MOMENTUM PROJECTS

BCA ASSESSMENT REPORT (DA)

3-5 Fingal Street, Brunswick Heads

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Document Control

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R1.1	23 April 2025	BCA Assessment Report (DA)	Reza Karani	Andrew Beames
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	13 May 2025	Andrew Beames Manager, Building Code	Signed: DocuSigned by: Andrew Beames 0612937BEA204FB...	

Jensen Hughes Australia

Providing building regulations, fire engineering, accessibility, and energy consulting services to NSW for over 25 years

Our story begins in 1997 with the founding of BCA Logic to fulfill the demand of a consultancy company whose expertise expanded across the entire life cycle of a building, from consulting on the initial planning through to construction and occupation.

BCA Logic, SGA Fire and BCA Energy joined Jensen Hughes in 2021, a leading global, multi-disciplinary engineering, consulting and technology firm focused on safety, security, and resiliency. We continue to be at the forefront of our industry and work thoroughly to preserve our position by ensuring the successful delivery of projects.

Jensen Hughes was launched in 2014 through the historic merger of Hughes Associates and Rolf Jensen & Associates (RJA), two of the most experienced and respected fire protection engineering companies at the time. Since then, we have gained market leadership in nuclear risk consulting and established commanding positions in areas like forensic engineering, security risk consulting and emergency management. Over the past 22 years, our integration of more than 30 privately held engineering and consulting firms has dramatically expanded our global footprint, giving us a powerful market presence ten times larger than our nearest competitor in some of our markets and extending our historical lineage back to 1939.

With more than 90 offices and 1500 employees worldwide supporting clients globally across all markets, we utilise our geographic reach to help better serve the needs of our local, regional, and multinational clients. In every market, our teams are deeply entrenched in local communities, which is important to establishing trust and delivering on our promises.

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Executive summary

This document provides an assessment of the architectural design drawings for the proposed development at 3-5 Fingal Street, Brunswick Heads against the Deemed-to-Satisfy Provisions of the Building Code of Australia (BCA) 2022 Volume One.

Part 3 of this report outlines the identified BCA compliance issues that require further information or consideration and/or assessment as Performance Solutions. Any Performance Solution will need to be detailed in a separate report and must clearly indicate methodologies for achieving compliance with the relevant BCA Performance Requirements.

Item	Description	BCA Provision
Fire Performance Solutions required		
1.	To reduce the Fire Resistance Level (FRL) of the commercial portion of the building to two (2) hours in lieu of three (3) hours.	Specification 5
2.	To permit the use of external load-bearing timber columns on the southern elevation, where an FRL of 180/-/- is required. The Performance Solution must also address the non-combustibility requirements applicable to elements of external walls, as the timber columns form part of the external wall construction. **Note:** The BCA Clause S5C6(5) can be applied to obtain the concession of not having fire-rated columns, if a non-combustible material is used for the columns (e.g. steel columns).	Specification 5 C2D10
3.	The exit travel distance from the doors of the southern SOU's to a point of choice exceeds the requirements (8m in lieu of 6m)	D2D5
4.	The distance between alternative exits on Level 1 exceeds the requirements (48m in lieu of 45m)	D2D6
5.	The Fire Hydrant Booster will not be within, affixed or in sight of the principal pedestrian entrance.	E1D2
Non-Fire Performance Solutions required		
1.	**Façade engineer** A Performance Solution will be required to demonstrate that the construction of the new external walls (other than glazing, masonry, autoclaved aerated concrete, and metal wall cladding for which Deemed-to-Satisfy Provisions are provided) is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	F3D5
Further information required		
1	Detailed drawings of the stairs are required to ensure that the stairs' geometry and handrails are in accordance with the relevant BCA requirements.	Part D3

1.0 Basis of Assessment

1.1 LOCATION AND DESCRIPTION

The subject of this report is a building development located at 3–5 Fingal Street, Brunswick Heads. The development comprises ground-level retail tenancies and a café/restaurant, with on-site car parking available for both occupants and customers. Above this retail and parking podium, there are multiple two-storey, self-contained residential units. These units are designed as independent dwellings with no internal common areas shared between them.

Figure 1 - 3D design by CHROFI

1.2 PURPOSE

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of the BCA (except Part D4), and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of the BCA. Such assessment against relevant performance criteria will need to be addressed by means of a separate Fire Engineering Report (FER) for fire safety matters, and Performance Solution Report for non-fire-safety matters; such reports are to be prepared under separate cover.

1.3 BUILDING CODE OF AUSTRALIA

The National Construction Code (**NCC**) is Australia's primary set of technical design and construction provisions for buildings.

As a performance-based code, it sets the minimum required level for the safety, health, amenity, accessibility, and sustainability of certain buildings. The Australian Building Codes Board, on behalf of the Australian Government and each State and Territory government, produces and maintains the National Construction Code.

The NCC has three (3) volumes being:

+ Volume One - containing technical design and construction requirements for all Class 2 to 9 buildings.
+ Volume Two - containing technical design and construction requirements for certain residential (Class 1) and non-habitable buildings and structures (Class 10).
+ Volume Three - Containing technical requirements for the design and construction for plumbing and drainage systems in new and existing buildings.

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code (**NCC**) Series Volume One – Building Code of Australia, 2022 Edition (**BCA**), incorporating the State variations where applicable.

Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority, or for Crown projects the date of the invitation for tenders to carry out the Crown building work, or in the absence of tenders the date on which the Crown building work commences.

A reference to the BCA in this report is a reference to **BCA2022**, being volume 1 of the NCC.

1.4 LIMITATIONS

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

1. the structural adequacy or design of the building;
2. the inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and
3. the design basis and/or operating capabilities of any proposed electrical, mechanical or hydraulic services.

This report does not include, or imply compliance with:

1. the National Construction Code – Plumbing Code of Australia Volume 3
2. the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to) (Note: The provision of access for people with a disability for the subject development has not been assessed against the Deemed-to-Satisfy Provisions of Part D4 and Clauses E3D7, E3D8, F4D5, F4D6, F4D7 and F4D12 of BCA2022 unless otherwise discussed in this report);
3. Demolition Standards not referred to by the BCA;
4. Work Health and Safety Act 2011;
5. Requirements of Australian Standards unless specifically referred to;
6. Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and
7. Conditions of Development Consent issued by the Local Consent Authority.

