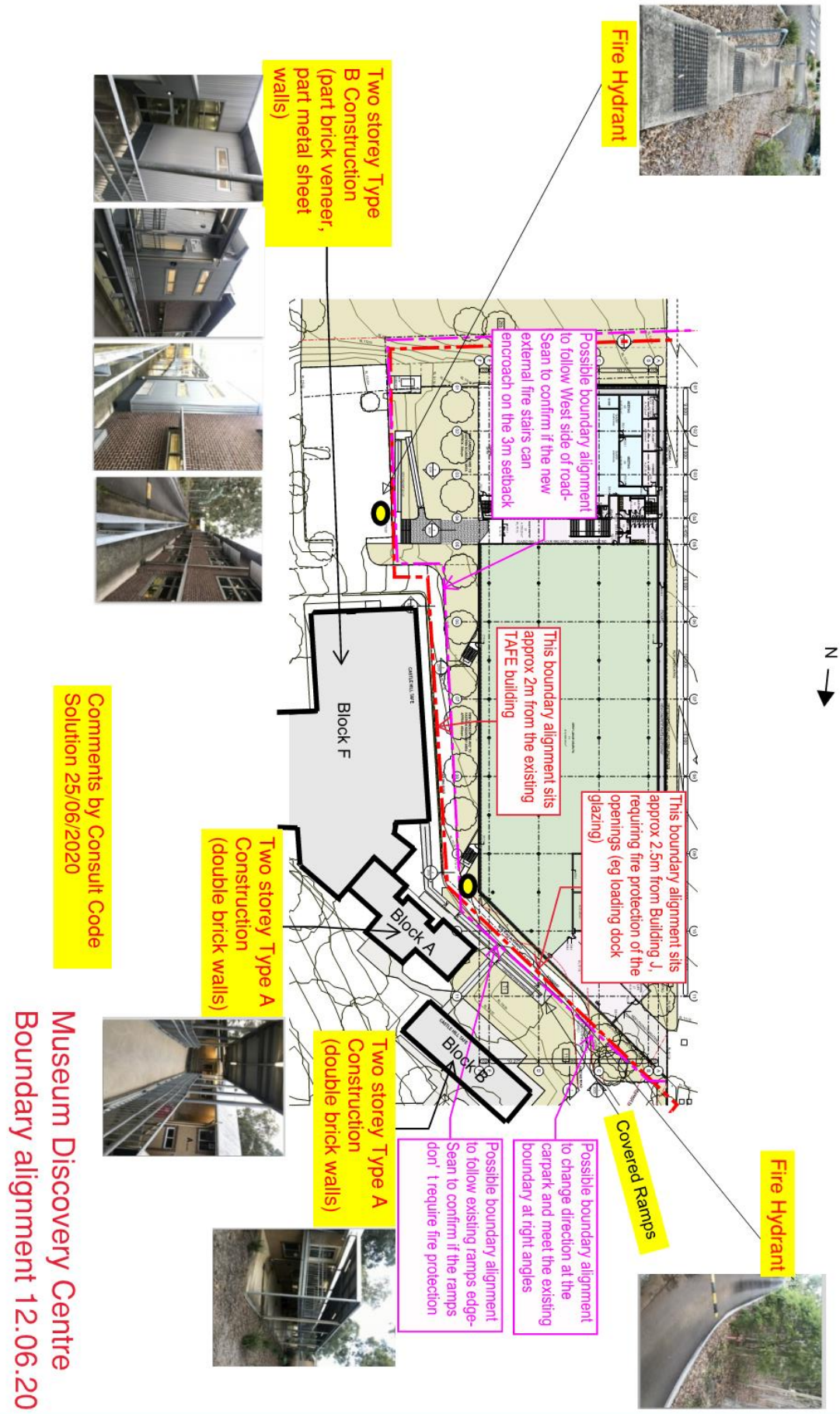
Therefore, the proposal to create a new allotment boundary which is less than 18m from the external walls of the existing TAFE Block F will result in a non-compliance with the Deemed-to-Satisfy provisions of Clause C1.1 of the BCA.

However, provided the external walls of the new Building J is located at least 6m away from the external walls of any of the existing TAFE buildings it is considered that a Performance Based Fire Engineered Alternative Solution could be developed to justify compliance with the Performance Requirements of the BCA.

