

SUMMIT CARE PENRITH

BCA ASSESSMENT REPORT

366 Jamison Road, Jamistown

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Executive summary

This document provides an assessment of the architectural design drawings for the proposed Residential Aged Care development at 366 Jamison Road, Jamisontown NSW366 Jamison Road, Jamistown, 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
Performance Solutions required		
1.	Doorway in Fire Wall It is proposed to provided a glazed sliding door within the fire wall separating the Car park from the Community Hub. The method of door protection will need to be subject to fire engineering assessment.	C4D6
2.	ILU Travel Distances There are unit entry doors, at the Southern end of the residential corridors that exceed the maximum travel distance of 12m to an exit (15.35m).	S18C4
3.	Car park Distance between Alternative Exits Distances between alternative exits within the Car park will exceed maximum permitted distance of 60m (72m) when measured back through points of choice.	D2D6
4.	Travel via fire isolated exits Evacuating occupants, discharging from the required fire isolated exits, will need to pass within 6m of the external walls of the building. The need and extent of protection required to be determined as part of fire engineering.	D2D12
5.	Hazards associated with Electric Vehicles Electric vehicles can prevent challenges relating to fire fighting. The hazards associated with these vehicles and their charging within the basement to be assessed as part of fire engineering.	E1D17

1.0 Basis of Assessment

1.1 LOCATION AND DESCRIPTION

The building development, the subject of this report, is located at 366 Jamison Road, Jamisontown NSW, where it is proposed to redevelop an existing aged care facility into a modern seniors living and aged care precinct. The development will be made up of three (3) Independent Living Apartment buildings, a Residential Aged Care building and an integrated administrative and communal facility.



Photograph courtesy of Six Maps

1.2 PURPOSE

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of the BCA, 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.

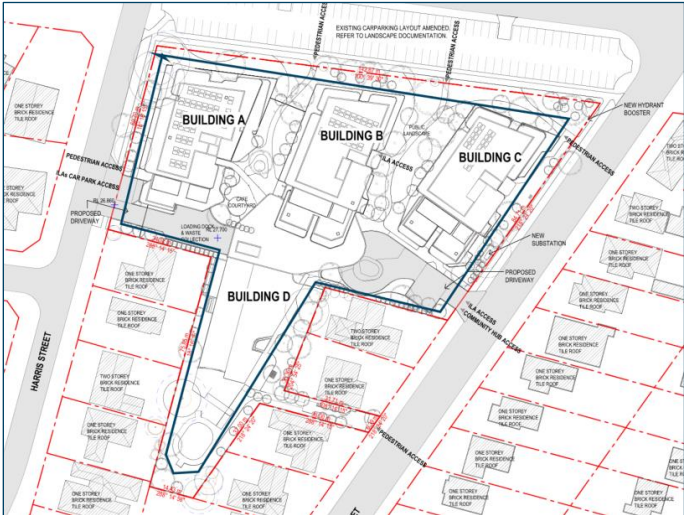
1.5 DESIGN DOCUMENTATION

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.

Whilst the blocks are labelled as separate buildings, the overall development will need to be considered as one given, they are located over the same shared basement area.



2.1 RISE IN STOREYS (CLAUSE C2D3)

The building has a rise in storeys of five (5).

2.2 CLASSIFICATION (CLAUSE A6G1)

The building has been classified as follows.

Table 1: Building Classification

Class	Level	Description
2	Ground to Level 4	Independent living units and associated areas.
7a	Basement	Car parking
9b	Ground and Basement	Community Hub Facilities
9c	Ground	Residential Aged Care Facility
10b	Basement	Indoor Swimming Pool

Note;

- Where part of building has been designed, constructed or adapted for a different purpose and is less than 10% of the floor area it is situated on, the classification of the other part may apply to the whole storey.

2.3 EFFECTIVE HEIGHT (CLAUSE A1G4)

The building has an *effective height* of greater than twelve (12) metres, being 12.800m.

2.4 TYPE OF CONSTRUCTION REQUIRED (TABLE C2D2)

The building is required to be of Type A Fire Resisting Construction.

2.5 FLOOR AREA AND VOLUME LIMITATIONS (TABLE C3D3)

The building's fire compartments are subject to maximum floor area and volume limits, for of: -

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.	
Class 7a	The carpark is to be provided with a sprinkler system complying with Specification 17) and as such there are no maximum floor area or volume limitations for this area.	
Class 9b/9c	Maximum Floor Area	8 000m ²
	Maximum Volume	48 000m ³
Class 10b	N/A	

2.6 FIRE COMPARTMENTS

The following *fire compartments* have been assumed:

1. The Car parking area.
2. The combined levels of the Community Hub.
3. The Residential Aged Care facility.

2.7 EXITS

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

1. The proposed stairways.
2. Ground floor doors opening directly to an open space.

2.8 CLIMATE ZONE

The building is located within Climate Zone 6.