1.5 DESIGN DOCUMENTATION

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

2.0 Building Description

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

2.1 RISE IN STOREYS (CLAUSE C2D3)

The building has a rise in storeys of three (3).

2.2 CLASSIFICATION (CLAUSE A6G1)

The building has been classified as follows.

Table 1: Building Classification

Class	Level	Description
Class 6	Ground floor	Retail tenancies, and a café/restaurant
Class 7a	Ground floor	Carpark and building services
Class 2	Levels 1 and 2	Residential SOU's

2.3 EFFECTIVE HEIGHT (CLAUSE A1G4)

The building has an *effective height* of 6.90m.

2.4 TYPE OF CONSTRUCTION REQUIRED (TABLE C2D2)

The building is required to be of **Type A** Construction.

Note: Since the residential units are separated from the ground floor by a fire-rated podium, there may be an opportunity to consider the residential component as complying with the requirements for Type C Construction. This approach must be further developed by the appointed fire engineer during the construction stage and is subject to review and approval by all relevant stakeholders, including the Principal Certifier and Fire and Rescue NSW (FRNSW).

2.5 FLOOR AREA AND VOLUME LIMITATIONS (TABLE C3D3)

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

Class 6	Maximum Floor Area	5,000m^2
	Maximum Volume	30,000m^3
Class 7a	The carpark is to be provided with a sprinkler system complying with Specification 17 and AS 2118.1:2017, and as such, there are no maximum floor area or volume limitations for this area.	

Class 2	The Class 2 portions of the building are not subject to floor area and volume limitations of C3D3 as Specifications 5 and Clause C4D12 of the BCA regulate the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 buildings.

2.6 FIRE COMPARTMENTS

The following *fire compartments* have been assumed:

1. Ground floor level, including the commercial tenancies and carpark, is considered as one fire compartment.

Note 1: To achieve the above, all building elements on the Ground floor level must have the higher FRL prescribed in Specification 5 (Class 6).

Note 2: It is proposed as a fire-engineered Performance Solution to reduce the FRL of the ground floor from three (3) hours to two (2) hours.

2. Each residential unit is considered to have its own fire compartment.

2.7 EXITS

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

1. Exit doors at the perimeter of the Ground floor level.
2. Two non-fire-isolated stairways on level 1

2.8 CLIMATE ZONE

The building is located within Climate Zone 2.

2.9 BUILDING IMPORTANCE LEVEL

Certain Australian Standards (particularly structural standards) require the Importance Level of the building to be determined. The importance level relates to the individual actions on a building listed in Clause B1D3 of the BCA. The building is of importance level 2.

Table B1D3a of the BCA provides the following:

Importance Level	Building Types	Jensen Hughes Interpretation and Examples
1	Buildings or structures presenting a low degree of hazard to life and other property in the case of failure.	1 and 2 storey factory buildings
2	Buildings or structures not included in Importance Level 1, 3 and 4.	Residential apartment buildings and associated carparking. Office buildings

Importance Level	Building Types	Jensen Hughes Interpretation and Examples
3	Buildings or Structures that are designed to contain a large number of people.	Stadia, Entertainment venues, shopping centres. Transport facilities
4	Buildings or Structures that are essential to post-disaster recovery or associated with hazardous facilities.	Data centres, evacuation centres

2.10 LOCATION OF FIRE-SOURCE FEATURES

The fire source features for the subject development are:

North: The far boundary of Balun Lane

South: The far boundary of Fingal Street

East: The boundary of the adjacent building (1 Fingal Street) – Less than 3m

West: The boundary of the adjacent building (7 Fingal Street) – 0m

In accordance with Clause S5C2 of Specification 5, a part of a building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that–

a. has an FRL of not less than 30/–/–; and

b. is neither transparent nor translucent.

3.0 BCA Assessment

3.1 INTRODUCTION

The assessment undertaken relates to the plans prepared for the development consent application. The technical details required for a development consent are far less than those required for a construction certificate. As such, this assessment is designed to address a higher-level evaluation of the building against the provisions of the BCA.

The main purpose of this report is to identify any major design changes required to the building, services required to be installed, and the fundamentals of design required by sections C, D (Except Part D4), E (Except Clauses E3D7 and E3D8), F (Except Clause F4D5), G and H (where applicable) of the BCA. This report does not address the design requirements for the structure of the building (Section B) or for the detailed design of services (Section E) and is subject to the limitations outlined under Section 1.4 of this report.

The summary below is to be read in conjunction with the BCA specification contained in Annexure E of the report.

3.2 RELATIONSHIP TO THE DESIGN AND BUILDING PRACTITIONERS ACT

The Design and Building Practitioners Act requires certain specified designs to be certified by a Registered Practitioner and the issuing of a Design Compliance Declaration (DCD). The declared designs include:

Structure

Building Enclosure (e.g. Façade);

Fire Safety Systems (e.g. services, egress and FRLs)

Waterproofing

Fire Safety Performance Solutions

This report contains an assessment of the plans and specifications available, which are not sufficient in detail to allow any DCD to be issued by others. This report is not to be construed as or used to support a DCD at the Construction Certificate Stage, as it is based on development application drawings only.

3.3 FIRE RESISTANCE AND STABILITY – PART C2 & SPECIFICATION 5

The building is proposed to be constructed of the following elements:

Element	Method of Construction
External Walls	Masonry, Glazing, Fibre cement cladding, Aluminium batten and Aluminium finish
Floors	Concrete slab
Roof	Steel sheeting
Internal Walls (between SOU's)	Masonry wall
Lift shafts	Concrete
Stair shafts	Stairs are not enclosed in shafts

The required fire resistance levels for the building elements are outlined in Annexure C of this report.

The external walls and all components of the wall, in a building of Type A construction, are required to be non-combustible in accordance with BCA Clause C2D10. Full details have not been provided with respect to the materials of the external wall and further details will be required to be submitted at Construction Certificate Stage for assessment.

A fire-engineered Performance Solution is required for the followings:

1- To reduce the Fire Resistance Level (FRL) of the commercial portion of the building to two (2) hours in lieu of three (3) hours.

2- To permit the use of external load-bearing timber columns on the southern elevation, where an FRL of 180/-/- is required.

   The Performance Solution must also address the non-combustibility requirements applicable to elements of external walls, as the timber columns form part of the external wall construction.

Fire Hazard Properties

Internal linings and materials are required to meet the specified fire hazard properties of BCA Clause C2D11 and Specification 7.

