GROUPDLA

Building Code of Australia 2019 Amendment 1

Report for BCA Compliance Assessment of Design

PROJECT NAME: Brisbane Water Legacy Village Apartments

DATE: 22 September 2021

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Revision History

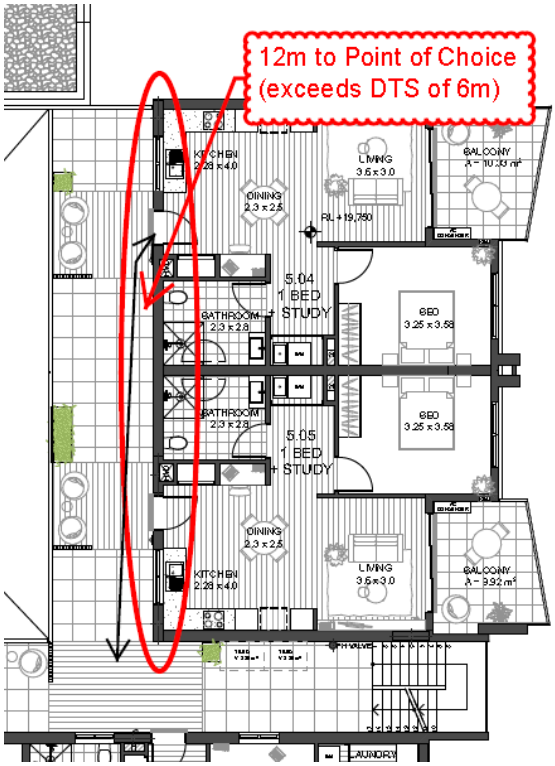
Revision	Revision Date	Details	Authorised	
			Name	Position
A	18.2.2021	Initial BCA Review	Charles Slack-Smith	Director
B	30.3.2021	BCA Report for DA Stage	Charles Slack-Smith	Director
C	17.9.2021	BCA Report for DA Stage	Charles Slack-Smith	Director
D	22.9.2021	BCA Report for DA Stage plan update	Charles Slack-Smith	Director

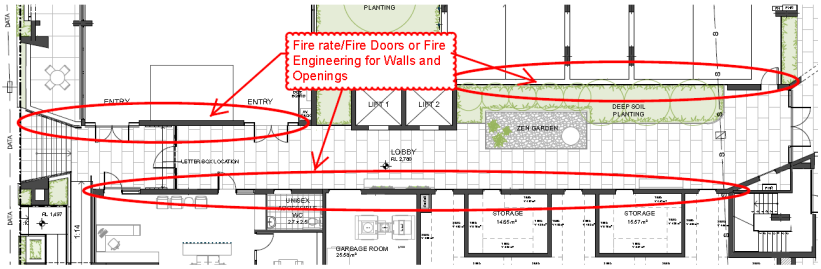
1.0 Executive Summary

Table below provides a summary of the identified areas that need to be resolved / clarified in the design as it progresses from into DA / Detailed Design stages.

Detailed Design Clarification Elements

Item No.	DTS Non- Compliance	Suggested Resolution	BCA Clause
1	Use of Building/Areas – Assumptions the basis of the BCA Assessment report Apartments – the report has assessed these as being Class 2 Units (not Class 3 Accommodation for the Aged), in order to do this we have assumed the following: • Assumed no residential aged care assessments or RACS numbers being applied for the building. • Assumed that there will be less than 10% of the Occupants that need physical assistance to conduct daily activities or to evacuate the building - i.e. all persons in there are physically capable to conduct their daily activities - eating, dressing, shopping etc and can evacuate without assistance. • Assumed that no Residential Care is being provided / or applied for to Govt for the Apartment building. • Assumed that the Units are not Accommodation for the Aged, but each unit/apartment is an individual dwelling. Use of Communal Rooms / Bars It has been assumed for the purpose of this report that the Ground Floor communal room and Bar, and other communal areas in the building are for Apartment owners use only and not open to the public to use/frequent.	Assumptions to be confirmed by the Applicant to the Certifier for the Construction Certificate	Part A6
3	Lift Shaft Ventilation/Cooling Being a partially exposed lift shaft the lift consultant is to advise on the requirements of Clause 4 of BCA Spec E3.1 for the cooling of the lift shaft, to ensure that the lift shaft does not exceed 40 Degrees C, if this requires a ventilation system then the Lift Consultant and Mechanical Consultant are to liase and detail the required ventilation system to achieve the temperature and air change rate requirements of this clause of the Specification.	Lift Consultant or Mechanical Consultant Design Solution to provide to the Certifier	Part E3
4	Open Stairs to Building The Open Stairs serve more than 2 storeys are required to be fire isolated stairs or External Stairways to BCA Clause D1.8) The Proposed design does not achieve compliance with either of these requirements, however it is expected for this to be the subject of Fire Engineering such that a design change is not required.	Fire Safety Engineering Performance Solution	D1.8

Item No.	DTS Non- Compliance	Suggested Resolution	BCA Clause
5	Egress Travel Distances The Upper levels are provided with the following travel distances that exceed the requirements of BCA Clause D1.4 and D1.5 as follows: • Fifth Floor – Two (2) of the 1 Bed Units have doors that are more than 6m to a point of Choice (approx. 12m) and also pass by another Unit without protection to BCA Clause C3.11 as per below.  	Fire Safety Engineering Performance Solution	C3.11, D1.4
6	Spandrels – As the Building is not proposed to be sprinkler protected to AS 2118.1-2017 and is Type A Construction Spandrels or Balcony projections need to be designed to comply with BCA Clause C2.6. ***Important Note***: to not provide Spandrels the Sprinklers need to be a BCA Clause E1.5 and AS 2118.1-2017 compliant Sprinkler system, the provision of a FPAA101D and Spec E1.5a system does not negate the provision of Spandrels.	Fire Engineered Solution to resolve Details to be provided to the Certifier as part of the CC Assessment.	C2.6
7	External Wall Detail Being a Type A Construction building all part of the external wall are to compliant with BCA Clause C1.9 and C1.14 (non-combustible) This applies to the following elements: • External wall lining material/cladding materials	Details to be provided to the Certifier as part of the CC Assessment.	C1.9, C1.14

Item No.	DTS Non- Compliance	Suggested Resolution	BCA Clause
	• Insulation materials • Sarking materials (or concession compliant) • Weatherproofing elements • Internal lining, and internal attachments to the external walls including blinds. • Acoustic Linings to the inside of external walls • Ancillary elements to the outside wall as detailed in C1.14 • Signage to the external walls Detailed assessment of these requirements will be required as the design progresses, including details of the minor elements to be confirmed.		
9	**Fire Rated Walls and Fire Doors to Class 2 portions – Ground Floor** This Clause requires Doors from SOU to a public corridor, public hallway to be protected by -/60/30 FRL Fire Doors to AS 1905.1 and BCA Clause C3.11. The Ground Floorhas numerous Uses and areas opening off the Public lobby/corridor, it is unknown if all will be fire rated to achieve a FRL of 90/90/90 FRL (or -/60/60 FRL if nonloadbearing), Areas of note are as per below Diagram. 	Fire Engineered Solution proposed	C3.11, Spec C1.1
10	Sprinkler System – as the Building exceeds a Rise in Stories of Four (4) and is under 25m (TBC) the details of the Sprinkler system proposed is to be confirmed: • ~~NSW E1.5, AS 2118.1-2017 and BCA Spec E1.5a , OR~~ • NSW E1.5, FPAA101D and Spec E1.5a OR • ~~NSW E1.5, FPAA101H and Spec E1.5a~~ Note: Only a BCA Spec E1.5 and AS 2118.1-2017 system gives concessions for things such as Spandrels and Stair connections etc, the lesser systems do not give any concessions in the BCA DTS provisions of the BCA. FPAS Accredited Design to confirm system proposed and confirmation for submission to the certifier at the CC Stage.	FPAS Accredited Fire Services Consultant to confirm compliance to the Certifier as part of the CC Assessment.	E1.5
11	RAB Act and Building Commissioner Being a class 2 building, it falls within the purvey of the Building Commissioner and the RAB Act for OC Audits and the like, as well as the forthcoming Regulations. As such the Commissioner expects certain elements to be documented/detailed, examples include waterproofing details for wet areas, Balconies, External terraces. This may also drive additional documentation and consultant qualification requirements depending on the date of the CC, and OC for the building so is to be something to be aware of and is not a BCA matter but is raised for the Design and Construction Teams awareness.	Note Only	N/A

2.0 Introduction

The report is for the assessment of the Brisbane Water Legacy Residential Apartment Building to assess compliance with the Building Code of Australia 2019 Amendment 1 ("BCA"). A summary of all relevant clauses of the BCA is attached under Section 3.0.

The report is prepared based on a review of the developed documentation listed in this report only and the information provided by the client and is intended for their use only.

Reporting Team

The information contained within this report was prepared by Charles Slack-Smith, Accredited Certifier Grade A1 (BPB0378).

The report is prepared based on a desktop review of the available concept architectural documentation provided by the client and is intended for their use only.

BCA Version / Current Legislation

The applicable legislation governing the design of buildings is the Environmental Planning and Assessment Act 1979.

The relevant version of the BCA for a project is determined in accordance with clause 98 of the Environmental Planning and Assessment Regulation 2000 and is based on the date on which a valid Construction Certificate (CC) is **applied** for.

All new works are required to comply with the relevant BCA. Based on the proposed timing and program associated with the development, it is understood that the relevant version of the BCA applicable will be 2019 Amendment 1.

Fire Brigade Consultation

Clause A2.2 (4) of the BCA requires that a Performance Based Design Brief to be undertaken for any Fire Safety Engineering, including a FEBQ Referral to NSW Fire and Rescue is required, irrespective of the Fire Safety measures the subject of the Fire Safety Engineering process.

Fire & Rescue NSW ("FRNSW"): The EP&A Regulations 2000, Clause 144, requires this building to be referred to FRNSW. Clause 144 refers to EP&A Regs defined Category 2 Fire Safety Measures. If any of these measures are required to be considered as an alternative solution due to DtS non-compliances identified within a design, and the floor area of a fire compartment exceeds 2000 m^2 or the floor area of the building exceeds 6000 m^2, the Clause 144 referral to the FRNSW is required. This design is expected to contain DtS non-compliance Category 2 Fire Safety Measures or BCA Performance Requirements: EP1.3, EP1.4, EP1.6, EP2.2.