Fire Hydrants

Also during our inspection, it was noticed that two existing fire hydrants that would serve the existing TAFE buildings are located either within the area or in close proximity to the area proposed for the new allotment. - see the attached plan mark-up.

The need to relocate one or more of these fire hydrants will need to be investigated.



Comments by Consult Code Solutions 25/06/2020

ANNEXURE A

DESIGN DOCUMENTATION

This report has been based on the following design documentation.

Architectural Plans Prepared by Lahznimmo Architects		
Drawing Number	**Revision**	**Title**
A-DA-1100	07	Existing Site Plan
A-DA-1101	12	Proposed Site Plan
A-DA-1102	01	Site Carpark Plan
A-DA-1200	01	Site Demolition Plan
A-DA-1400	12	Lower Ground Floor Plan
A-DA-1401	12	Ground Floor Plan
A-DA-1402	14	Level 1 Floor Plan
A-DA-1403	11	Level 2 Floor Plan
A-DA-1404	05	Roof Plan
A-DA-2000	09	Elevations
A-DA-2001	09	Elevations
A-DA-3000	11	Sections

ANNEXURE B

DETAILED ASSESSMENT OF THE DEEMED-TO-SATISFY PROVISIONS OF BCA2019

BUILDING ASSESSMENT

Outlined below is a detailed assessment of 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 tables.

N/A	-	Not Applicable. The Deemed-to-Satisfy clause does not apply to the subject building.
Complies	-	The relevant provisions of the Deemed-to-Satisfy clause have been satisfied by the proposed design.
CRA	-	'COMPLIANCE READILY ACHIEVABLE'. It is considered that there was not enough information included in the documentation to accurately determine strict compliance with the individual clause requirements. However, subject to noting the requirements of each clause, compliance can be readily achieved. This information may be included in other documentation, which was not forwarded to this office for assessment, such as door schedules, electrical, mechanical and hydraulic design documentation or architectural specifications.
FI	-	Further Information is necessary to determine the compliance potential of the building design.
AS	-	Alternative 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 SUMMARY

Clause	Comment	Status
SECTION B: STRUCTURE		
PART B1 – STRUCTURAL PROVISIONS		
B1.0: Deemed-to-Satisfy Provisions	Noted	-
B1.1: Resistance to Actions	For Information Only – Structural Engineers design required.	CRA
B1.2: Determination of Individual Actions	Structural Engineers design required.	CRA
B1.4: Determination of Structural Resistance of Materials and Forms of Construction	Structural Engineers design required.	CRA
B1.5 Structural Software	Structural Engineers design required.	CRA
SECTION C: FIRE RESISTANCE		
PART C1 – FIRE RESISTANCE AND STABILITY		
C1.0: Deemed-to-Satisfy Provisions	Noted	-
C1.1: Type of Construction Required	Type A	CRA
C1.2: Calculation of Rise in Storeys	Three (3) NB: the roof level plant room is not counted in the rise in storeys if it contains only heating, ventilation or lift equipment etc	Noted
C1.3: Buildings of Multiple Classification	Class 5, 7b & 8	Noted
C1.4: Mixed Types of Construction	Whole building is required to be in Type A Construction	Noted
C1.8: Lightweight Construction	Lightweight construction may be used to achieve required fire resistance levels. Should lightweight construction be proposed it is to comply with Specification C1.8.	CRA
C1.9: Non-combustible building elements	Sets out building elements which are required to be non-combustible.	CRA
C1.10: Fire Hazard Properties	Fire hazard indices to comply with Specification C1.10.	CRA
C1.14: Ancillary elements	Sets out where ancillary elements are required to be non-combustible.	Noted
PART C2 - COMPARTMENTATION AND SEPARATION		
C2.0: Deemed-to-Satisfy Provisions	Noted	-
C2.1: Application of Part	Noted	-
C2.2: General Floor Area and Volume Limitations	Fire compartment sizes must not exceed 5,000m^2 in floor area and 30,000m^3 in volume for Class 7b & 8 areas and 8,000m^2 in floor area and 48,000m^3 in volume for Class 5 & 9b areas. Assuming the wall along gridline 05 is a fire wall and each level on the northern side of gridline 05 is its own separate fire compartment with fire separation at floor level the maximum floor area and volumes will not be exceeded.	CRA
C2.6 Vertical Separation of Openings in External Walls	No spandrel separation is required where windows in external walls are above each other as the building is sprinkler protected.	N/A
C2.7: Separation by Fire Walls	The fire wall on Grid line 05 should achieve an FRL as per Specification C1.1 i.e. 240/240/240 The fire wall along gridline 05 is proposed to be a glazed wall in parts and only have an FRL of 2 hours. A Fire Engineered "Alternative Performance Based Solution' will be required.	AS
C2.8: Separation of Classifications in the Same Storey	Each building element in the storey must have the higher FRL prescribed in Specification C1.1 for the classification concerned.	CRA
C2.9: Separation of Classifications in Different Storeys	The floor between adjoining parts must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey.	CRA