3.4 COMPARTMENTATION AND SEPARATION – PART C3

Residential

Under the provisions of BCA Clause C3D3, the residential portion of the building is not subject to any floor area or volume limitations.

Commercial

The Class 6 portion of the building has been assessed, and the floor area and volume of these compartments are less than that permitted by BCA Clause C3D3. As such, compliance with the provisions of the BCA for compartmentation is readily achieved.

Carpark

The carpark is required to have a fire sprinkler system in accordance with BCA Specification 17 and AS2118.1:2017, as it accommodates more than forty (40) vehicles. Therefore, the carpark is not subject to the floor area and volume limitations under BCA Clause C3D3.

Spandrel Separation

The development is Type A Construction, and BCA Clause C3D7 requires suitable vertical and/or horizontal spandrel separation between the openings in the external walls on different storeys. The plans indicate suitable spandrels are provided where required by horizontal balcony slabs, which achieve 1100mm length, therefore complying with the requirements of spandrel separation.

Electricity supply system

The main switchboard is located on the northern external wall of the building. If the switchboard is required to sustain emergency equipment in an emergency, the switch room is to have an FRL of 120/120/120. The design of the switch room is such that compliance can be readily achieved.

The electricity substation on the Ground floor level must be separated from the remainder of the building by construction having an FRL of not less than 120/120/120 and doorways protected with a self-closing fire door having an FRL of not less than -/120/30.

3.5 PROTECTION OF OPENINGS – PART C4

3.5.1 Openings in external walls

There is no opening on the external wall that needs protection as they are not in an external wall that requires to have an FRL and are more than three (3) metres of the boundary.

3.5.2 Bounding Construction

The walls between the Sole-Occupancy-Units (SOUs) are internal walls that require an FRL of 90/90/90. As such, the doors to the sole occupancy units are required to be self-closing FRL --/60/30 fire doors in accordance with BCA Clause C4D12.

3.5.3 Openings in Floors for Services and Service Installations

Where electrical, plumbing, mechanical or other services pass through an element of construction that is required to achieve a fire resistance level (FRL), the service installation shall not compromise the fire resistance level of the element. As such, the service installation must be fire sealed with a compliant system, such as a fire collar on PVC pipes or fire-rated mastic on electrical cables tested in accordance with AS1530.4- 2014.

Fire sealing of services is a design element that will require detailed assessment and specification at the Construction Certificate stage.

3.5.4 Roof lights

As the building is a Type A Construction, the roof lights or the like must be installed at least 3m from boundaries, parts, and elements described in BCA Clause S5C16. The drawings demonstrate that the roof lights have been designed to meet these requirements; however, further assessment will be necessary at the Construction Certificate stage to ensure compliance is achieved.

3.6 OCCUPANT ACCESS AND EGRESS – SECTION D

3.6.1 Egress from the building

General Requirements

As the development is under twenty-five (25) metres effective height, each *storey* is permitted to have a single exit.

Where the egress discharges to open space on the property, a continuous pathway from the point of discharge to the street is required. The plans do indicate such a pathway, and as such, the provisions of BCA Clause D2D15 are readily satisfied.

Details of treads and risers, landings, thresholds, balustrades, and handrails have not been provided and must be further assessed to ensure that compliance is achievable. The design of these elements can be assessed at the Construction Certificate Stage.

Carpark/commercial

Egress from the carpark/retail shall ensures that no point on the floor is more than twenty (20) metres from an exit, or where a point of choice of two (2) exits is available, the distance to the nearest of those exits can increase up to forty (40) metres, as permitted by BCA Clause D2D5.

The roller shutter of the commercial bin room must be held in the open position while in use.

Where the exit doors do not open in the direction of exit, including the commercial tenancies and other areas smaller than 200m^2, they need to be fitted with devices for holding them in the open position in accordance with BCA Clause D3D25(1)(b).

Residential Floors

The building has no more than three (3) storeys connected by a stairway and can have non-fire isolated stairways as per Clause D2D4 of the BCA.

The exit travel distance in the residential portion of the building must be no more than six (6) metres from a point where access to two exits is available. The distance between alternative exits must be no greater than forty-five (45) metres.

It will be necessary to undertake a Fire Engineered Performance Solution to permit the extended travel distances within the following locations:

+ BCA Clause D2D5 – Exit travel distance

  The exit travel distance from the doors of the southern SOU's to a point of choice exceeds the requirements (8m in lieu of 6m).

+ BCA Clause D2D6 – Distance between alternative exits

  The distance between alternative exits on Level 1 exceeds the requirements (46m in lieu of 45m)

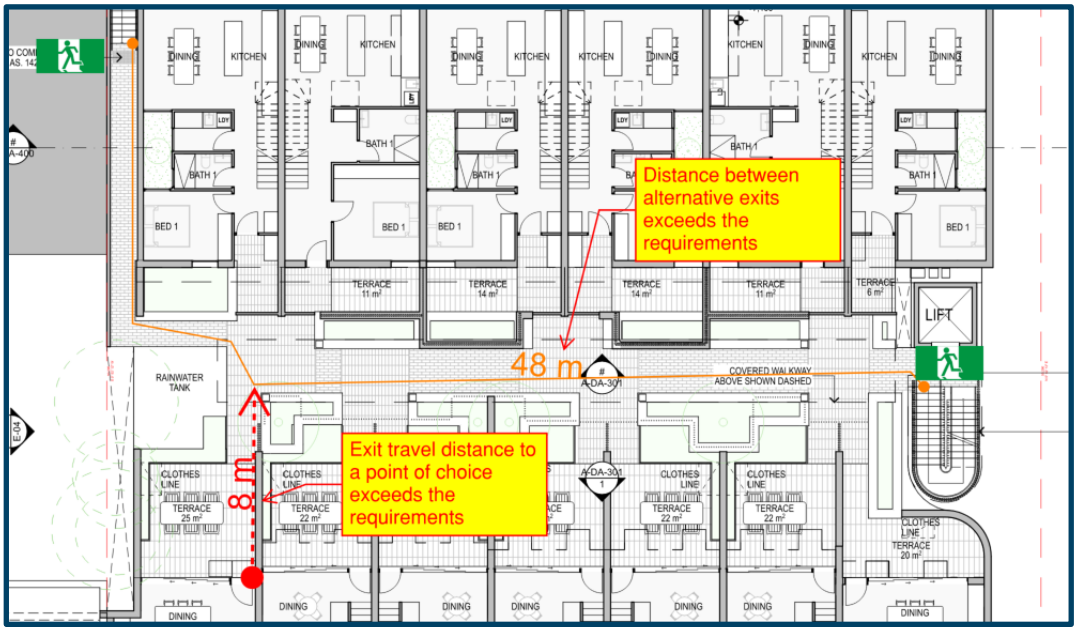

Figure 2 - Exit travel non-compliances

3.6.2 Protection of openable windows

The window openings of the bedrooms must be provided with protection where the floor below the window is 2 m or more above the surface beneath it. The protection must be provided in accordance with BCA Clause D3D29 and be further assessed at the Construction Certificate stage.