The process involves initial input from FRNSW at the Fire Engineering Brief Questionnaire ("FEBQ) stage and then formal Lodgement of the Performance Solution Report by the PCA. There are extensive delays being potentially up to 6 to 8 weeks in receiving initial input to the FEBQ stage, with the Clause 144 referral being subject to a 28 day period response or deemed acceptable approach in legislation.

Under recent changes to the official Clause 144 submission legislation, the brigade is required to respond within 10 days advising whether or not they will be proceeding with a review and providing the Initial Fire Safety Report. If so they have no more than 28 days form the initial to provide their report or the PCA can choose to invoke the provisions of Clause 144(6A)(c) and issue the Construction Certificate after 28 days of officially lodging the Clause 144 application; further consultation is required on this issue. This may see a requirement for a peer review by an independent C10 accredited fire safety engineer.

At this stage in the design, we recommend a robust FEBQ (preliminary briefing process) take place with FRNSW, to identify any concerns they may have with the current design. Any feedback will then form part of the Final Fire Engineering Report (FER).

Limitations & Exclusions

1. This assessment is limited to the developed documentation at the date of this report and as referenced within the "Documentation Assessed" section of the Report, further assessment will be required as the design progresses in detail and does not represent a completed BCA assessment of the design/construction.

2. Our assessment does not extend to a review of compliance with respect to the Disability (Access to Premises – Building) Standards 2010 or Disability Discrimination Act (DDA), Section J Assessments, or Fire Engineering or other form of performance solution.
3. The information provided is preliminary in nature and intended for the clients use only. Distribution to external authorities is not permitted unless express approval by the Author is given.
4. Report excludes assessment of any Performance Solutions, being Fire Engineering, Section J or Weatherproofing of External walls.

3.0 Building Description

The Building

The new Brisbane Water Legacy Residential Apartment Building will be a development fronting Mason Parade at Point Frederic.

Building Particulars

Building Use:	Apartments, Car Park and Office Uses
Class of Occupancy:	Class 2, 5 and 7a Note 1: Storage/Cage/Garbage areas is approx. 62m2, which is less than 10% of the ground floor fire compartment/storey of 1530m2 so has not been separately classified / assessed as per BCA A0.6.
Rise in Storeys:	Seven (7)
Levels Contained:	Seven (7)
Type of Construction:	Type A
BCA Effective Height:	20.18m BCA Effective Height
Climate Zone:	Five (5)
Fire Compartments:	Fire Compartment 1 - Ground Floor of 1500m2, however is connected via void to other levels, forming one fire compartment
Total Building Size	8,855m2 Approx. (Floor Area)
Importance Value	Importance Level 3 (As not Low Rise Residential)
Earthquake Design Category (AS 1170.4)	EDC II (TBC by Structural Engineer as part of the CC Documentation)

Important notes re Above:

Effective Height - Determination of the BCA effective height for the building has been measured from the floor level of the lowest level used to determine the rise in storeys to the topmost floor of the building as per the definition in Schedule 3 of the BCA.

Documentation Assessed / Referenced Information

The following architectural drawings prepared by Integrated Design Group were assessed and relied upon as part of this report.

Architectural Drawing	Drawing Number	Revision	Date
Site Plan	0100	R	12/3/2021
Ground Floor Plan	1100	S	12/3/2021
First Floor Plan	1101	T	12/3/2021
2nd Floor Plan	1102	S	12/3/2021
3rd Floor Plan	1103	S	12/3/2021
4th Floor Plan	1104	S	12/3/2021
5th Floor Plan	1105	S	12/3/2021
6th Floor Plan	1106	Q	12/3/2021
Roof Plan	1107	B	12/3/2021
West Elevation	2000	L	12/3/2021
North Elevation	2001	K	12/3/2021
South Elevation	2002	K	12/3/2021
East Elevation	2003	L	12/3/2021

4.0 BCA Requirements

The following assessment will provide an overview of compliance with the deemed to satisfy (DTS) provisions of the BCA 2019, and identify issues that require attention at this particular stage of the development.

Design is to be designed, specified and installed to comply with the following requriements :

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
Part B1	Structural Engineer is to design and confirm compliance of the proposed structure to the requirements of BCA Part B1, Part C and Specification C1.1 of the BCA 2019 for the proposed development as a Type A Construction and Earthquake Design Category II Building. ***Note***: The Importance level and annual probability of exceedance tables in BCA 2019 are to be used and not AS 1170 Importance levels for Wind, Snow, Ice and Earthquake listed in the relevant standards as per BCA Clause B1.2 c)
Part C1	Structural Engineer is to design and confirm compliance of the proposed structure to the requirements of BCA Part B1, Part C and Specification C1.1 of the BCA 2019 for the proposed development as a Type A Construction and Earthquake Design Category II Building. ***Note***: The Importance level and annual probability of exceedance tables in BCA 2019 are to be used and not AS 1170 Importance levels for Wind, Snow, Ice and Earthquake listed in the relevant standards as per BCA Clause B1.2 c)
Clause B1.2	Non-Structural Elements – Architect, Services Consultants, Lift Consultant are to ensure that their design achieves compliance with AS 1170.4, in particular Section 8 of AS 1170.4 as referenced in BCA 2019 for the non-structural elements of the design as the building is an Earthquake Design Code II as a minimum which requires compliance with Section 8 for the non-structural elements.
B1.4	Architect and Consultants as relevant are to ensure that their design and specifications include the requirements of BCA Clause B1.4 and the listed standards and requirements listed.
B1.4 h) i)	Termite Protection – should timber be proposed for any primary building elements then protection is to be designed / specified to achieve compliance with this BCA Clause and AS 3660.1-2014 as referenced. Note: Should timber be proposed then to be identified to the BCA / Fire Engineering consultant to review and determine if fire safety engineering or design changes are required.
B1.6	Flood Hazard Area – for the purpose of this BCA report it has been assumed that the site is not in a Flood Hazard Area as defined by the BCA. If the site is a Flood Hazard Area then it is required to be designed and built to comply with BCA Clause B1.6 and the referenced ABCB Standard of Construction of Buildings in Flood Hazard Areas. Design Certification from the relevant Structural Engineer is to be provided to the Certifier as complying with BCA Clause B1.6.
C1.8	If lightweight fire rating material is issued for walls or protection of steel columns or the like then it must be designed, specified and constructed to achieve compliance with BCA C:aise C1.8 and Spec C1.8
Clause 2.4 of Spec C1.1, or Clause 3.1 of Spec C1.1	In accordance with Spec C1.1, Type A Construction requirements are to be provided throughout. Generally, this will see most major building elements to Ground Floor (External walls, Internal Walls, Floors, Columns and Shafts) require an inherent Fire Resistance Level (FRL) of 120/120/120 (2 hours) (Refer – Spec C1.1 and Table 3 of Appendix A of NCC 2019) For First Floor and above (External Walls, Internal Walls, Floors, Columns and Shafts) require an inherent Fire Resistance Level (FRL) of 90/90/90 FRL (1.5 hours) (Refer – Spec C1.1 and Table 3 of Appendix A of NCC 2019)

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	The proposed roof of the building need not be fire rated where its covering is non-combustible, as long as the ceiling immediately below the roof has a resistance to incipient spread of fire ceiling of not less than 60mins (RISF 60 Ceiling) Walls separating Units will require an FRL of 90/90/90 (load bearing) and -/60/60 FRL for non-loadbearing walls). Internal Walls that are fire rated are to extend to the floor slab above/below, or on the top floor extend to the ceiling if it achieves the required RISF of 60mins and not to the underside of the roof sheeting. Loadbearing Internal walls and Loadbearing fire walls are required to be constructed of concrete or masonry. Floors – to achieve a minimum of 120/120/120 FRL Fire rating for the 1st Floor Level over the office, carpark and communal area, and all other floors in the building top achieve a min of 90/90/90 FRL as required by Clause C2.9 and BCA Spec C1.1 for floors Loadbearing External Walls and External Columns are to be fire rated to comply with Table 3 and the requirements of BCA Spec C1.1. Public Corridor to Ground floor -the corridor/hallway on ground floor between the office and the Class 2 communal area is to comply with Table 3 of BCA Spec C1.1 and achieve a fire rating of 60/60/60 FRL on the Communal Hall (Class 2) side. Non-load bearing walls located within 3m of the allotment boundary or adjoining buildings need to be fire rated as per Table 4 of BCA Spec C1.1. Any Building elements that provide direct vertical or lateral support to another part that requires an FRL then the supporting part must also be fire rated (See Clause 2.2 of BCA Spec C1.1 for details for support of another part) Lintels are to be designed and specified and constructed to comply with BCA Clause 2.3 of BCA Spec C1.1 If any finish lining or other attachment is proposed to a building element that requires an FRL then the fixing of these elements, services, linings etc must not impair the FRL of the fire resistance of that element attached to. Enclosure of Shafts (lift shaft, Stair Shaft, Services Shafts or the like are to be a shaft that achieves a fire rating of 120/120/120 FRL, and be enclosed top and bottom (unless slab on ground) with a fire rating of 120/120/120 FRL and to comply with BCA Clause C2.10, Spec C1.1 and BCA Clause C3.10 for the shaft, and door openings etc. Note: In the BCA whenever it requires an element to achieve an FRL it needs to be fire rated in both directions inside and outside, up or down, and not is one direction only, the only exception to this is RISF Ceilings and limited elements in Type C Construction. The above provides a precis of requirements, detailed compliance and confirmation of compliance will need to be confirmed by the Structural Engineer for compliance as Type B Construction to BCA Part C1 and Spec C1.1 of the BCA. **Cladding / External Walls Important Note:** Any proposed combustible materials or composite aluminium panels to the façade are to be verified as complaint with BCA, and either compliant as defined in AS 1530.1 or deemed non-combustible in accordance with BCA Clause C1.9 and C1.14 Please note, in light of recent PI insurance matters affecting the industry the attainment of a performance assessment by the Fire Safety Engineer may not be available for this matter and DTS compliance may be required by the engaged certifier for the development.