2.9 ENTERTAINMENT VENUE

The building is not an Entertainment Venue.

2.10 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 importance level 3.

Table B1D3a of the BCA provides the following:

Importance Level	Building Types
1	Buildings or structures presenting a low degree of hazard to life and other property in the case of failure.
2	Buildings or structures not included in Importance Level 1, 3 and 4.
3	Buildings or Structures that are designed to contain a large number of people.
4	Buildings or Structures that are essential to post-disaster recovery or associated with hazardous facilities.

The Guide to the BCA provides a generic description of building types which have Importance Levels assigned. The Guide states that the “Importance Level” concept is applicable to building structural safety only and is considered on a case by case basis.

2.11 LOCATION OF FIRE-SOURCE FEATURES

The fire source features for the subject development are:

- The shared boundary with adjoining allotments.
- The far side boundary of the adjoining roads.

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 is in relation to the plans prepared for the development consent application. The technical details required for a development consent are far less than that required for a construction certificate and as such, this assessment is designed to address a higher-level assessment 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, E, F, 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 design 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 to a DCD at Construction Certificate Stage as it is based on development application drawings only.

3.3 STRUCTURAL PROVISIONS – SECTION B

The new works must be designed and constructed to meet the relevant structural reliability and resistance requirements of this part. Structural requirements will need to be determined and designed by an appropriate structural engineer to ensure the building elements provide appropriate resistance to imposed actions.

3.4 FIRE RESISTANCE AND STABILITY – PART C2 & SPECIFICATION 5

The building must be constructed to achieve the minimum fire resistance levels outlined within the requirements for Type A Construction.

Subject to the required FRL's being provided, the proposed building is capable of complying with the requirements of the BCA with respect to fire resistance.

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

3.4.1 Combustibility of External Walls

The external walls and all components of the wall, in a building of Type A construction, are required to be non-combustible. The material palette outlines general materials that will meet the relevant non-combustibility requirements of BCA Clause C2D10 (non-combustible).

3.4.2 Fire Hazard Properties

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

3.5 COMPARTMENTATION AND SEPARATION – PART C3

3.5.1 Fire and Smoke separation

The building will contain different fire compartments to satisfy issues of fire resistance and smoke hazard management. These will include the following;

1. The Car parking area.
2. The combined levels of the Community Hub.
3. The Residential Aged Care facility.

No size limitations will be imposed on the Car park compartment given that it will be protected throughout by a Sprinkler System complying with AS 2118.1 and is therefore exempt from the requirements of Part C3. The Community Hub and Residential Aged Care Facility will be within the limitations for Type A construction.

Clause C3D6 outlines additional requirements for Class 9 buildings and specifies that the Residential Aged Care Facility will need to incorporate the following specific features;

4. Divided in smoke compartments of not more than 500m².
5. Internal walls to meet smoke proof construction requirements.
6. Ancillary areas such as kitchens, laundries, storage rooms etc to meet smoke proof separation requirements.

3.5.2 Spandrel Separation

The development is Type A Construction and is required to have spandrel separation between openings in an external wall. However, the building is to be protected with an AS2118.1 system, fire rated spandrel panels are not required under the provisions of BCA Clause C3D7. Should an alternative sprinkler system be provided to the building, spandrel separation will be required.

Compliance with Part C3 of the BCA can be readily achieved by the proposal.

3.6 PROTECTION OF OPENINGS – PART C4

3.6.1 Openings in external walls

The external walls are located more than three (3) metres from any boundary. As such there is no requirement to protect any openings within the external walls.

There is likely to be exposure, within the external walls, of the different fire compartments. This can be determined at later design development and openings protected where necessary in accordance with this part.

3.6.2 Bounding Construction

The walls between the Independent Living Units Sole-Occupancy-Units (SOUs) and between the corridor are internal walls that require an FRL. In addition, the walls to the lift and stairs require an FRL. As such, the doors to the sole occupancy units and fire stairs are required to be self-closing FRL --/60/30 fire doors in accordance with BCA Clause C4D12. The doors to the lift are required to have an FRL of -/60/- in accordance with BCA Clause C4D11.

3.6.3 Openings to Fire Walls

The design allows for the appropriate fire wall separation to form the required fire compartments. Openings within these walls will need to be provided with appropriate self-closing fire doors to maintain compartmentation requirements.

3.6.4 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. A such, the service installation must be fire sealed with a compliant system such as fire collar on PVC pipes or fire rated mastic on electrical cables tested in accordance with AS1530.4-2014.