3.6.3 Access for people with a disability

BCA Part D4 has not been assessed within this report. It is assumed a separate Access Consultant has been engaged.

3.7 SERVICES AND EQUIPMENT- PARTS E1, E2, E3 AND E4

The building is required to be provided with the services and equipment set out in Annexure B of this report. The annexure also outlines the standard of performance to be achieved by the services and equipment.

3.7.1 Part E1 – Fire Fighting Equipment

Specific comments pertaining to fire fighting services and equipment required for the building, as set out in Annexure B of this report, are provided as follows:

Fire hydrant

As the building has a floor area greater than 500m^2, fire hydrant protection is required. An onsite fire hydrant system with hydrants located within four (4) metres of exits will be provided in accordance with AS2419.1-2021. The plans do not show the location of fire hydrants and further information will be required at the Construction Certificate Stage from the Hydraulic consultant to demonstrate compliance.

Due to the multiple number of entrances to the building, the Fire Hydrant Booster will not be within, affixed or in sight of the principal pedestrian entrance. Therefore, a fire-engineered Performance Solution will be required to address the requirements at the Construction Certificate Stage.

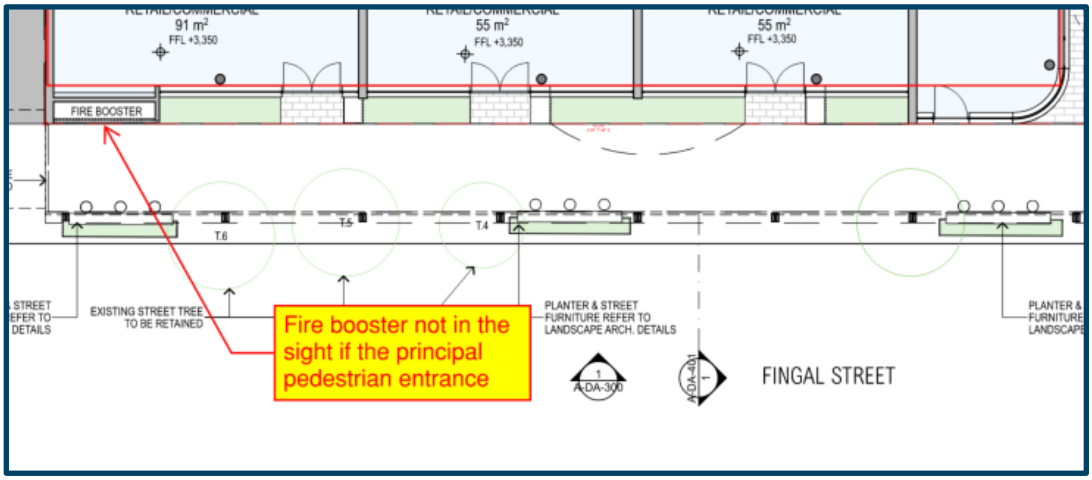

Figure 3 - Fire booster

Fire hose reel

The Ground floor level is greater than 500m^2 and is required to have fire hose reels (FHR). The FHR's must be located within four (4) metres of an *exit*, and that coverage to all points on a floor is within thirty-six (36) metres, plus four (4) metres of spray as per AS2441-2005. Further design development is required from the Hydraulic consultant to achieve compliance.

Sprinklers

The Ground floor level is required to have a sprinkler system installed as per BCA Clause E1D9 and Specification 17 in accordance with AS 2118.1:2017, as a FPAA101H or FPAA101D sprinkler system can not be used in the carpark accommodating more than forty (40) vehicles.

Portable fire extinguishers

The development is required to have portable fire extinguishers installed throughout in accordance with AS2444- 2001. Compliance is readily achievable.

3.7.2 Part E2 – Smoke Hazard Management

Specific comments pertaining to smoke hazard management system services and equipment required for the building, as set out in Annexure B of this report are provided as follows:

Smoke alarms

Smoke alarms will be required within residential sole occupancy units in accordance with Part E2 & AS3786-2014.

Smoke detection & alarm system

The commercial portion of the building must be provided with a smoke detection and alarm system complying with Specification 20. The preliminary Development Application plans do not provide any details regarding the layout of the smoke detection and alarm system. Further information is needed from the Electrical consultant during the Construction Certificate stage to demonstrate compliance.

Mechanical ventilation system

The carpark must be provided with a mechanical ventilation system in accordance with AS 1668.2 and Clause 5.5 of AS 1668.1.

3.7.3 Part E3 – Lift Installations

A lift is provided to the building and is located within its own shaft. The lift does not serve an *effective height* of more than twelve (12) metres. Therefore, the minimum shaft dimensions must allow for a 1100mm width x 1400mm depth lift car.

No details have been provided to undertake an assessment. Therefore, further information is required during the Construction Certificate stage.

3.7.4 Part E4 – Visibility in emergency, exit signs and warning systems.

Specific comments pertaining to emergency lighting, exit signs and warning systems required for the building as set out in Annexure B of this report are provided as follows:

- Emergency lighting is required as per BCA Clause E4D2 for all non-fire-isolated stairs, corridors, passageways, hallways, or the like that is part of a path of travel to an exit.
- Exit signs are required to be installed throughout the building, including directional exit signs to guide occupants to the designated exits in the building.

The DA plans do not provide any details for the emergency lighting and exit signs. As such further information will be required at the Construction Certificate stage, however compliance is readily achievable.

3.8 EXTERNAL WATERPROOFING MEMBRANE

To achieve compliance with Clause F1D5, AS 4654.1 & 2 the external balconies are required to be provided with a minimum step-down or hob as required by the standard and depending on the wind classification between the internal and external finished floor levels. If the required stepdown or hob cannot be achieved the external balconies will require a grated drain at the threshold of the doorway in accordance with AS 4654.2.