SECTION C: FIRE RESISTANCE		
C2.10: Separation of Lift Shafts	To have FRL's as prescribed in Specification C1.1.	CRA
C2.11: Stairways and Lifts in One Shaft	Lift and stair to be in separate shafts.	Complies
C2.12: Separation of Equipment	Equipment including lift motor rooms, emergency generators sustaining emergency equipment operating in emergency mode, central smoke control plant, boilers or battery areas are required to be fire separated from the remainder of the building by construction having an FRL of 120/120/120.	CRA
C2.13: Electricity Supply System	Any electricity sub stations proposed or main switchboard which sustains emergency equipment operating in an emergency mode must be separated by construction having an FRL of 120/120/120	CRA
PART C3 – PROTECTION OF OPENINGS		
C3.0: Deemed-to-Satisfy Provisions	Noted	-
C3.1: Application of Part	Noted	-
C3.2: Protection of Openings in External Walls	Openings in an external wall which is less than 3m to a boundary or 6m to another building on the allotment must be protected in accordance with Clause C3.4 Dimensions on the site plan indicate that the proposed distance that the new building will be from the proposed new allotment boundary will be more than 3m.	N/A
C3.3: Separation of External Walls and Associated Openings in Different Fire Compartments	Openings in external walls in separate fire compartments require protection if they are within the distances specified in Table C3.3	N/A
C3.4: Acceptable Methods of Protection	Where protect required by C3.2 or C3.3, one of the acceptable methods of protection i.e., fire windows, fire shutters, fire doors, external wall wetting drenchers on fixed windows etc will be required.	NA
C3.5: Doorways in Fire Walls	Doorways in Fire Walls to have FRL as per Spec C1.1 and clause requirements. As the fire wall along gridline 05 is proposed to only have an FRL of 2 hours the doors in this wall will not have the FRL prescribed in Specification C1.1 A Fire Engineered "Alternative Performance Based Solution' will be required.	AS
C3.6: Sliding Fire Doors	No sliding fire doors proposed	N/A
C3.7: Protection of Doorways in Horizontal Exits	Horizontal Exits to have FRL as specified and swing in the direction of egress. - No H/E are proposed.	N/A
C3.8: Openings in Fire-isolated Exits	Doorways to be -/60/30 FRL self-closing or automatic closing fire doors	CRA
C3.9: Service Penetrations in Fire-isolated Exits	No services other than as permitted by this clause are permitted within fire isolated exits.	Noted
C3.10: Openings in Fire-isolated Lift Shafts	Lift landing doors to have -/60/- FRL	CRA
C3.11: Bounding Construction: Class 2, 3 and 4 Buildings	N/A to this building	N/A
C3.12: Openings in Floors and Ceilings for Services	Services passing through floors to be in fire rated shafts or appropriately fire stopped.	CRA
C3.13: Openings in Shafts	Openings in fire rated shafts to be protected as per clause requirements	CRA
C3.15: Openings for Service Installations	Any openings in fire rated construction must be in accordance with Specification C3.15	CRA