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
C1.1	Type of Construction – the building has a rise in storeys of Seven (7) for the purpose of BCA Clause C1.2. The Building is to be designed and constructed to comply with all of the requirements for a Type A building under this clause and associated Specification.
C1.9	NON-COMBUSTIBLE BUILDING ELEMENTS – the Design is to achieve compliance with the following below requirements, as such the exact make-up of the external walls and the load bearing elements proposed for the building will need to be detailed at the CC stage to the engaged certifier. As the design progresses and at the Construction Certificate Stage a detailed statement may be required, including test reports of AS 1530.1 compliance of each element will be required to demonstrate compliance of the design, and then if any are swapped or changed the contractor will need to advise the certifier and update the statement to ensure compliance with this requirement of the BCA. **BCA Clause C1.9 – Non-Combustible Building Elements** (a) In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible: (i)External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (ii)The flooring and floor framing of lift pits. (iii)Non-loadbearing internal walls where they are required to be fire-resisting. (b)A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in— (i)a building required to be of Type A construction; and (ii)a building required to be of Type B construction, subject to C2.10, in— (A)a Class 2, 3 or 9 building; and (B)a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys. (c)A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification C1.1. (d) The requirements of (a) and (b) do not apply to the following: (i)Gaskets. (ii)Caulking. (iii)Sealants. (iv)Termite management systems. (v)Glass, including laminated glass. (vi)Thermal breaks associated with glazing systems. (vii)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

<table>
<tr><th>BCA CLAUSE</th><th>COMPLIANCE REQUIREMENT (DTS)</th></tr>
<tr><td></td><td>(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.

<u>Further Information:</u>
• Details of external wall, flooring and floor framing of lift pits & non-loadbearing internal walls make up are to be submitted at the CC Stage to the Certifier to ensure compliance is able to be achieved being non-combustible for lining, insulation materials and attachments, including signage</td></tr>
<tr><td>C1.10/ Spec C1.10</td><td>The Fire Hazard Properties of floor linings and floor coverings, wall and ceiling lining's, and other material as noted within Clause C1.10, must comply with the provisions of Specification C1.10 as noted in Table 7 below. It is recommended that the Fire Hazard Property Test Reports of the various linings and coverings are submitted to the certifier for a compliance check at CC lodgement if critical design elements, prior to ordering and prior to ordering of materials.
• Floor Coverings – tested to AS 9239.1 as listed in BCA 2019
(i) a critical radian flux of more than 2.2kW/m^2 (non-Sprinkler protected building)
(ii) a maximum smoke development rate of 750 percent minutes
• Internal Wall and Ceiling linings – tested to AS 5637.1 as listed in BCA 2019
(iii) a group number of 1, 2 or 3 for inside units, and Group 1 or 2 for public corridoors; and
(iv) a smoke growth rate index of not more than 100; or
(v) an average specific extinction area less than 250m^2/kg
Important Note: Linings to the inside of external walls need to be non-combustible, this includes blinds, joinery, and other linings etc on the inside of the external walls etc, so need to be considered by Architect for any linings, blinds, joinery etc to external walls or other walls that need to be non-combustible.

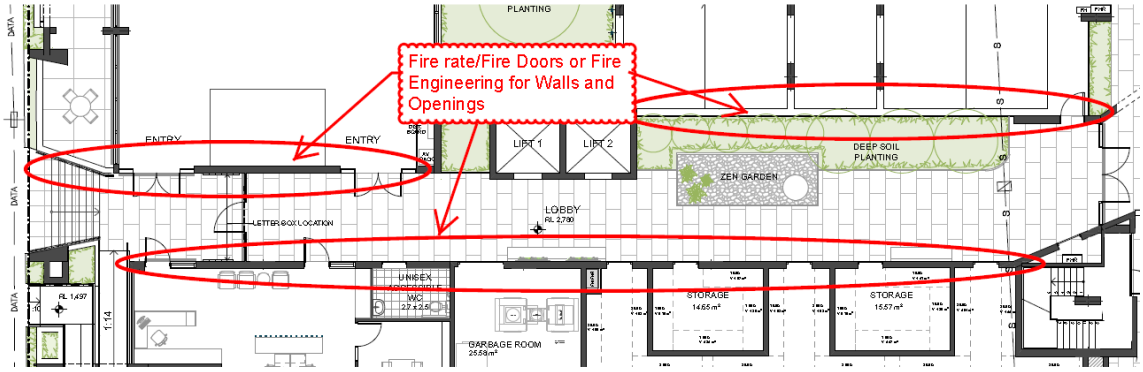
<table>
<tr><th>Item</th><th>Location</th><th>Requirement</th></tr>
<tr><td>Wall and ceiling linings</td><td>Public Corridors</td><td>Group Number 1 or 2</td></tr>
<tr><td>Wall and ceiling linings</td><td>Fire-isolated exits/Exit Stairs</td><td>Group Number 1</td></tr>
<tr><td>Wall linings</td><td>Units or Office, Communal Areas</td><td>Group Number 1 or 2 or 3</td></tr>
<tr><td>Ceiling linings</td><td>All Areas</td><td>Group Number 1 or 2 or 3</td></tr>
<tr><td>Internal Linings/ancillary elements to external walls</td><td>Studio / All other External Walls linings</td><td>Non-Combustible to AS 1530.1 or Fire Engineering</td></tr>
</table>
• Lift Cars linings -Floors to be CRF 2.2 or more, and Group 1 or 2 for wall and ceilings
• Air handling ductwork - Rigid /flexible ductwork must comply with the fire hazard properties set out in AS 4254etc
• Other Materials – There are other materials such as non-external wall insulation, Acoustic internal elements, listed in BCA Table 4 of Spec C1.10 to be complied with. Note external walls from inside to outside must be AS 1530.1 tested as non-combustible and this table has no application in that circumstance.
Note 3: This table is based on non-sprinkler protected building, and as always see BCA Clause C1.10 and Spec C1.10 for details the above is as a guide only the BCA is to be complied with.

Note 4: To be considered Sprinklered, the building must be provided with an AS 2118.1-2017 Sprinkler system, a lesser system such as a FPAA101D and Spec E1.5a system does not give the concession to call it a sprinkler protected building.</td></tr>
</table>

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	Further Information: Details of linings, including non-combustible linings to external walls are to be submitted at the CC Stage to the certifier to ensure compliance is able to be achieved with BCA Spec C1.10 and Clause C1.9 of the BCA. Note: For this Table of the BCA the building is to be considered to be a non-sprinkler protected building, as the sprinkler system proposed is not an AS 2118.1-2017 Sprinkler system which is required to achieve this concession.
C1.11	*Performance of external walls in fire* Concrete tilt up panels or precast panels are not indicated as proposed in the plans assessed nor are they compliant for this type of building, as such this clause has no application
C1.13	Fire protective timber – this proposed method of construction is not indicated on the plans as such this clause and similar in the BCA and as such has not been assessed. Note: to meet this DTS requirement all timber is to be enclosed in fire rated plasterboard and not be visible.
C1.14	Ancillary Elements – Any of these elements must achieve compliance with the requirements of this clause, details and test reports of proposed products include signage is required and is recommended to be clarified/confirmed prior to DA lodgement to ensure no modifications to the consent post approval is required. 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 as tested to AS 1530.1 or listed in BCA Clause C1.9 e). (b)A gutter, downpipe or other plumbing fixture or fitting. (c)A flashing. (d)A grate or grille not more than 2 m^2 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 i.e. statutory sign in the BCA or EPA Regulations. (h)A sign other than one provided under (a) or (g) that— (i)achieves a group number of 1 or 2; and (ii)does not extend beyond one storey: and (iii)does not extend beyond one fire compartment: and (iv)is separated vertically from other signs permitted under (h) by at least 2 storeys. (i)An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that— (i)meets the relevant requirements of Table 4 of Specification C1.10 as for an internal element; and (ii)serves a storey— (A)at ground level; or (B)immediately above a storey at ground level; and (iii)does not serve an exit, where it would render the exits unusable in a fire -Fire Safety engineering assessment required if this part of this clause is to be used/determined. (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). BCA Definition: Ancillary element means an element that is secondary to and not an integral part of another element to which it is attached. **Further Information:**

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	• Details of ancillary elements are to be submitted at the CC Stage to the certifier to ensure compliance is able to be achieved being non-combustible for lining, insulation materials and attachments, including signage and internal fixtures/linings to external walls. • Blinds affixed to the external walls are required to be non-combustible as tested to AS 1530.1, the use of timber blinds are not compliant if they are affixed to the external walls irrespective of the building being sprinkler protected or not.
C2.2, C2.3	Building achieves compliance as three (3) fire compartments and has not be assessed as a large isolated building See above for Fire compartment assessment and confirmation of compliance as Type B as assessed.
C2.6	Spandrels – as the building is Type A construction this clause is to be complied with for the external walls and openings of the building. **Further Information:** Details of the spandrel and balcony project make up/dimensions are to be detailed on the CC plans for submission to the certifier and are to be confirmed as compliant for the design.
C2.7	As the building has been assessed as three (3) fire compartments, internal fire walls are to be detailed to comply with BCA Clause C2.7. There is also no connection to other buildings depicted or proposed in the plans assessed, this included roof links or the like to other buildings. Note: Fire Engineering has been proposed for the multiple allotments as an option or can be via lot consolidation which need to be combined prior to the issue of any OC for the building. Note 2: fire rating for entertainment venue requirements / separation of theatre etc is not assessed in this clause as they are not fire walls as per this definition and is detailed / assessed in later parts of the BCA report. **Further Information:** • Fire Compartment Plans – provide fire compartment plans at the CC Stage of the design to indicate the location of Fire walls, including confirmation of compliance with BCA Clause C2.7 and Spec C1.1 of the BCA.
C2.8/C2.9	Separation of Classifications The building is mixed classifications for Type B construction; however, the loading dock use and storage uses are less than 10% so no impact/requirements to comply based on the A6.0 of the BCA application.
C2.10	Lift Shafts – the Lift for the building connects/passes through only two (2) storeys and as such are not required by this clause of the BCA to be fire rate. They may need to be fire rated lift shafts for fire compartmentation or fire engineering reasons, to be assessed at the CC stage of the design.
C2.12/C2.13	Equipment listed in this clause of the BCA, if provided, is to be fire separated by construction achieving FRL 120/120/120 (excluding openings to external where not within 3m of site boundary, fire source feature or other part of the building. Such equipment may include (but not limited to); • Lift motors and control panels • Emergency generators • Central smoke control plant • Boilers (as defined in the BCA) • Batteries exceeding 12 volts and 200 kWh (some UPS and larger battery arrays may exceed this, the electrical consultant to confirm if any proposed or required by the client in order for this to be identified for the construction) • Electrical substation • Main switchboard (which sustains emergency equipment) • Electrical conductors (supplying a substation or main switchboard above)