Additional special consideration is also required with regard to the planter boxes for which enhanced and additional waterproofing/weatherproofing considerations are required.

Sufficient sections and elevations demonstrating compliance with BCA Clause F1D5 & AS4654.1 & 2 will be required at Construction Certificate stage.

3.9 FACILITIES IN BUILDINGS – PART F4

Clause F4D2 of the BCA requires the following facilities within a Class 2 building:

- Kitchen sink;
- Bath or shower;
- Closet pan;
- Washbasin
- Laundry facilities

The plans indicate that each of these facilities is provided within each sole occupancy unit. It is required to ensure that the design is capable of accommodating the following items in laundry facilities:

- One washtub
- Space for a washing machine

+ Clothes drying facilities comprising clothes line or hoist with not less than 7.5m of line per SOU, or space for one heat-operated drying cabinet or appliance

3.10 FACILITIES IN CLASS 3 TO 9 BUILDINGS – PART F4

The following sanitary facilities are provided for the commercial portion of the building:

	Closet Pans	Urinals	Washbasins
Male	2 WC	1 Urinals	1 Basins
Female	3 WC	N/A	1 Basin
Accessible	1 WC	N/A	1 Basin

Note: The accessible bathroom has been counted at least once towards every sex.

Based on the numbers above and with consideration of equal numbers of males and females, the facilities can accommodate up to 100 patrons (50 males & 50 females) in the café/restaurant and 40 staff (20 males & 20 females). This is more than the population calculated in accordance with BCA Clause D2D18 and therefore, compliance is achieved.

3.11 ROOM HEIGHTS – PART F5

The section drawings indicate that the ceiling heights for all habitable spaces, corridors, and the like can achieve the minimum height of 2400 mm. In non-habitable rooms such as toilets, garages and storage rooms, the ceiling height is no less than 2100 mm.

The ceiling heights have been assessed in accordance with BCA Part F5 which has indicated that compliance is readily achievable within all habitable spaces, corridors, and the like.

3.12 LIGHT AND VENTILATION – PART F6

3.12.1 Method and extent of natural light

Natural light is required to all habitable rooms within a Class 2 building. The plans have been assessed which reveals all habitable spaces are served by windows or glazed doors. The area of the doors and windows (exclusive of any framing members, glazing bars or other obstructions) are likely to be sufficient in size to provide the required 10% natural light to all habitable rooms. However, window specifications will be needed with design development to verify compliance.

3.12.2 Ventilation of rooms

Ventilation is required in all habitable rooms within a Class 2 building. Clause F6D6 allows for either natural ventilation as per Clause F6D7 or mechanical ventilation or an air-conditioning system complying with AS1668.2 and AS/NZS3666.1.

The plans have been assessed which reveals all habitable spaces are served by windows or glazed doors. The area of the doors and windows (exclusive of any framing members, glazing bars or other obstructions) are likely to be sufficient in size to provide the required 5% ventilation to all habitable rooms. However, a window specification will be needed with design development to verify compliance if natural ventilation is relied upon.

3.12.3 Commercial Buildings

For a Class 6 building, artificial lighting and mechanical ventilation are required, and these systems can be readily installed in the building. Further design development and input will be required from the Electrical and Mechanical Consultants at the Construction Certificate Stage.

The carpark is required to have a mechanical ventilation system complying with AS1668.2. No information has been provided; However, the mechanical system can be readily designed. Further design input will be required from the Mechanical Consultant to demonstrate compliance.

3.13 SOUND INSULATION – PART F7

The walls between the terrace of Units 02 and 06 and the bedrooms of Units 01 and 07 must achieve an acoustic rating of Rw+Ctr 50, in accordance with BCA Clause F7D6.

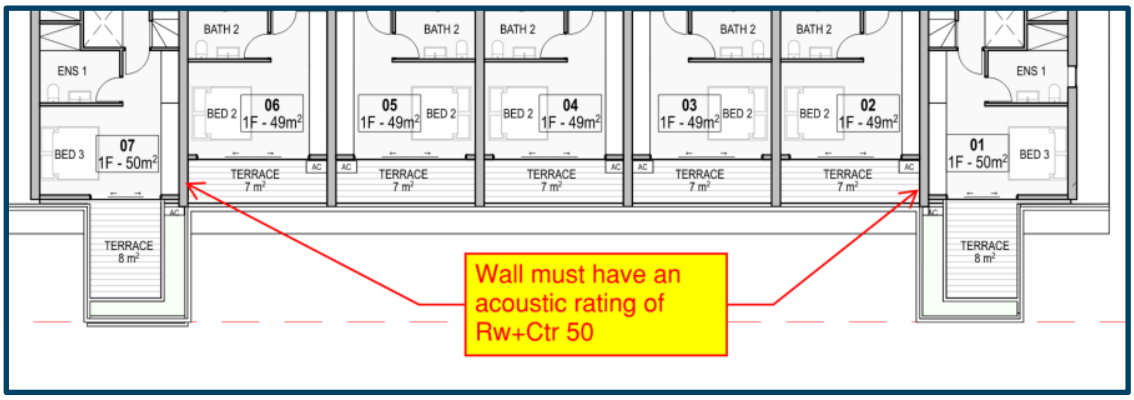

Figure 4 - Sound insulation between SOU's

3.14 CLEANING WINDOWS – NSW G1D5

A building must provide for a safe manner of cleaning any *windows* located three (3) or more storeys above ground level as per NSW Clause G1D5. Two (2) options are available for cleaning the windows:

1. The windows can be cleaned wholly from within the building; or
2. Provisions are made for cleaning windows by a method complying with the *Work Health and Safety Act 2011* and regulations made under the Act.

No information has been provided to determine if the development can comply with this requirement, and further information will be required during the design development stage.

3.15 ENERGY EFFICIENCY - SECTION J

To be separately assessed by an Energy Consultant.

Annexures

Annexure A - Design Documentation

This report has been based on the following design documentation.