SECTION C: FIRE RESISTANCE		
C3.16: Construction Joints	Any construction joints openings in fire rated construction must be in accordance with Specification C3.15	CRA
C3.17: Columns Protected with Lightweight Construction to Achieve an FRL	Columns protected by light weight construction need to achieve an FRL not less than the FRL for the element it is penetrating.	CRA
SPECIFICATION C1.1 – FIRE-RESISTING CONSTRUCTION		
2.0: General Requirements	Noted	-
2.1: Exposure to Fire-Source Features	For Information only	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.	Noted
2.3: Lintels	Lintels to have the FRL required for the wall in which it is situated	CRA
2.4: Attachments Not to Impair Fire-resistance	Attachments to building elements not to impair fire-resistance.	CRA
2.5: General Concessions	Concessions apply as per this Clause	Noted
2.6: Mezzanine Floors: Concession	Concessions apply for Mezzanine floors not exceeding 1/3 of floor area of room or 200m^2	N/A
2.7: Enclosure of Shafts	Fire rated shafts are required to be enclosed, at the top and bottom, with construction having a FRL required for the walls of a non-load-bearing shaft in the same building, unless the shaft extends beyond the roof covering, with the exception of fire isolated stair and lift shafts that are to have lids with a FRL regardless.	CRA
2.8: Carparks in Class 2 and 3 Buildings	Not applicable to this building	N/A
2.9: Residential Aged Care Building: Concession	Not applicable to this building	N/A
3.0: Type A Fire-resisting Construction	Noted	-
3.1: Fire-resistance of Building Elements	The FRL's of all elements should be in accordance with those prescribed Table 3 of Specification C1.1. It is understood that the FRL's of some of building elements will not be in accordance with Table 3. A Fire Engineered "Alternative Performance Based Solution' will be required.	AS

SECTION D: ACCESS AND EGRESS		
PART D1 – PROVISION FOR ESCAPE		
D1.0: Deemed-to-Satisfy Provisions	Noted	-
D1.1: Application of Part	Noted	-
D1.2: Number of Exits Required	At least 2 exits are required per storey	Complies
D1.3: When Fire-Isolated Stairways and Ramps are Required	All exits stairways which serve up to 3 storeys are not required to be fire isolated exits	Noted
D1.4: Exit Travel Distances	No point on the floor is to be more than 20m to an exit or to a point where a choice of exits is available with the maximum travel distance to one of those exits being 40m. Travel distances will exceed the clause requirement and therefore a Fire Engineered "Alternative Performance Based Solution' will be required.	AS
D1.5: Distance Between Alternative Exits	Distances between alternative exits not to be more than 60m.	AS

SECTION D: ACCESS AND EGRESS		
	Travel distances will exceed the clause requirement and therefore a Fire Engineered "Alternative Performance Based Solution' will be required.	
D1.6: Dimensions of Exits and Paths of Travel to Exits	The dimensions of exit doors (min 750mm) and paths of travel to exits (min 1,000mm) to be shown on drawings	CRA
D1.7: Travel via Fire-Isolated Exits	Doorways opening into fire isolated stairways must be from either a public corridor, public lobby, sanitary compartment, airlock or a sole occupancy unit occupying the whole of the storey. The access doors to Stair 01 on Level 1 and Ground Floor do not comply with this clause as these doors do not open directly from a public corridor, lobby or the like. and therefore a Fire Engineered "Alternative Performance Based Solution' will be required .	AS
D1.8: External Stairways or Ramps in Lieu of Fire-Isolated Exits	N/A as no stairways are required to be FIS	N/A
D1.9: Travel by Non Fire-Isolated Stairways or Ramps	The maximum distance of travel to a road or open space is 80m when using a non-fire isolated exit stairway. Travel distances will exceed the clause requirement and therefore a Fire Engineered "Alternative Performance Based Solution' will be required.	AS
D1.10: Discharge from Exits	Exits not to be blocked at the point of discharge	CRA
D1.11: Horizontal Exits	Horizontal Exits must have clear area on the other side of the fire wall which is capable of accommodating the total number of persons based on 0.5m^2	CRA
D1.12: Non-Required Stairways, Ramps or Escalators	N/A	N/A
D1.13: Number of Persons Accommodated	The populations of the various areas as advised by the client would be as follows :- <u>Lower Ground Floor</u> • Staff Area 60 desks = 60 people • Area north of Grid 05 = Nil additional population as the staff undertaking work in this area are accommodated in the admin space or other exiting office areas in other buildings. <u>Ground Floor</u> • Flexible Area (755m2) @4m2 PP = 189 people • Receiving Room = Nil additional population as the staff undertaking work in this area are accommodated in the admin space or other exiting office areas in other buildings. <u>Level 1 Floor</u> • Viewing Rooms (28.8 + 38.5 = 67.3m2) @4m2 PP = 17 people • Area north of Grid 05 = Nil additional population as the staff undertaking work in this area are accommodated in the admin space or other exiting office areas in other buildings.	Noted
D1.14: Measurement of Distances	Information only.	Noted
D1.15: Method of Measurement	Information only.	Noted
D1.16: Plant Rooms, Lift Motor Rooms and electricity network substations: Concession	Access to roof top plant can be in accordance with AS1657	CRA
D1.17: Access to Lift Pits	Access to the lift pit is assumed to be through the bottom landing doors as the pit is assumed to be less than 3m deep.	CRA