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
C2.14	Public Corridoors – due to the open nature of the corridoors on level 1 and above these have not been assessed or considered Public Corridors by definition in the BCA. Ground Floor Corridor – this is substantially open but is considered to be a Public Corridor due to the two sided enclosure and slab over, but is less than 40m as designed (approx. 35m) so this clause does not have application due to the length.
C3.2	Openings within external walls which are located within 3m of the side or rear allotment boundaries (fire source feature) are required to be protected in accordance with Clause C3.4 of the BCA (i.e. Drenchers, Fire Shutters, Fire Windows, Fire Doors). Openings within 6m of other buildings are also required to be protected. No openings are identified as being within 3m of the allotment boundaries or within the distances to other fire source features, should this occur then protection to BCA C3.4 is to be provided/constructed. **Information Required –** Dimensions setbacks to allotment boundaries and adjacent buildings/structures is to be detailed on the DA and CC plans to show separation distances.
C3.3	Protection of Openings between Fire Compartments There is only a single fire compartments on the ground level, as such no fire separation or protection of opening between fire compartments is required. Note: As clarified in the Guide to the BCA, separate SOU Units are not fire compartments to which this clause of the BCA applies.
C3.4	C3.4 Acceptable methods of protection (a)Where protection is required/referenced in other clauses of the BCA these doorways, windows and other openings must be protected as follows: (i)Doorways— (A)internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or (B)–/60/30 fire doors that are self-closing or automatic closing. (ii)Windows— (A)internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (B) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or (C)–/60/– automatic closing fire shutters. (iii)Other openings— (A)excluding voids — internal or external wall-wetting sprinklers, as appropriate; or (B)construction having an FRL not less than –/60/–. (b)Fire doors, fire windows and fire shutters must comply with Specification C3.4.
C3.8	*Stairs are indicated as open stairs, not fire isolated stairs, so this clause has no application, subject to fire engineering assessment as to requirements.* Doorways that open directly to fire isolated stairways or fire isolated passages (except those opening directly to open space), must be fitted with -/60/30 fire doors that are self-closing, or automatic closing. Further, in the event the design seeks to include windows within the external wall of a fire isolated stair or passage, protection complying with Clause C3.4 of the BCA (i.e. drenchers, fire shutters etc) must be provided to the glazing if it is within 6m of, and exposed to another opening in the building.
C3.9	No Stairs are proposed to be Fire isolated stairs as designed, so services in fire stairs is not applicable in this case, subject to fire engineering.
C3.10	Lift/s are required to be provided with fire rated lift landing doors (-/60/-) complying with AS1735.11 to maintain the adequacy of the isolated shaft if part of the fire compartmentation strategy. However, as it is expected for the lifts to be part of the lateral or direct support for the building, then they are load bearing and as such need to be designed and built to achieve a fire rating of 120/120/120 FRL as loadbearing walls.
C3.11	Fire Doors to Class 2 portions

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	This Clause requires Doors from SOU to a public corridor, public hallway to be protected by -/60/30 FRL Fire Doors to AS 1905.1 and BCA Clause C3.11. The Communal Room on Ground Floor, and Toilets, and Room behind Lift area has been assessed as a Class 2 portion of the building, as such the doors and openings from these rooms/areas are to comply with BCA Clause C3.11 and be self closing fire doors. This may be fire engineered to allow some or all of these doors and openings to the room, and toilets to be glazed or other non-fire rated construction. In addition the carpark either side, storage rooms etc all open to this Public Lobby/corridor which is not proposed to be fire rated, it is assumed this will be fire separated or the subject of fire safety engineering to maintain the open nature of the corridor. 
C3.12	Where services are proposed to pass through a floor that requires a fire rating (which this building does) then the services must be provided in a riser shaft that will not reduce the fire rating of the floor or in accordance with BCA Clause C3.15.
C3.15	Where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an external wall or roof) that is required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, that installation must comply with BCA Clause C3.15 of the BCA.
C3.16	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL of the building element.
C3.17	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.
BCA Spec C1.1	The Building has been assessed as Type B Construction Building, the building is to be designed and constructed to achieve compliance with BCA Specification C1.1 and some of the relevant elements of this as follows: • Building is to be designed and constructed to comply with BCA Spec C1.1, and BCA Spec C1.1 Table 3 of BCA Spec C1.1 for Type A Construction. • Generally, this will see most major building elements to Ground Floor (External walls, Internal Walls, Floors, Columns and Shafts) require an inherent Fire Resistance Level (FRL) of 120/120/120 (2 hours) (Refer – Spec C1.1 and Table 3 of Appendix A of NCC 2019) • For First Floor and above (External Walls, Internal Walls, Floors, Columns and Shafts) require an inherent Fire Resistance Level (FRL) of 90/90/90 FRL (1.5 hours) (Refer – Spec C1.1 and Table 3 of Appendix A of NCC 2019) • The proposed roof of the building need not be fire rated where its covering is non-combustible, as long as the ceiling immediately below the roof has a resistance to incipient spread of fire ceiling of not less than 60mins (RISF 60 Ceiling)

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	• Walls separating Units will require an FRL of 90/90/90 (load bearing) and -/60/60 FRL for non-loadbearing walls). • Internal Walls that are fire rated are to extend to the floor slab above/below, or on the top floor extend to the ceiling if it achieves the required RISF of 60mins and not to the underside of the roof sheeting. • Loadbearing Internal walls and Loadbearing fire walls are required to be constructed of concrete or masonry • Floors – to achieve a minimum of 120/120/120 FRL Fire rating for the 1st Floor Level over the office, carpark and communal area, and all other floors in the building top achieve a min of 90/90/90 FRL as required by Clause C2.9 and BCA Spec C1.1 for floors • Loadbearing External Walls and External Columns are to be fire rated to comply with Table 3 and the requirements of BCA Spec C1.1. • Public Corridor to Ground floor -the corridor/hallway on ground floor between the office and the Class 2 communal area is to comply with Table 3 of BCA Spec C1.1 and achieve a fire rating of 60/60/60 FRL on the Communal Hall (Class 2) side. • Non-load bearing walls located within 3m of the allotment boundary or adjoining buildings need to be fire rated as per Table 4 of BCA Spec C1.1. • Any Building elements that provide direct vertical or lateral support to another part that requires an FRL then the supporting part must also be fire rated (See Clause 2.2 of BCA Spec C1.1 for details for support of another part) • Lintels are to be designed and specified and constructed to comply with BCA Clause 2.3 of BCA Spec C1.1 • If any finish lining or other attachment is proposed to a building element that requires an FRL then the fixing of these elements, services, linings etc must not impair the FRL of the fire resistance of that element attached to. • Enclosure of Shafts (lift shaft, Stair Shaft, Services Shafts or the like are to be a shaft that achieves a fire rating of 120/120/120 FRL, and be enclosed top and bottom (unless slab on ground) with a fire rating of 120/120/120 FRL and to comply with BCA Clause C2.10, Spec C1.1 and BCA Clause C3.10 for the shaft, and door openings etc. • 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, subject to (b), must have an FRL not less than that required by other provisions of this Specification; and if located within the same fire compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself; and for the part it supports; and be non-combustible if required. • If a Stair Shaft supports any floor or structural part of it the floor or part must have a fire rating of 60/-/- or 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. • Internal fire rated walls must be constructed to achieve compliance with BCA Spec C1.1 Clause 3.1 • Loadbearing internal walls or fire walls must be constructed of concrete or masonry • Internal Columns and internal walls supporting the roof need not comply with Table 3 of BCA Spec C1.1 (not need to be fire rated) as per Clause 3.5 of Spec C1.1 • Columns or Columns within external wall to other buildings are to achieve a fire rating of 120/-/- FRL • Loadbearing stair shafts, and lift shafts (load bearing) are to achieve a fire rating of 120/120/120 FRL • Loadbearing internal walls and columns to achieve a fire rating of 120/-/- FRL Note: In the BCA whenever it requires an element to achieve an FRL it needs to be fire rated in both directions inside and outside, up or down, and not is one direction only, the only exception to this is RISF Ceilings and limited elements in Type C Construction. The above provides a precis of requirements, detailed compliance and confirmation of compliance will need to be confirmed by the Structural Engineer for compliance as Type B Construction to BCA Part C1 and Spec C1.1 of the BCA.

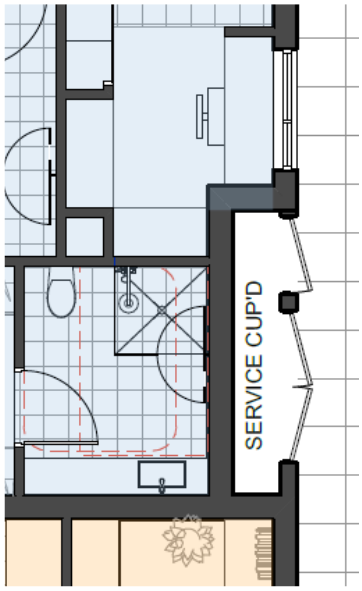
BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	Cladding / External Walls Important Note: Any proposed combustible materials or composite aluminium panels to the façade are to be verified as complaint with BCA, and either compliant as defined in AS 1530.1 or deemed non-combustible in accordance with BCA Clause C1.9 and C1.14 Please note, in light of recent PI insurance matters affecting the industry the attainment of a performance assessment by the Fire Safety Engineer may not be available for this matter and DTS compliance may be required by the engaged certifier for the development. ***Further Information:*** Structural Engineer is to ensure compliance of all structural elements to BCA Part C1, and Spec C1.1, this is to include all elements that provide direct vertical or lateral support or for stair shaft design and stairs, Architect is to detail all non-structural elements to be confirmed at CC Stage to the certifier.