Table 2: Architectural Plans

Architectural Plans Prepared by CHROFI			
Drawing Number	**Revision**	**Date**	**Title**
A-DA-000	04	16/04/25	COVER PAGE
A-DA-001	04	16/04/25	LOCATION PLAN
A-DA-002	04	16/04/25	SURVEY
A-DA-003	03	16/04/25	SITE PLAN
A-DA-004	03	16/04/25	DEMOLITION PLAN
A-DA-200	04	16/04/25	GROUND FLOOR PLAN
A-DA-201	04	16/04/25	FIRST FLOOR PLAN
A-DA-202	04	16/04/25	SECOND FLOOR PLAN
A-DA-203	04	16/04/25	ROOF PLAN
A-DA-300	04	16/04/25	ELEVATIONS
A-DA-301	03	16/04/25	ELEVATIONS
A-DA-302	03	16/04/25	ELEVATIONS
A-DA-400	04	16/04/25	SECTIONS
A-DA-401	03	16/04/25	SECTIONS
A-DA-500	04	16/04/25	SHADOW PLAN - EXISTING
A-DA-501	04	16/04/25	SHADOW PLAN - PROPOSED
A-DA-601	03	16/04/25	GFA SCHEDULES
A-DA-602	03	16/04/25	SOLAR ACCESS
A-DA-603	03	16/04/25	ADG SCHEUDLE
A-DA-604	03	16/04/25	DEEP SOIL
A-DA-605	03	16/04/25	FINISHES SCHEDULE

Annexure B - Essential Services

The following fire safety measures are required to be installed in the building. The following table may be required to be updated as the design develops and options for compliance are confirmed, including any omissions or additions as a result of the fire engineering processes.

This section provides information for the design team, including service designers, and may need to be updated upon receipt of final designs and performance solutions at the construction approval stage.

Table 3: Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Access Panels & doors/hoppers (fire rated)	**BCA2022 Specification 12** AS 1905.1:2015 (Fire Resistant Door sets)
2.	Construction Joints	**BCA2022 C2D2, Specification 5** **BCA2022 C4D16** AS 1530.4:2014 & AS 4072.1:2005
3.	Fire doors	**BCA2022 C3D13** (Separation of Equipment) **BCA2022 C4D12** (Bounding Construction) AS1905.1: 2015
4.	Fire seals protecting openings in fire-resisting components of the building	**BCA2022 C4D15** (Openings for service installations) **BCA2022 Specification 13** AS1530.4:2014 & AS4072.1-2005
5.	Lightweight construction As appropriate and in accordance with the FRL requirements of Specification 5.	**BCA2022 C2D2, Specification 5** **BCA2022 C2D9, Specification 6** **BCA2022 C4D12** (Bounding Construction) AS1530.4:2014
General		
6.	Portable fire extinguishers	**BCA2022 E1D14** AS 2444–2001
7.	Fire blankets	AS 2444–2001
General Egress		
8.	Operation of door latches - Failsafe	**D3D26** (Operation of Latch) AS 1670.1 (Amdt 1)
9.	Warning & operational signs	**BCA2022 D3D28** (Signs on Fire Doors)

Item	Essential Fire and Other Safety Measures	Standard of Performance
		BCA2022 D4D7 (Braille Exit Signs) (Note: E4D5 (Exit Signs)) **BCA2022 E3D4** (Lift Signs)
Lifts		
10.	Access to Lift Pits Located at the lowest level or if >3m, provided through an access door	**BCA2022 D2D22** (Access to Lift Pits) 'DANGER LIFT WELL – ENTRY OF UNAUTHORISED PERSONS PROHIBITED – KEEP CLEAR AT ALL TIMES'
Electrical Services		
11.	Automatic fire detection & alarm:	**BCA2022 E2D3, E2D8, E2D9, E2D12, Specification 20** **BCA2022 C4D12** (Bounding Construction) **Specification 12** **BCA2022 S20C3** (Smoke alarm system) **BCA2022 S20C4** (Smoke detection system) AS 3786:2014 (Amdt 1-4) AS 1670.1 (Amdt 1) (Fire) – Section 4 and 5 (Detectors)
12.	Emergency lighting	**BCA2022 E4D2, E4D4** AS/NZS 2293.1:2018
13.	Exit signs	**BCA2022 E4D55** (Exit Signs) **BCA2022 E4D6** (Direction Signs) **BCA2022 E4D8** (Design and Operation - Exits) AS/NZS 2293.1:2018
14.	System Monitoring	**BCA2022 S20C8** AS 1670.3 (Amdt 1) Monitoring required for any: sprinkler system
Hydraulic Services		
15.	Automatic fire suppression systems Carpark and commercial portions only	**BCA2022 E1D9** **BCA2022 Specification 17** AS 2118.1:2017 (Sprinklers)
16.	Fire hydrant systems	**BCA2022 E1D2** AS 2419.1:2021 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'

Item	Essential Fire and Other Safety Measures	Standard of Performance
		Proposed fire-engineered Performance Solution
17.	Hose reel systems Carpark and commercial portions only	**BCA2022 E1D3** AS 2441:2005
Mechanical Services		
18.	Fire dampers	**BCA2022 E2, Specification 20, Specification 21** **BCA2022 C4D16** AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
19.	- Mechanical air handling systems - Mechanical ventilation to carpark. - Auto-shutdown of Air-handling System. Any system that recycles air from one fire compartment to another, or operates in a manner that may spread smoke and does not operate as a smoke control system as per AS 1668.1:2015;	**BCA2022 E2,** **Specification 20, Specification 21** AS 1668.1:2015 (Amdt 1) **Note: 5.5.3 Override control** To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point. **Note:** Signage should be located at the car park entry indicating the location of the control switches.

Annexure C - Fire Resistance Levels

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

Type A Construction

Table 4: Type A Construction

Table S5C11a: Type A construction: FRL of loadbearing parts of external walls

Distance from a fire-source feature	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Less than 1.5 m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/60/60	120/90/90	180/180/180	240/240/180
3m, or more	90/60/30	120/60/30	180/120/90	240/180/90

Table S5C11b: Type A construction: FRL of non-loadbearing parts of external walls

Distance from a fire-source feature	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Less than 1.5 m	-/90/90	-/120/120	-/180/180	-/240/240
1.5 to less than 3 m	-/60/60	-/90/90	-/180/120	-/240/180
3m, or more	-/-/-	-/-/-	-/-/-	-/-/-

Table S5C11c: Type A construction: FRL of external columns not incorporated in an external wall.