SECTION D: ACCESS AND EGRESS		
PART D2 – CONSTRUCTION OF EXITS		
D2.0: Deemed-to-Satisfy Provisions	Noted	-
D2.1: Application of Part	Noted	-
D2.2: Fire-Isolated Stairways and Ramps	Stairways in fire isolated shaft to be non-combustible and will not cause structural damage to the shaft if there is local failure	CRA
D2.3: Non-Fire-Isolated Stairways and Ramps	external stairs to be either reinforced concrete or steel not less than 6m thick.	CRA
D2.4: Separation of Rising and Descending Stair Flights	No connection permitted between rising and descending stairways	CRA
D2.5: Open Access Ramps and Balconies	No open access ramps or balconies required.	N/A
D2.6: Smoke Lobbies	No smoke lobbies required.	N/A
D2.7: Installations in Exits and Paths of Travel	EDB & services cupboard enclosures to be bounded by a non-combustible or fire protective covering and smoke seals provided around the perimeter of the doors.	CRA
D2.8: Enclosure of Space Under Stairs and Ramps	No enclosures permitted under fire isolated stairways or if below non-fire isolated stairs need to be 60/60/60 FRL	CRA
D2.9: Width of Stairways and Ramps	Information only	Noted
D2.10: Pedestrian Ramps	The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586.	CRA
D2.11: Fire-Isolated Passageways	Fire-Isolated Passageways to comply with the FRL requirements for a fire isolated stairway.	CRA
D2.12: Roof as Open Space	If exit discharges to roof the roof must have and FRL of 20/120/120	CRA
D2.13: Goings and Risers	Goings and Risers to have geometry in accordance with Clause requirements Stair treads are to have a nosing strip with a slip-resistance classification in accordance with AS 4586.	CRA
D2.14: Landings	Landings to have a strip at the edge of the landing with a slip-resistance classification in accordance with AS 4586.	CRA
D2.15: Thresholds	Threshold ramps and step ramps in a building are required to be accessible in accordance with Part D3.	CRA
D2.16: Balustrades or Other Barriers	Balustrades to be 1000mm high as per clause requirements	CRA
D2.17: Handrails	A required exit (fire isolated or non-fire isolated) serving an area required to be accessible must be fitted with handrails in accordance with Clause 12 of AS1428.1.	CRA
D2.18: Fixed Platforms, Walkways Stairways and Ladders	To be in accordance with AS1657-2013	CRA
D2.19: Doorways and Doors	If power operated must be manually openable under a force of not more than 110 N & connected to a fire trip.	CRA
D2.20: Swinging Doors	Exit doors to swing in direction of egress.	CRA
D2.21: Operation of Latch	Lever action door handles are required to all doors.	CRA
D2.22: Re-entry from Fire-Isolated Exits	N/A to this building	N/A
D2.23: Signs on Doors	Required signage 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.	CRA
PART D3 - ACCESS FOR PEOPLE WITH A DISABILITY		
See the separate Access Assessment Report		

SECTION E: SERVICES AND EQUIPMENT		
PART E1 – FIRE FIGHTING EQUIPMENT		
E1.0: Deemed-to-Satisfy Provisions	Noted	-
E1.3: Fire Hydrants	Hydrants are required in accordance with AS2419.1 to serve the building Hydraulic Engineers design of Hydrant System is required	CRA