BCA Part D

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
D1.2	Two (2) Exits must be provided from each level of the building, achieves compliance at this stage.
D1.3	All stairs which connect or pass by **more** than Two (2) storeys are required to be contained within a fire isolated shaft (FRL 120/120/120) Apartment level stairs are open stairs not designed as fire isolated, nor are they compliant as Stairs in lieu. For Purpose of this report it is assumed that these will be subject to fire safety engineering.
D1.4 / D1.5	Exit Travel Distances All areas of the building are required to reach an exit within the following egress parameters. • 6m to Point of Choice from Apartment Unit Doors • 20m to a point of choice to areas other than SOU unit doors. • 45m between alternative exits; • Travel by non-fire isolated stair – maximum of 80m from worst location on floor to open space. Travel distances in the building are assessed and achieve compliance, they are tight especially the 45m between exits and the 6m to a Point of choice on the courtyard entry units in the South West corner Units. Below Areas to be Fire Engineering or Design changes: **Fire Engineering Elements – Travel Distances** Should the travel distances to Level 5 are as follows: • 12m to Point of Choice on 5th Floor (exceeds 6m)
D1.6	Required paths of travel to an exit throughout the building are to achieve the following dimensions. • Minimum 1.0m clear width of stairs/ramps, corridoors, this is clear of stairs, handrails and any projections of the structure. • Minimum 1980mm head clearance at doorways above FFL Design and Constructed works are to achieve compliance with BCA Clause D1.6.
D1.9	A non-fire-isolated stairway or non-fire-isolated ramp 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 2 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 60 m. 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 a level which discharges at road or open space. ***Note: Design Indicates compliance with these requirements of this Clause.***

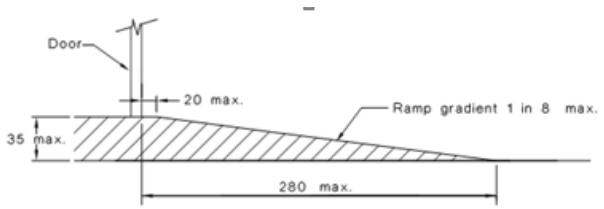
BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
D1.10	An exit must not be blocked at its discharge, and where necessary suitable barriers (such as bollards) must be provided to prevent vehicles from blocking an exit. If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than the minimum width of the required exit; or (ii)1 m whichever is the greater. If an exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be by a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required for disabled access or by a stairway complying with the Deemed-to-Satisfy Provisions of the BCA. ***Note: Design Indicates compliance with these requirements of this Clause.***
D1.12	Non-required stairs – none of the stairs in the building are non-required, all are required for egress as such clause has no application based on the current design.
D1.13	The following population densities are provided and have been used in the determination of BCA compliance due to exit widths. Ground Floor • Communal Room - up to 300 persons based on floor area/Egress capacity of 3m clear • Office – Eight (8) Office staff are proposed for the site. This is the assessed population of these areas required by the BCA.
D1.17	Adequate access to lift pits must be as follows; • Where the pit depth is less than 3m, access is via the lowest landing doors; • Where the pit depth exceeds 3m, access must be via a dedicated access doorway and is to comply with this clause of the BCA. For the purpose of this report it is assumed the lift pit will be less than 3m from the lowest landing doors.
D2.2	A stairway that is required to be fire isolated must be constructed as follows; a) non-combustible materials; and b) so, if there is local failure it will not cause structural damage to or impair the fire resistance of the shaft. ***Note***: None of the stairs are designed as fire isolated due to the design at present.
D2.3	Non-fire isolated stairs in a building used for egress in a building with a rise in storeys of more than 2, must be constructed as follows; a) reinforced or prestressed concrete; or b) steel which has no part less than 6mm thick in any part; or c) timber which has a finished thickness not less than 44mm and has not been joined by means of glue. ***Structural Design*** - Must also be designed such that if there is local failure it will not cause structural damage to or impair the fire resistance of the shaft. Design and as constructed stairs need to achieve compliance with this clause of the BCA.
D2.4	Rising and Descending stairs - none proposed in the building as no basement proposed.

D2.7	Installations in paths of travel and exits are as follows by this clause of the BCA.
	• Gas or other fuel services must not be installed in a required exit.
	• Services or equipment comprising electricity meters, distribution boards or ducts; or central telecommunications distribution boards or equipment; or electrical motors or other motors serving equipment in the building, may be installed in—
	  • a required exit, except for fire-isolated exits specified in (a); or
	  • in any corridor, hallway, lobby or the like leading to a required exit,
	• If the EDB and Mains Comms cupboard services or equipment are enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure. (See below Services enclosure that is assumed to be smoke sealed and non-combustible detailed and installed)

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	 **Further Information:** • Ensure EDB or central telecommunication distribution boards are to be detailed as being enclosed in smoke sealed enclosure, with enclosure being non-combustible (plasterboard, metal backed door etc including the ceiling of the enclosure)
D2.8	Fire-isolated stairways and ramps — If the space below a required fire-isolated stairway or fire-isolated ramp is within the fire-isolated shaft, it must not be enclosed to form a cupboard or similar enclosed space. Non fire-isolated stairways and ramps — The space below a required non fire-isolated stairway (including an external stairway) or non-fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless— • the enclosing walls and ceilings have an FRL of not less than 60/60/60; and • any access doorway to the enclosed space is fitted with a self-closing –/60/30 fire door. Note: No enclosure under the egress stairs is proposed on the design, as such compliance achieved with this clause of the BCA.
D2.13	Proposed stairways throughout the building are required to be designed and constructed to comply with BCA Part D2 and comply with the following; • Not more than 18 nor less than 2 risers in each flight • Stair Geometry (Going 250mm – 355mm) & (Risers 115mm – 190mm) • Riser and going dimensions to be constant throughout each flight, subject to the variations allowed in BCA Clause D2.13. • Treads to have surface slip resistance to AS4586 or alternatively slip resistant nosing strip • Treads of solid construction (no mesh or perforated material) and no gaps that exceeds 125mm • No winders in lieu of a landing to limit the stair to less than 18 risers • Going and riser dimensions must be measured in accordance with Figure D2.13.
D2.14	Landings to stairways must have a maximum gradient not steeper than 1:50. Landings must be at least 750mm in length where there is a change in direction, the length is measured 500mm from the inside edge of the landing, where Landings (and stairs) must have compliant slip resistant surfaces in accordance with AS4586 as follows;

<table>
<tr><th>BCA
CLAUSE</th><th>COMPLIANCE REQUIREMENT (DTS)</th></tr>
<tr><td></td><td>
Table D2.14 SLIP-RESISTANCE CLASSIFICATION
<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface conditions</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>
<u>Further Information:</u>
Details of each of the proposed staircases to be detailed at CC stage and constructed to achieve compliance with BCA Part D2.
</td></tr>
<tr><td>D2.15</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;

Where required to be disabled accessible, the door opens directly to road or open space and is provided with a drop of 35mm or less than a threshold ramp complying with AS1428.1 – 2009; (see figure below)
In other cases,(not required for disabled access) the door opens directly to open space (or external stair landing) and the door has a drop of not more than 50mm to the surface beneath or must be flush



Note: Design Indicates compliance with these requirements of this Clause.
</td></tr>
<tr><td>D2.16</td><td>
Balustrading / Barriers as per table below must be provided along the side of the following areas where the trafficable surce is 1m or more above the surface beneath;

A roof to which general access is provided;
Stairway and ramps
A floor, corridor, hallway, balcony, deck, verandah,balcony, mezzanine access bridge or the like
Any delineated path of access to a building
Floors more than 4m above the FGL below have additional requirements in regards to climability for the zone above 150mm and below 760mm above FFL as per Table D2.16a of the BCA.

These requirments do not apply to;

a) The perimter of a stage or rigging loft, loading dock of the like,
b) maintence areas (as defined under Clause D2.18 of the BCA)
c) a barrier provied to an openable window (covered by Clasue D2.24 of the BCA)

</td></tr>
</table>

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	1. Barrier heights **Location** / **Minimum height** (a) Stairways or ramps with a gradient of 1:20 or steeper. — 865 mm (b) Landings to a stair or ramp where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length. (c) In front of fixed seating on a *mezzanine* or balcony within an auditorium in a Class 9b building. — 1 m; or 700 mm and a horizontal projection that extends not less than 1 m outwards from the top of the barrier; or in a Class 9b building used as an *entertainment venue*, the height prescribed for guardrails in NSW H101.14.2 and NSW H102.9. (d) In a Class 9b building used as an *entertainment venue*— (i) stairways or ramps; and (ii) the floor of any access path, — 1 m when provided inside the building; and 1200 mm when provided externally to the building. Note: Stainless stee wire or the like if proposed is to be carefully detailed as BCA Clause D2.16 has very detailed span and detail criteria in order to achieve compliance. **Further Information:** • Details to be provided in the design and constructed to achieve compliance with this clause of the BCA.
D2.17	Handrails must be located along at least one side of each stair or ramp and fixed at a height of not less than 865mm measured above the nosing of stair treads. This clause is to be read in conjunction with the Disabled Access Report (which will indicate where dual handrails are required for AS1428.1 compliance and may have additional requirements.)
D2.18	Any fixed platform, walkway, stairway, ladder and any going and riser, landing, handrail or barrier attached thereto may comply with AS 1657 in lieu of D2.13, D2.14, D2.16 and D2.17 if it only serves machinery rooms, boiler houses, lift-machine rooms, plant-rooms, and the like;
D2.19	Any power operated doors used as exits or on the path of travel to an exit must • Doors must be openable with a force not exceeding 110N if there is power failure or malfunction (post battery backup failure/not working) Note: Disabled Access may require less force for Disabled Access requirements. • If Power operated door it must also open automatically on power failure or on activation of a fire detection or sprinkler activation I the building alarm as per Clause D2.19 of the BCA Note: Only if power assisted door) **Further Information:** Details to be provided at design and on completion stages to determine compliance with BCA Clause D2.19 for any powered or power assisted doors.
D2.20/ 2.21	Exit doors must swing in the direction of egress, some doors have been identified as not achieving compliance with this clause of the BCA in the executive summary section of the report. Door latching to exit doors and doors in the path of travel (other than Unit Entry doors) are to achieve compliance with the BCA Clause D2.21.
D2.23	Signs on Fire doors – As the building stairs are not fire isolated stairs, signage for fire safety door do not obstruct is **not** required.