Column Type	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing	90/-/-	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/-/-	-/-/-	-/-/-	-/-/-

Table S5C11d: Type A construction: FRL of common walls and fire walls

Wall Type	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing or non-bearing	90/90/90	120/120/120	180/180/180	240/240/240

Table S5C11e: Type A construction: FRL of loadbearing internal walls

Location	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair shafts	90/90/90	120/120/120	180/120/120	240/120/120
Bounding public corridors, public lobbies and the like	90/90/90	120/-/-	180/-/-	240/-/-
Between or bounding sole-occupancy unit	90/90/90	120/-/-	180/-/-	240/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion	90/90/90	120/90/90	180/120/120	240/120/120

Table S5C11f: Type A construction: FRL of non-loadbearing internal walls

Location	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair shafts	-/90/90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like	-/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy unit	-/60/60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like shafts not used for	-/90/90	-/90/90	-/120/120	-/120/120

the discharge of hot products of combustion				

Table S5C11g: Table A construction: FRL of other building elements not covered by Tables S5C11a to S5C11f

Building Element	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
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

Note 1: To achieve the above, all building elements on the Ground floor level must have the higher FRL prescribed in Specification 5 (Class 6).

Note 2: It is proposed as a fire-engineered Performance Solution to reduce the FRL of the ground floor from three (3) hours to two (2) hours.

Annexure D - Definitions

Average specific extinction area

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

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m^2) as determined by AS ISO 9239.1:2003.

Designated bushfire prone area

Designated bushfire prone area means land which has been designated under a power of legislation as being subject, or likely to be subject, to bushfires.

Effective height

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

Envelope

Envelope, for the purposes of Section J in Volume One, means the parts of a building's fabric that separate a conditioned space or habitable room from—

1. the exterior of the building; or
2. a non-conditioned space including—
    a. the floor of a rooftop plant room, lift-machine room or the like; and
    b. the floor above a carpark or warehouse; and
    c. the common wall with a carpark, warehouse or the like.

Exit

Exit means –

1. Any, or any combination of the following if they provide egress to a road or open space—
    a. An internal or external stairway.
    b. A ramp.
    c. A fire-isolated passageway.
    d. A doorway opening to a road or open space.
    e. A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Fire compartment

Fire compartment means –

1. the total space of a building; or

2. when referred to in—

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

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

Fire-resistance level (FRL)

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

1. structural adequacy; and
2. integrity; and
3. insulation,

and expressed in that order.

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

Fire-source feature

1. the far boundary of a road, river, lake or the like adjoining the allotment; or
2. a side or rear boundary of the allotment; or
3. an external wall of another building on the allotment which is not a Class 10 building.

Fire wall

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

Flammability index

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

Group number

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

Horizontal exit

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

Loadbearing

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

Non-combustible

Non-combustible means—

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

Occupiable outdoor area

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

1. that is open to the sky; and
2. to which access is provided, other than access only for maintenance; and
3. that is not open space or directly connected with open space.

Open space

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

Performance Requirement

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

Performance Solution

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

Sarking-type material

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

Smoke developed index.

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

Smoke development rate

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

Smoke growth rate index

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

Sole-occupancy unit

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

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

Annexure E - BCA Compliance Specification

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

Architectural Design Certification

1. The FRL's of building elements for the proposed works have been designed in accordance with S5C11 of Specification 5 of BCA2022 for a building of Type A Construction.
2. Lightweight construction used to achieve the required fire resistance levels will comply with Specification 6 of BCA2022.
3. Building elements, including external walls and their components in buildings of Type A Construction, must be non-combustible in accordance with C2D10 of BCA2022.
4. Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C2D11 and Specification 7 of BCA2022.
5. Any fire-protected timber proposed will comply with Clause C2D13 of BCA2022.
6. Any ancillary elements fixed, installed, or attached to the internal parts or external face of an external wall that is required to be non-combustible will comply with Clause C2D14 of BCA2022.
7. Floors separating storeys of different classifications will comply with BCA Clause C3D10 of BCA2022.
8. Equipment will be separated in accordance with Clause C3D13 of BCA2022.
9. Any electricity substation, any main switch room sustaining emergency equipment required to operate in emergency mode, will be separated from the remaining building with construction having an FRL 120/120/120 and provided with self-closing -/120/130 fire doors in accordance with Clause C3D14 of BCA2022.
10. The public corridors will be divided into intervals of not more than 40m in length with smoke proof walls in accordance with Clause C3D15, and S11C2 of Specification 11 of BCA2022. The smoke doors shall swing in both directions, or otherwise be installed to swing in the direction of egress.
11. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C4D3 and C4D4 of BCA2022 or protected in accordance with Clause C4D5 of BCA2022.
12. Services penetrating elements required to possess an FRL including the floor slabs, walls, shafts, etc. will be protected in accordance with Clause C4D13, C4D14 and C4D15 and Specification 13 of BCA2022.
13. Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation will be protected in accordance with BCA Clause C4D16.
14. Doorways and other openings in internal walls required to have an FRL will be protected in accordance with Clause C4D12 of BCA2022.
15. Columns protected by light weight construction will achieve an FRL not less than the FRL for the element it is penetrating, in accordance with Clause C4D17 of BCA2022.
16. A lintel will have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and it spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non- loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of

a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification 5 Clause S5C4 BCA2022.

17. Fire doors will comply with AS 1905.1:2015 and Specification C4D5 of BCA2022.
18. The number of exits provided to the building will be in accordance with Clause D2D3 of BCA2022.
19. Travel distances to exits will be in accordance with Clause D2D5 of BCA2022. A fire-engineered Performance Solution is proposed to address the non-compliances.
20. The alternative exits will be distributed uniformly around the storey and will be not be less than 9m apart, and not more that 45m apart in any residential portions or patient care areas in the health-care building, or otherwise not more than 60m apart, in accordance with Clause D2D6 of BCA2022. A fire-engineered Performance Solution is proposed to address the non-compliances.
21. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D2D7 to D2D11 of BCA2022.
22. Discharge from exits will be in accordance with Clause D2D15 of BCA2022.
23. The non-required stairways, ramps and escalators will be in accordance with Clause D2D17 of BCA2022.
24. The ladder from the plant, lift machine rooms, and electricity network substation in lieu of a stairway will be in accordance with Clause D2D21 of BCA2022.
25. Access to the lift pit will be in accordance with Clause D2D22 of BCA2022.
26. The non-fire isolated stairs will be constructed in accordance with Clause D3D4 of BCA2022.
27. The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D3D8 of BCA2022 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
28. Stair geometry to the new stairways will be in accordance with Clause D3D14 of BCA2022. Stair treads are to have a surface with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013.
29. Landings and door thresholds throughout the development will be provided in accordance with Clause D3D15 and D3D16 of BCA2022. Landings to have either a surface with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.
30. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D3D17 to D3D21, and D3D22 of BCA2022.
31. The doorways and doors will be in accordance with Clause D3D24 and D3D25 of BCA2022.
32. Door latching mechanisms will be in accordance with Clause D3D26 of BCA2022.
33. Signage will be provided on fire and smoke doors in accordance with Clause D3D28 of BCA2022.
34. The openable portion of a window in a bedroom of a Class 2 building will be protected with a restricting device or secure screen that does not allow a 125mm sphere to pass through the opening or screen and resist an outward horizontal action of 250N in accordance with Clause D3D29 of BCA2022. In addition to window protection, and for other openable windows 4 meters or more above the ground below, a barrier with a height not less than 865mm above the floor will be installed to the openable window.