SECTION E: SERVICES AND EQUIPMENT		
E1.4: Fire Hose Reels	Fire Hose Reels are required in accordance with AS2441. Hydraulic Engineers design of FHR System is required	CRA
E1.5: Sprinklers	As building would be considered as an Occupancy of excessive hazard due to the materials stored a sprinkler system in accordance with Specification E1.5 is required. Hydraulic Engineers design of Sprinkler System is required	CRA
E1.6: Portable Fire Extinguishers	PFE required in accordance with AS2444	CRA
E1.8: Fire Control Centres	Not required in this building	N/A
E1.9: Fire Precautions During Construction	Information only. Whilst the building is under construction there is to be not less than one fire extinguisher provided at all times to each storey.	Noted
E1.10: Provision for Special Hazards	Suitable additional provisions may be required if special problems of firefighting could arise due to the nature or quality of material stored or used.	CRA
PART E2 – SMOKE HAZARD MANAGEMENT		
E2.0: Deemed-to-Satisfy Provisions	Noted	-
E2.1: Application of Part	Noted	-
E2.2: General Requirements (including Tables E2.2a and E2.2b)	The installation of a sprinkler system will satisfy the requirements for Smoke Hazard Management	CRA
E2.3: Provisions for Special Hazards	Suitable additional provisions for Smoke Hazard Management may be required due to the nature or quality of material stored or used.	CRA
PART E3 – LIFT INSTALLATIONS		
E3.0: Deemed-to-Satisfy Provisions	Noted	-
E3.1: Lift Installations	Electric passenger lifts to comply with Specification E3.1	CRA
E3.2: Stretcher Facility in Lifts	Stretcher lift facility is not required	N/A
E3.3 Warning against use of lifts in a fire	Sign as per clause is required at every lift landing	CRA
E3.4: Emergency Lifts	Not required for this building	N/A
E3.5: Landings	Access and egress to and from lift landings to comply with Section D	CRA
E3.6: Passenger Lifts	To be in accordance with Table E3.6a & Table E3.6b	CRA
E3.7: Fire Service Controls	A fire service recall control switch that complies with Clause 3.9 below is to be provided in the lift.	CRA
E3.8: Aged Care Buildings	N/A to this building	N/A
E3.9: Fire Service Recall Operation Switch	The fire service control switch is to comply with this clause.	CRA
E3.10: Lift Car Service Drive Control Switch	The lift car fire service control switch is to comply with this clause.	CRA
PART E4 – EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS		
E4.0: Deemed-to-Satisfy Provisions	Noted	-
E4.2: Emergency Lighting Requirements	Emergency lighting is to be installed in every fire-isolated exit, each floor level, common corridor and the like.	CRA
E4.3: Measurement of Distance	Information Only	
E4.4: Design and Operation of Emergency Lighting	To comply with AS 2293.1-2005.	CRA
E4.5: Exit Signs	Exits signs are to be provided above or adjacent to a door providing egress as well as directional signage throughout the entire development where necessary.	CRA
E4.6: Direction Signs	Where an exit is not readily apparent a directional sign is to be installed indicating the direction of egress being primarily within the carpark areas.	CRA
E4.7: Class 2 and 3 Buildings and Class 4 Parts: Exemptions	For Information Only	Noted
E4.8: Design and Operation of Exit Signs	To comply with AS 2293.1-2005 and/or Specification E4.8.	CRA

SECTION E: SERVICES AND EQUIPMENT		
E4.9: Sound Systems and Intercom Systems for Emergency Purposes	N/A to this building	N/A