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
D2.24	Protection of Openable Windows Windows in the bedrooms of the Units where there is a fall of 2m or more must be child proof in compliance with this clause of the BCA. A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in a bedroom in a Class 2 or 3 building or Class 4 part of a building. (b)Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by (a) must comply with the following: (i)The openable portion of the window must be protected with— (A)a device capable of restricting the window opening; or (B)a screen with secure fittings. (ii)A device or screen required by (i) must— (A)not permit a 125 mm sphere to pass through the window opening or screen; and (B)resist an outward horizontal action of 250 N against the— (aa)window restrained by a device; or (bb)screen protecting the opening; and (C)have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (c)A barrier with a height not less than 865 mm above the floor is required to an openable window— (i)in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and (ii)where the floor below the window is 4 m or more above the surface beneath if the window is not covered by (a). (d)A barrier covered by (c) except for (e) must not— (i)permit a 125 mm sphere to pass through it; and (ii)have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. (e)A barrier required by (c) to an openable window in— (i)fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and (ii)Class 7 (other than carparks) and Class 8 buildings and parts of buildings containing those classes, must not permit a 300 mm sphere to pass through it. ***Further Information*** – Details of compliance are to be included in the design/specification for the CC Stage, and to be installed to comply with BCA Clause D2.24
D3 and F2.4	The appointed Access Consultant is to review Disabled Access compliance accessibility to and within the new building, in accordance with the following minimum provisions; • Parts D2, D3, Part F2 & Part E3 of the BCA 2019 Amendment 1 • AS1428.1 – 2009 • AS1428.4 - 1992 • AS1735.12 – 1999 • AS 2890.6 • Access to Premises Standard Refer to Accessibility Report for matters pertaining to Disabled Access.

BCA Part E

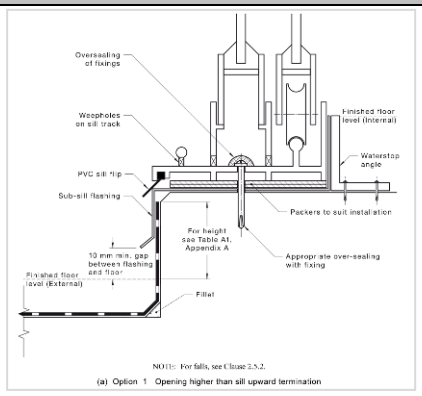
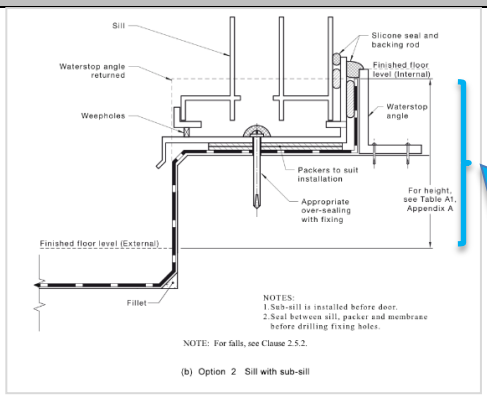
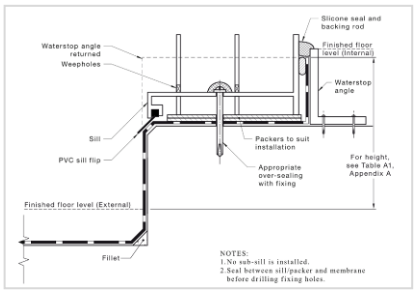
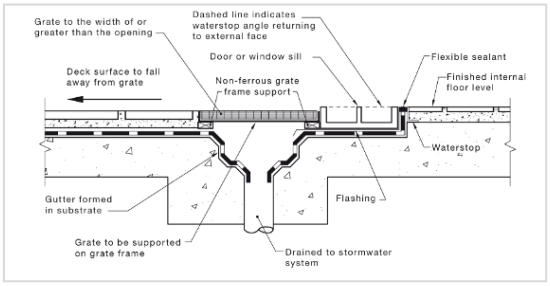
BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
E1.3	A fire hydrant system complying with BCA E1.3 and AS2419.1 (2005) must be installed to serve a building that has a total floor area exceeding 500sqm, and where Fire Brigade is available to attend the building. Internal Hydrants: Internal fire hydrants are required to be installed throughout the building where external hydrant coverage cannot be provided. Internal hydrants must adhere to the following criteria; • Located so that they serve only the storey at which they are located (no mid landing hydrants permitted to stairways) • Hydrants to be located within 4m of exits (or within any Fire Isolated stairs). If floor coverage cannot be achieved in accordance with Clause 3.2.3.1 and 3.2.3.2, additional hydrants can be installed throughout the floor, as necessary. Areas of note are Level 2, Grid Level to be confirmed • Enclosed rooftop plant rooms (excluding lift machine rooms) greater than 250sqm shall be served by their own internal hydrant. • Fire Hydrant accessibility and clearances shall be designed/installed in accordance with AS2419.1. • Where hydrants are located within an enclosure or cupboard, adequate clearances as per clause above (100mm clear around hand wheel + 1m clear in front of valve). Signage must also be provided to the cupboard “FIRE HYDRANT” 50mm contrasting lettering. Booster Assembly: Protection of Booster Where a sprinkler system is installed throughout a building in accordance with AS 2118.1, AS 2118.4, AS 2118.6, FPAA101H or FPAA101D the fire hydrant booster protection requirements of clauses 7.3(c)(ii) and 7.3(d)(iii) of AS 2419.1 do not apply. Fire Brigade booster assemblies shall be located so that they meet the following criteria; a) Readily accessible by Fire Brigade; b) Operable by Fire Brigade pumping appliances located within 8m; c) In a position, not less than 10m from any high voltage main electrical distribution equipment such as transformers and distribution boards, and from liquefied petroleum gas and other combustible storage d) In a position so that it is not obstructed by vehicles, stored good or vegetation. e) If located remote from the building, ○ At the boundary of the site and be within sight of the main entrance of the building; ○ Adjacent to principal vehicular access to the site ○ Located not less than 10m from any external wall of the building Hydrant Pumproom: Fixed on-site pump sets and associated equipment shall be contained in a weatherproof room which complies with the following; a) Secure to prevent the entry of unauthorized person; b) Adequately ventilated for the aspiration and cooling of pump drivers; c) Heated, where necessary, to prevent freezing and facilitate cold start of compression ignition drivers; d) identified by appropriate signs and other visual audible aids (bell), so that the room and its entrance is readily located by the Fire Brigade

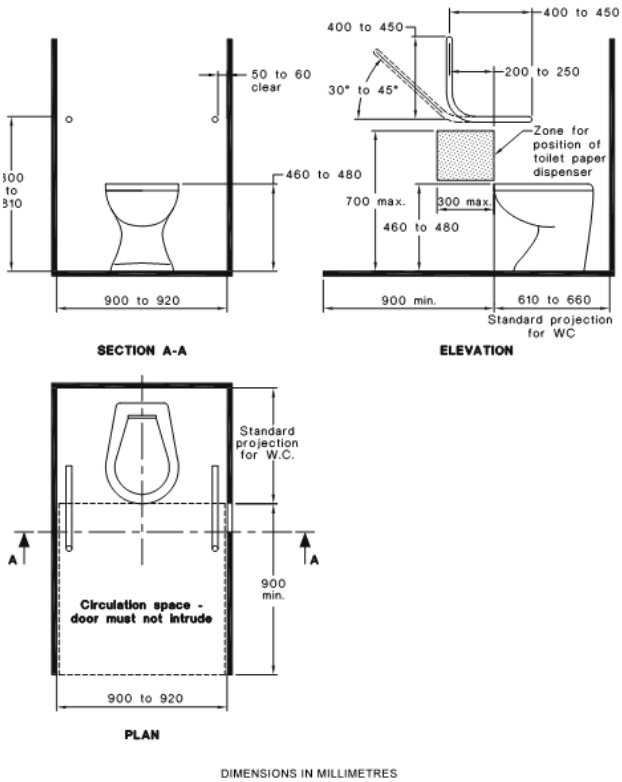
BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	e) minimum 2.1m high internal clearance with adequate space for pump maintenance and replacement f) for internal pumprooms located in the building, a door opening directly to road or open space, or door opening to fire isolated passage which leads to road / open space **Further Information:** • Booster location and compliance with this clause of the BCA to be confirmed by the engaged CFSP for the Hydrant design. • The Hydrant system are to be confirmed as compliant by the engaged CFSP for the project to ensure compliance with BCA E1.3 and AS 2419.1-2005.
E1.4	Fire Hose reels are required to serve the building in accordance with AS24441 (2005) for the Basement Carpark area only. As Office, and Class 2 portions are excluded from compliance with FHR under Clause E1.4 of the BCA. Fire Hose Reel installations must adhere to the following criteria; • Must be located to serve only the storey at which they are located; • Fire hose reels coverage can be achieved by a combination of internal and external installations; • Internal Fire Hose Reels to be located within 4m of an exit (i.e. top step of stairs, final exit door to open space or fire stair doorway); • Additional Fire Hose Reels can be provided in addition to the above, to achieve coverage • Where located within an enclosure or cupboard, adequate clearances must be adhered to (100mm clear around drum + 1m clear in front of drum). Signage must also be provided to the cupboard "FIRE HOSE REEL" 50mm contrasting lettering, and high level red diagram sign as well. • Must be located so that the hose reel does not need pass through doorways fitted with fire or smoke doors. ***Note**: Fire rated doors in the building to be made aware of such that coverage is not met by passing FHR through fire rated doors in the building.* **Further Information:** • The fire hose reel system is to be detailed and confirmed as compliant by the engaged CFSP for the project to ensure compliance with BCA E1.4 and AS 2441-2005
E1.5	Sprinklers Sprinkler System – as the Building exceeds a Rise in Stories of Four (4) and is under 25m (TBC) the details of the Sprinkler system proposed has been advised as the following: • ~~NSW E1.5, AS 2118.1-2017 and BCA Spec E1.5a , OR~~ • NSW E1.5, FPAA101D and Spec E1.5a • ~~NSW E1.5, FPAA101H and Spec E1.5a~~ Note: Only a BCA Spec E1.5 and AS 2118.1-2017 system gives certain concessions in the BCA, the other types do not. FPAS Accredited Design to confirm system proposed and confirmation for submission to the certifier at the CC Stage. The CFSP Fire Services Consultant to refer Fire Safety Engineer for any specific system requirements and specifications. And is to also outline any non-compliances with BCA E1.5 and Spec E1.5, and AS 2118.1-2017 early in the design so that it can be discussed with fire safety engineer. **Further Information:** • The Sprinkler system and associated works are to be confirmed by the engaged CFSP for the BCA NSW E1.5, FPAA101D and BCA Spec E1.5a.
E1.6	Portable Fire Extinguishers are required to be provided throughout the building in accordance with AS24444 (2001). Extinguishers must be distributed, mounted, and signposted in accordance with AS24441, subject to the nature of the area (fire risk) and classification of each space within the building.