35. Fire precautions whilst the building is under construction will be in accordance with Clause E1D16 of BCA2022.
36. External above-ground waterproofing membranes will comply with Clause F1D5 of BCA2022 and AS 4654 Parts 1 & 2:2012.
37. The new roof covering will be in accordance with Clause F3D2 of BCA2022.
38. Any sarking proposed will be installed in accordance with Clause F3D3 of BCA2022.
39. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F2D2 and F2D3 of BCA2022 and AS 3740:2010.
40. Damp proofing of the proposed structure will be carried out in accordance with Clause F1D6 and F1D7 of BCA2022.
41. Floor wastes, including falls to floor wastes (including any voluntarily proposed floor wastes), will be installed in accordance with Clause F2D4 of BCA2022.
42. All new glazing to be installed throughout the development will be in accordance with Clause F3D4 of BCA2022 and AS 1288:2006 / AS 2047:2014.
43. Sanitary facilities will be provided in the building in accordance with Clause F4D2, Table F4D2, Clause F4D4 and Table F4D4 of BCA2022.
44. Ceiling heights will be in accordance with Clause F5D2 of BCA2022.
45. Natural light will be provided in accordance with Clause F6D2, F6D3, and F6D4 of BCA2022.
46. Natural or mechanical ventilation will be provided in accordance with Clause F6D6, F6D7 and F6D8 of BCA2022.
47. Water closets and urinals will be located in accordance with Clause F6D9 of BCA2022.
48. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F6D10 of BCA2022.
49. Pliable building membranes installed in external walls will comply with Clause F8D3 of BCA2022 and where a pliable building membrane is not installed in an external wall, the primary water control layer will be separated from water sensitive materials by a drained cavity.
50. A safe manner for cleaning of windows located 3 or more storeys above ground level will be provided in accordance with the Work Health & Safety Act 2011 and regulations made under that Act in accordance with NSW G1D5 of BCA2022.
51. Essential fire or other safety measures must be maintained and certified on an ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2021.

Electrical Services Design Certification:

52. A smoke detection and alarm system will be installed throughout the building in accordance with E2D4 to E2D13, and Specification 20 of BCA2022.
53. Emergency lighting will be installed throughout the development in accordance with Clause E4D2, E4D4 of BCA2022 and AS/NZS 2293.1:2018.
54. Exit signage will be installed in accordance with Clause E4D5, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.
55. Artificial lighting will be installed throughout the development in accordance Clause F6D5 of BCA2022 and AS/NZS 1680.0:2009.

56. Electrical conductors located within the building that supply a main switchboard that sustains emergency equipment will comply with Clause C3D14 of BCA2022.

Hydraulic Services Design Certification:

57. Storm water drainage will be provided in accordance with Clause F1D3 of BCA2022 and AS/NZS 3500.3:2018
58. Fire hydrant system will be installed in accordance with Clause E1D2 of BCA2022 and AS 2419.1:2005 as required. A fire-engineered Performance Solution is proposed to address the non-compliance related to the location of the booster.
59. Fire hose reels will be installed in accordance with Clause E1D3 of BCA2022 and AS 2441:2005.
60. A sprinkler system will be installed in accordance with Clause E1D4 of BCA2022 Specification 17 and appropriate part(s) of AS 2118.
61. Portable fire extinguishers will be installed in accordance with Clause E1D14 of BCA2022 and AS 2444:2001.

Mechanical Services Design Certification:

62. An air-handling system which does not form part of a smoke hazard management system will be installed in accordance with Clause E2D3 of BCA2022, and AS 1668.1:2015.
63. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F6D6 of BCA2022 and AS 1668.2:2012.
64. Every storey of the car park will be ventilated in accordance with Clause F6D11 of BCA2022 and where not naturally ventilated it will be mechanically ventilated in accordance with AS 1668.2:2012 as applicable.
65. The commercial kitchen will be provided with a kitchen exhaust hood in accordance with Clause F6D12 of BCA2022, and AS 1668.1:2015 and AS 1668.2:2012.
66. Exhaust systems installed in a kitchen, bathroom, sanitary compartment, or laundry of a Class 2 sole-occupancy unit will have a minimum flow rate and discharge location in accordance with Clause F8D4 of BCA2022.
67. Where exhaust discharges directly or via shaft into a roof space of a Class 2 sole-occupancy unit, ventilation of the roof space will comply with Clause F8D5 of BCA2022.
68. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

69. The material and forms of construction for the proposed works will be in accordance with Clause B1D3, B1D4 and B1D6 of BCA2022 as follows:
    a. Dead and Live Loads – AS/NZS 1170.1:2002
    b. Wind Loads – AS/NZS 1170.2:2011
    c. Earthquake actions – AS 1170.4:2007
    d. Masonry – AS 3700:2018
    e. Concrete Construction – AS 3600:2018
    f. Steel Construction AS 4100:1998

g. Aluminium Construction – AS/NZS 1664.1 or 2:1997

h. ABCB Standard for Construction of Buildings in Flood Hazard Areas.

70. The FRL's of the structural elements for the proposed works have been designed in accordance with Specification 5 of BCA2022, including S5C11 for a building of Type A Construction.

71. Lightweight construction used to achieve required fire resistance levels will comply with Specification 6 of BCA2022.

72. The construction joints to the structure will be in accordance with Clause C4D16 of BCA2022 to reinstate the FRL of the element concerned.

Lift Services Design Certification:

73. Warning signage in accordance with Clause E3D4 of BCA2022 will be provided to the lifts to advise not to use the lifts in a fire.

74. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification 24 of BCA2022.

Acoustic Services Design Certification:

75. The sound transmission and insulation of the residential portions of the development will comply with Part F7 of BCA2022.