SECTION F: HEALTH AND AMENITY		
PART F1 – DAMP AND WEATHERPROOFING		
F1.0: Deemed-to-Satisfy Provisions	Noted	-
F1.1: Stormwater Drainage	Stormwater drainage to comply with AS 3500.3.	CRA
F1.4: External Above Ground Membranes	Waterproofing membranes for external above ground use to comply with AS 4654 Parts 1 and 2.	CRA
F1.5: Roof Coverings	Metal roof sheeting to comply with AS1562.1	CRA
F1.6: Sarking	The sarking is to comply with AS 4200.	CRA
F1.7: Water Proofing of Wet Areas in Buildings	Waterproofing to wet areas to comply with AS 3740.	CRA
F1.9: Damp-proofing	Moisture is to be prevented from reaching the walls above a damp-proof course, and the underside of the suspended floors.	CRA
F1.10: Damp-proofing of Floors on the Ground	A vapour barrier in accordance with AS 2870 must be installed.	CRA
F1.11: Provision of Floor Wastes	In Class 2 or 3 buildings or Class 4 part of a building, a bathroom or laundry is to have a floor waste where the floor is graded to the floor waste to permit the drainage of water.	CRA
F1.12: Sub-floor Ventilation	Sub floor space to be in accordance with clause requirements	CRA
F1.13: Glazed Assemblies	Glazed assemblies are to comply with AS 2047 and AS 1288.	CRA
PART F2 – SANITARY AND OTHER FACILITIES		
F2.0: Deemed-to-Satisfy Provisions	Noted	-
F2.1: Facilities in Residential Buildings (including Table F2.1)	N/A to this building	N/A
F2.2: Calculation of Number of Occupants and Facilities	See Clause D1.13 for the population,	Noted
F2.3: Facilities in Class 3 to 9 Buildings (including Table F2.3)	The public facilities shown will accommodate up to 700 people.	Noted
F2.4: Accessible Sanitary Facilities (including Table F2.4)	See the separate Access assessment Report	Noted
F2.5: Construction of Sanitary Compartments	Doors & partition to sanitary compartments to extend 1.8m above the floor	CRA
F2.6: Interpretation: Urinals and Washbasins	For Information - A urinal = 600mm of continuous trough	Noted
F2.8: Waste Management	N/A to this class of building	N/A
PART F3 – ROOM SIZES		
F3.0: Deemed-to-Satisfy Provisions	Noted	-
F3.1: Height of Rooms and Other Spaces	Generally, 2.4m ceiling height required, 2.1 in corridors, sanitary compartments, store rooms, etc. Commercial Kitchen 2.4m	CRA
PART F4 – LIGHT AND VENTILATION		
F4.0: Deemed-to-Satisfy Provisions	Noted	-
F4.1: Provision of Natural Light	N/A to this building	N/A
F4.2: Methods and Extent of Natural Lighting	N/A to this building	N/A
F4.3: Natural Light Borrowed From Adjoining Room	N/A to this building	N/A
F4.4: Artificial Lighting	Artificial Lighting System to Comply AS/NZS 1680.0 Electrical Engineers design is required.	CRA
F4.5: Ventilation of Rooms	Natural or Mechanical Ventilation required Mechanical Engineers Design is required	CRA
F4.6: Natural Ventilation	Openings not less than 5% of the floor area of the room required	CRA
F4.7: Ventilation Borrowed From Adjoining Room	Natural ventilation may come through an opening in an adjoining room as per clause requirements	CRA

SECTION F: HEALTH AND AMENITY		
F4.8: Restriction on Position of Water Closets and Urinals	A toilet cannot open directly into a kitchen, dining room, restaurant, room for public assembly or a workplace normally occupied by more than one person	Complies
F4.9: Airlocks	Airlock must have floor area of not less than 1.1m^2 and fitted with self-closing doors, or Mechanical ventilation to the toilet is required	CRA
F4.11: Carparks	No carpark proposed	N/A
F4.12: Kitchen Local Exhaust Ventilation	No commercial kitchen proposed.	N/A
PART F5 – SOUND TRANSMISSION AND INSULATION		
F5.0: Deemed-to-Satisfy Provisions	Noted	-
F5.1: Application of Part	N/A to this building	N/A

SECTION G: ANCILLARY PROVISIONS		
PART G1 - MINOR STRUCTURES AND COMPONENTS		
G1.0: Deemed-to-Satisfy Provisions	Noted	-
G1.1: Swimming Pools	N/A to this building	N/A
G1.2: Refrigerated Chambers, Strong-Rooms and Vaults	To have door, latches, lighting indicators and lamps as per clause requirements	CRA
G1.3 Outdoor Play Spaces		
NSW G1.101: Provision for Cleaning of Windows	As the building is greater than 3 storeys, provision for the cleaning of the windows in a safe manner is required. Full details of means of window cleaning to be provided.	CRA
PART G2 - HEATING APPLIANCES, FIREPLACES, CHIMNEYS AND FLUES		
G2.0: Deemed-to-Satisfy Provisions	Noted	-
G2.2: Installation of Appliances	N/A to this building	N/A
G2.3: Open Fireplaces	N/A to this building	N/A
G2.4: Incinerator Rooms	N/A to this building	N/A
PART G3 - ATRIUM CONSTRUCTION		
G3.1: Atriums Affected by this Part	N/A to this building	N/A
PART G4 – CONSTRUCTION IN ALPINE AREAS		
G4.0: Deemed-to-Satisfy Provisions	Noted	-
G4.1: Application of Part	N/A to this building	N/A
PART G5 – CONSTRUCTION IN BUSHFIRE PRONE AREAS		
G5.0: Deemed-to-Satisfy Provisions	Noted	-
G5.1: Application of Part	Subject to separate Planning requirements	Noted

SECTION J: ENERGY EFFICIENCY
A Section J Assessment Report is required at the Construction Approval Stage