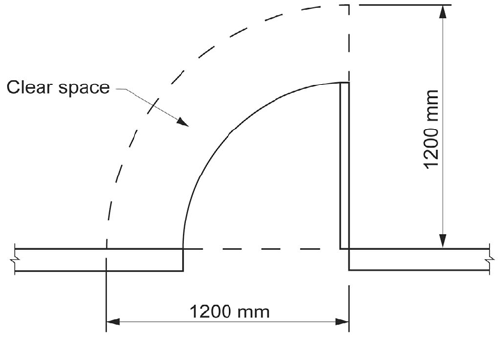
BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	Further Information: • Final details and location of above are to be confirmed by the engaged fire services consultant for the project to ensure compliance with BCA E1.6 and AS 2444-2001
E1.8	A Fire Control Centre facility is not required for this building as it does not exceed 25m in effective height as defined by the BCA in measuring effective height.
E1.9	Fire Precautions during construction In a building under construction— (a) not less than one 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 exit or temporary stairway or exit; and (b) after the building has reached an effective height of 12 m— (i)the required fire hydrants and fire hose reels must be operational in at least every storey that is covered by the roof or the floor structure above, except the 2 uppermost storeys: and (ii)any required booster connections must be installed. **Note:** The Construction Design and programme must ensure that the above is able to be completed as the building reaches the required heights and during construction.
E2.2 , NSW E2.2 & Table E2.2a	Fire Services Proposed/Required by the BCA The following provisions apply to the building with respect to Smoke Hazard Management. a) Shut Down of any air handling system which does not form part of a dedicated smoke hazard management system to comply with NSW BCA Table E2.2a; b) Smoke Detection and Alarm system to BCA Spec E2.2a and AS 1670.1-2018 and c) Carpark Ventilation is to comply with AS 1668.2 and Clause 5.5 of AS 1668.1, and BCA Table E2.2a d) Building Occupant Warning system is to be designed and installed to comply with BCA Spec E2.2a and Clause 3.22 of AS 1670.1-2018. Note the above is the BCA Minimum requirement, Fire Safety Engineering may require additional measures / fire services once undertaken. Assumptions of this Report • Details to be provided and confirmed as compliant by Mechanical, Dry Fire and Wet Fire Consultants at the CC Stage and installed to comply at the OC Stage for the building.
E3.1	Lift/s - The proposed passenger lifts serving the building must comply with BCA Part E3, Spec E3.1, , AS1735.11 and AS 1735.12. Note: Building exceeds a BCA effective height of 12m but not 25m. **Further Information:** Details to be provided and confirmed as compliant by lift consultant at the CC stage for the building, and on completion of the works.
E4.2	An emergency lighting system must be installed throughout each storey / building in accordance with BCA E4.2 and AS2293.1 (2005).
E4.5 / E4.6	Illuminated exit lighting system must be installed throughout each storey of the building in accordance with BCA E4, NSW E4.6 and AS2293.1 (2005). ***Note:*** *The maximum height of an exit sign must be positioned not higher than 2.7m above FFL.*

BCA Part F

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
FP1.4	Weatherproofing of External Walls The external wall (including openings around windows and doors) must prevent the penetration of water that could cause unhealthy or dangerous conditions, or loss of amenity for occupants, and undue dampness or deterioration of building elements. **Further Information:** • A Performance solution is to be provided from the façade consultant / designer/ architect designing the external wall and is to detail the make-up and how compliance with BCA Clause FP1.4 is covered by the proposed design for assessment by the certifier as part of the CC Assessment.
F1	• External above ground membranes are to be designed and installed to comply with BCA Clause F1.4 and AS4654.1 and AS 4654.2 as referenced in the BCA. • Storm water drainage must comply with AS/NZS 3500.3-2015 and the NCC Plumbing Code of Australia 2019. • Roof Covering is to comply with BCA Clause F1.5 (AS 1562.1 for metal roofing) • Sarking is to comply with AS/NZS 4200.1 and AS 4200.2 Note: Sarking in external walls is to also comply with C1.9 of the BCA applicable to Sarking in external walls. • Wet Areas internally are to be waterproofed to comply with BCA Clause F1.7 and AS 3740-2010 • Damp Proofing is to be detailed / designed and installed to comply with BCA F1.9, F1.10 and AS/NZS 2904 • Floor Wastes to bathrooms, laundries are to be designed with a floor waste to BCA Clause F1.11 • No Sub Floor spaces are detailed, if these are proposed as the design progresses then these are to be made to achieve compliance with BCA Clause F1.12 or provide a Performance solution around waterproofing the space. • Glazing is to be detailed / installed to comply with BCA Clause F1.13, and AS 2047, AS 1288-2006 • Any external above ground membranes (Balcony or the like) are required to comply with AS 4654-2012 Parts 1 & 2. There may be conflict with the accessible provisions of Part D3 of the BCA which will need to be comment on further by the access consultant, as this Standard may require hobs at the thresholds of balconies, see Figure 10 below. There is relief available as the Standard does allow for a gutter system at the threshold of the door sill, which is to be fitted with an AS1428.1-2009 approved grate, in lieu of a hop (Ref: AS 4654.2-2012 Clause 2.8.3 Note 6.) However, such detail should only be determined in accordance with the hydraulic engineer and the access consultant. Figure 5 below also illustrates the membrane termination heights which are given in Table A1 of Appendix of the Waterproofing Standard AS 4654.1 and 2. ***Note:*** *that the heights are related to the determined wind class from AS 4055-2012 and should only be determined by the appropriate project engineer, i.e. structural, hydraulic or façade engineer.*

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	  The minimum termination height is determined by the wind code, see Appendix A of AS   **Further Information:** Confirmation of compliance with BCA Part F1 is to be demonstrated as the design progresses by the architect or other consultants as applicable, and certified on completion of the works.
F2.1	Facilities in Residential Buildings (a)For facilities in Class 2 buildings, the following applies: (i) Within each sole-occupancy unit, provide— (A)a kitchen sink and facilities for the preparation and cooking of food; and (B)a bath or shower; and (C)a closet pan; and (D)a washbasin. (ii)For laundry facilities, provide either— (A)in each sole-occupancy unit— (aa)clothes washing facilities, comprising at least one washtub and a space for a washing machine; and (bb)clothes drying facilities comprising clothes line or a hoist with not less than 7.5 m of line, or space for one heat operated drying cabinet or appliance in the same room as the clothes washing facilities; or (B)a separate laundry for each 4 sole-occupancy units, or part thereof, that must comprise— (aa)clothes washing facilities, comprising at least one washtub and a space for a washing machine; and (bb)clothes drying facilities comprising clothes line or a hoist with not less than 7.5 m of line per sole-occupancy unit, or space for one heat operated drying cabinet or appliance. (iii)For the purposes of (a)(i) and (a)(ii), a kitchen sink or washbasin must not be counted as a laundry washtub. (b)For facilities in Class 3 buildings other than residential care buildings, the following applies: (iii)Facilities for employees must be provided in accordance with F2.3.
F2.3 / F2.5	Facilities for Staff

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	The Proposed office population seats up to Fourteen (14) Staff , based on this the provision of a Single Unisex Disabled Unisex toilet provides the required provisions for up to 18 staff. The Toilets provided adjacent to the Communal Room has toilets provided, these are not required by the BCA as the Communal Room is not assessed as being open to the public. But are assumed to be provided for amenity of visitors/residents in this area. Toilet construction is to also ensure compliance with BCA Clause F2.5 of the BCA.
F2.4 / AS1428.1 (2009)	Provision of a unisex accessible toilet complying with AS1428.1 – 2009, must be installed at each storey of the building where a bank of toilets is provided at that floor, toilets only provided on Ground Floor in design so compliant. Where there is more than one bank of toilets located on the floor, a unisex accessible facility must be provided to not less than 50% of those banks. A Mix of Left and Right handed Unisex toilets is to be provided to the building where more than 1 unisex facility is proposed – Currently only Left Hand facilities are proposed on Ground Floor. **Further Information:** • *One of the Unisex Disabled Toilets is to be a Left Hand and the other Right-Hand configuration at the CC Stage Design.* Refer to Accessibility Report by others for details to this part of the BCA / AS 1428.1 compliance.
F2.4 / AS1428.1 (2009)	Refer to Accessibility Report for details, relating to Ambulant and Shower facilities - the below is for information purposes only. 
F2.5	Sanitary compartments must have doors and partitions that separate adjacent compartments and extend— • from floor level to the ceiling in the case of a unisex facility; or • 1.8 m above the floor in all other cases.

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	(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. **Figure F2.5 Construction of sanitary compartments** 
F2.7	Hot Water, warm water and cooling water systems in a building other than a system serving only a single sole occupancy unit in a Class 2 building must be installed in accordance with AS /NZS 3666.1
F3	In a building or part, the following minimum ceiling heights apply; • Kitchen, Laundry, Corridor, Passageway – 2.1m or more • Habitable room – 2.4m or more • Office Area – 2.4m or more • Above a stairway, ramp, landing or the like — 2m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like **Further Information:** • A reflected ceiling plan with nominated ceiling heights throughout each area of the building is to be submitted at CC stage to confirm compliance.
F4.1	**Provision of Natural Light** Natural Light must be provided to all habitable rooms as defined in the BCA Required natural light must be provided by— (i)windows, excluding roof lights, that— (A)have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the floor area of the room; and (B)are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii)roof lights, that— (A)have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the floor area of the room; and (B)are open to the sky; or (iii)a proportional combination of windows and roof lights required by (i) and (ii).

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	Further Information: • Architect is to confirm this matter is achieved as compliant with BCA Clause F4.1 at the CC stage to the certifier.
F4.4	Artificial lighting throughout the building must comply with AS/NZS1680.0 and BCA Part J6 of BCA 2019 Electrical Consultant to review and provide design certification prior to CC stage.
F4.5	All areas of the building are to be adequately ventilated, with a system of mechanical or natural ventilation complying with AS1668.2 (2012) and BCA 2019 Part J5 or BCA Clause F4.6 **Further Information:** • Mechanical Consultant to review and provide design certification prior to CC stage / Or Confirmation by Architect if Natural Ventilation proposed • Carpark is to be ventilated by a system of mechanical ventilation complying with AS 1668.2; or a system of natural ventilation complying with Section 4 of AS 1668.4.
F4.12	Kitchen local exhaust ventilation requirements A commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1 and AS 1668.2 where— (a) any cooking apparatus has— (i) a total maximum electrical power input exceeding 8 kW; or (ii) a total gas power input exceeding 29 MJ/h; or (b) the total maximum power input to more than one apparatus exceeds— (i) 0.5 kW electrical power; or (ii) 1.8 MJ/hour gas, per m^2 of floor area of the room or enclosure. **Further Information:** Details of the cooking appliances for the relevant spaces in the building is required, should these exceed the above limits then a commercial kitchen exhaust hood compliant with AS 1668.1 and AS 1668.2 including exhaust discharge are required (and to be shown on DA Plans if projecting above the roof etc).
Part F5	***Acoustic – Sounds Transmission and Insulation*** Acoustic Consultant is to confirm that the design achieves compliance with Part F5 of the BCA. It is recommended that the Acoustic Consultant is engaged to provide testing and confirmation on completion/OC stage to BCA Part F5 for the as built works. Note: This relates to the Class 2 portions of the building only (not the Carpark or Office areas).
F6.2	***Condensation Management*** The Sole Occupancy Units of the Building (Apartments) are to comply with the following: Where a pliable building membrane is installed in an external wall, it must— (i) comply with AS/NZS 4200.1; and (ii) be installed in accordance with AS 4200.2; and

BCA CLAUSE	COMPLIANCE REQUIREMENT (DTS)
	(iii) be a vapour permeable membrane for climate zones 6, 7 and 8; and (iv) be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building Where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity. **Further Information:** • Design / Specification is to confirm compliance at the CC Stage for the certifier to assess.
F6.3	***Condensation Management*** An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— (i) 25 L/s for a bathroom or sanitary compartment; and (ii) 40 L/s for a kitchen or laundry. (b) Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air. (c) Exhaust from a bathroom, sanitary compartment, or laundry must be discharged— (i) directly or via a shaft or duct to outdoor air; or ii) to a roof space that is ventilation in accordance with Clause F6.4 of the BCA. ***Further Information***: if the Listed rooms are provided with exhaust systems they must be designed and installed/constructed to achieve compliance with BCA Clause F6.3 and be confirmed at CC stage to the certifier.
Part G3	The Void in the Building is not shown as being roofed or enclosed at the top, to ensure that Part G3 of the BCA and the Atrium provisions are not triggered. Roof Plan is required at CC stage to confirm the open nature and no pergola or other structure is proposed to the top of the void to enclose it in any form. Note: The Void must never be enclosed as otherwise the BCA implications will require much upgrading works.
Section J / BASIX	ESD Consultant to review and provide compliance assessment to Section J, NSW Section J and BASIX for the proposed development for the Class 2, Class 5 and Class 7a portions of the building.
Part J5	All new mechanical ventilation and air conditioning must comply with Part J5 and NSW J(A)3.2 of BCA 2019 Amendment 1. Mechanical Consultant to review and provide design certification prior to CC stage.
Part J6	New artificial lighting must accord with Part J6 of BCA 2019 Amendment 1. Electrical Consultant to review and provide design certification prior to CC stage.
Part J7	Hot water system is to be designed and installed to comply with AS 3500.4 and this part of the BCA and be confirmed at CC Stage to the Certifier.
Part J8	Energy Monitoring is to achieve compliance with BCA Clause J8.3 of the BCA to be designed/provided/installed. Note: Building exceeds 2,500m2 so monitoring for a building of this size is to be designed and provided/installed

5.0 Performance Solutions Proposed

The following Table lists out the areas of the building that are expected to be the subject of Performance Solutions to BCA 2019 Amendment 1

Item No.	DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements
Fire Safety Engineering Elements				
1	Stairs Serving the building are open stairs that do not comply with the External Stairs in Lieu of Fire Isolated Stair requirements	Fire Engineered Performance Solution.	D1.8	DP4, EP2.2
2	Fire Doors and Fire Walls to Public Corridor/Hallway to Ground floor is not proposed to be fire rated and protected by Doors that achieve a fire rating of -/60/30 FRL and AS 1905.1	Fire Engineered Performance Solution.	C3.11	DP4, CP1 & CP2
3	Egress Travel Distances Fifth Floor – Two (2) of the 1 Bed Units have doors that are more than 6m to a point of Choice (approx. 12m) and also pass by another Unit without protection to BCA Clause C3.11 as per below	Fire Engineered Performance Solution.	D1.4	DP4, EP2.2
4	Spandrels – there are some windows/balconies that are not DTS compliant with the provisions of the BCA that are proposed to be the subject of Fire Engineering.	Fire Engineered Performance Solution.	C2.6	CP2
Section J				
1	Section J - JV3 Assessment Report – is expected for this building either for elements such as insulation to the slab over carpark, or for conflicts between BASIX and Section J from the ESD/Section J Consultant.	Verification Assessment report prepared and provided by ESD/Section J Consultant	Section J	JV3
Other Performance Solutions (Non-Fire Safety Engineering Performance Solutions)				
2	Waterproofing of External Walls External wall design is to achieve compliance to BCA Performance Clause FP1.4 – The only way to demonstrate this is via a Performance Solution. This is to demonstrate that External Walls (including openings around windows and doors) must prevent the penetration of water that could cause unhealthy or dangerous conditions, or loss of amenity for occupants and undue dampness or deterioration of building elements	Performance Solution provided by Façade Consultant / Architect as applicable	FP1.4	FP1.4

6.0 Fire Safety Measures

Below is an outline of essential fire safety services which are understood to be provided in the design and installation of the building, this is not a Fire Safety Schedule nor should it be proposed as such:

Fire Safety Measure	Australian Standard (BCA 2019 Amend 1 referenced)	BCA 2019 Amend 1 Clause(s)	Proposed Fire Safety Measures
Automatic Fail-Safe Devices	-	BCA D2.19, D2.21	☒
Automatic fire detection & alarm systems	AS 1670.1 – 2018	E2.2	☒
Automatic fire suppression systems	FPAA101D	BCA NSW E1.5 & BCA Spec E1.5a	☒
Emergency lighting	AS/NZS 2293.1 – 2018	E4.2, E4.4	☒
Building Occupant Warning System (BOWS)	AS 1670.1-2018	E2.2	☒
Exit signs	AS/NZS 2293.1 – 2018	E4.5, NSW E4.6 & E4.8	☒
Fire dampers	AS 1668.1 – 2015, AS 1682.1 and 2	Spec E2.2a	☒
Fire doors	AS 1735.11 – 1986 (lift Doors) AS/NZS 1905.1 – 2015 (Fire Doors)	Spec C3.4, C3.10	☒
Fire hose reel systems (Carpark only)	AS 2441 – 2005	E1.4	☒
Fire hydrant systems	AS 2419.1 – 2005	E1.3	☒
Fire seals protecting openings in fire resisting components	AS 4072.1 – 2005 AS 1530.4 – 2005	Spec C3.15	☒
Lightweight construction	AS 1530.4 – 2005	C1.8, Spec C1.8	☒
Mechanical air handling systems	AS 1668.1 – 2015 AS 1668.2 – 2012	E2.2, NSW E2.2b (shutdown)	☒
Portable fire extinguishers	AS 2444 – 2001	E1.6	☒
Warning and operational signs	-	E3.3, D3.6	☒
Fire Engineering Report issued by ??, revision ?? dated ?? •		CP1; CP2; DP5; DP4; DP6; EP1.3; EP1.6; EP2.2;	☒

Note: This is based on the CC being lodged for the development during the period that BCA 2019 Amendment 1 is in force should BCA 2019 be amended, or a subsequent BCA version come into force prior to lodgement of the CC Application then that BCA will apply to the development.

Note 2: Fire Safety Engineering will amend this above, and may require additional or changes to the listed standards of performance

Appendix A
Fire Safety Provisions

Table 3 – Type A Construction: FRL of Building Elements

Building Element	Class of Building – FRL (in minutes) Structural Adequacy/Integrity/Insulation			
	Class 2, 3 or 4 part	**Class 5, 9 or 7 (car park)**	**Class 6**	**Class 7 (other than carpark) or 8**
External Wall (including any column and other building element incorporated therein) or other external building element, where the distance from and fire-source feature to which it is exposed is:				
For Loadbearing Parts:				
Less than 1.5m	**90/90/60**	120/120/120	180/180/180	240/240/240
1.5m to less than 3m	**90/60/60**	120/90/90	180/180/120	240/240/180
3m or more	**90/60/30**	120/60/30	180/120/90	240/180/90
For Non-Loadbearing Parts:				
less than 1.5m	**- /90/90**	- /120/120	-/180/180	-/240/240
1.5m to less than 3m	**- /60/60**	- /90/90	-/180/120	-/240/180
3m or more	**- / - / -**	- / - / -	-/-/-	-/-/-
External Column not incorporated in an external wall, where the distance from any fire source feature to which it is exposed is:				
Less than 3m	**90/-/-**	120/-/-	180/-/-	240/-/-
3m or more	**-/-/-**	-/-/-	-/-/-	-/-/-
Common Walls and Fire Walls:				
	90/90/90	120/120/120	180/180/180	240/240/240
Internal Walls – Fire Resisting lift and stair shafts:				
Loadbearing	**90/90/90**	120/120/120	180/120/120	240/120/120
Non-Loadbearing	**- /90/90**	- /120/120	-/120/120	-/120/120
Bounding ***Public Corridors*** public lobbies and the like:				
Loadbearing	**90/90/90**	120/ - / -	180/ - / -	240/-/-
Non-Loadbearing	**- /60/60**	- / - / -	- / - / -	- / - / -
Between or Bounding ***Sole Occupancy Units***:				
Loadbearing	**90/90/90**	120/ - / -	180/ - / -	240/-/-
Non-Loadbearing	**- /60/60**	- / - / -	- / - / -	- / - / -
`Ventilating, pipe, garbage and like ***shafts*** not used for the discharge of hot products of combustion:				
Loadbearing	**90/90/90**	120/90/90	180/120/120	240/120/120

Building Element	Class of Building – FRL (in minutes) Structural Adequacy/Integrity/Insulation			
	Class 2, 3 or 4 part	**Class 5, 9 or 7 (car park)**	**Class 6**	**Class 7 (other than carpark) or 8**
Non-Loadbearing	- /90/90	- /90/90	- /120/120	- /120/120
Other Loadbearing Internal Walls, Internal Beams, Trusses and Columns:				
	90/ - / -	120/ - / -	180/-/-	240/-/-
Floors:	90/90/90	120/120/120	180/180/180	240/240/240
Roofs:	90/60/30	120/60/30	180/60/30	240/90/60