Compliance with Part C4 of the BCA can be readily achieved by the proposal.

3.7 OCCUPANT ACCESS AND EGRESS – SECTION D

3.7.1 Egress from the building

Number of exits

All storeys of the building must of at least one exit or at least two as the case requires. Every occupant of a storey or part of a storey must have access to an exit or two if needed without having to pass through another sole occupancy unit area.

The Car park basement area will need to be provided with at least two exits, it is noted that four are available.

Both the Community Hub and RACF will need to maintain at least two exits on their respective storeys. Adjustments will be needed as the design develops to allow for the appropriate number of exits to these parts.

It is noted that suitable design provision is made for the exits to achieve required fire isolation. Access to the exits is available from public areas, otherwise suitable airlock arrangement could be provided. The discharge at ground level would involve the use of fire engineering assessment to address issue of occupants passing by the external walls of the building.

Travel distances

The doorways of the residential apartments may be up to 12m from an exit or point of choice and up to 30m on the ground floors. Within common areas, no point on the floor may be more than 20m to an exit or point choice to two. There are particular units that exceed 12m to an exit, these would need design adjustment or be subject to Fire Engineering Assessment.

Egress from other parts of the building shall ensure 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.

Exits are proposed to be suitably distributed around the building, and can be readily added where necessary as the design develops. Fire engineering assessment will likely be necessary for the exit locations within the basement as the distance between will exceed the maximum distance of 60m, when measured through points of choice.

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.

Suitable provision has been made for internal paths of travel and exits to achieve their required dimensions and population being served. Appropriate external paths of travel will need to be maintained to the roadways. It is noted that general provision is available and can be further developed as part of ongoing landscape design.

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

Its considered that the necessary egress provisions can be readily achieved in accordance with this part.

3.7.2 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.

3.8 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.

3.8.1 Part E1 – Fire Fighting Equipment

Fire hydrant

As the building has a floor area greater than 500m², fire hydrant protection is required. The fire hydrant system will need to be designed and installed to meet the requirements of BCA Clause E1D2 and AS 2419.1-2021.

Fire Hose Reel

The Car park and Community Hub facility will need to be provided with coverage from a fire hose reel system in accordance with BCA Clause E1D3 and AS 2441-2005.

Sprinklers

The building is required to have a sprinkler system installed as per BCA Clause E1D6 & E1D10 Specification 17/18. The sprinkler system will need to be designed and installed to meet the requirements of AS 2118.1-2017.

Portable Fire Extinguishers

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

3.8.2 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 Detection & Alarm System

The development must be provided with a smoke detection and alarm system in accordance with BCA Clauses E2D8 and E2D9 complying with Specification S20. The system will need to be designed and installed to AS 1670.1-2018.

Automatic Mechanical Shutdown

The Class 9b and 9c building/portion will likely have ducted mechanical ventilation or individual units with a capacity more than 1000 L/s, therefore automatic shutdown will be required to the ventilation system throughout the Class 9b parts in accordance with BCA Clause E2D11 and NSW E2D16.

Stair Pressurization

Where the RACF utilises the fire isolated stair way and associated passageway for egress then the exit would need to be provided with automatic air pressurisation in accordance with BCA Clause E2D4 and AS 1668.1-2015.

Automatic Smoke Exhaust

The class 9b Community Centre will have a fire compartment area of more than 2000m² and will need to be provided with an Automatic Smoke Exhaust System in accordance with BCA Clause NSW E2D19 complying with Specification 21 and AS 1668.1-2015.

3.8.3 Part E3 – Lift Installations

It is noted that passenger lifts will service the various parts of the building. Lifts are provided to the building and are located within their own shaft, serviced by a common lobbies.

The lifts that connect through Towers A, B & C require stretcher facilities as they serve a height above twelve (12) metres in *effective height* and the dimensions of the shaft are sufficient to allow compliance for a 1400 mm width x 2000 mm length lift car. Fire services controls are also required.

It is expected that all lifts will readily achieve compliance with the requirements of this part.

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

The building is required to be provided with emergency lighting and exit signs.

- + 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.

It is considered these systems will be readily provided in accordance with this part.

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

BCA Clause F4D2 requires the following facilities for a Class 9c building:

- + A closet pan;
- + Shower
- + Bath
- + Kitchen
- + Laundry facilities
- + Clinical hand washing basin.

It is considered that suitable provision is made for the required sanitary facilities to be provided in accordance with this part.

3.10 FACILITIES IN CLASS 3 TO 9 BUILDINGS – PART F4

The Community Hub and RACF will need to ensure that suitable facilities are available to service employees and other occupants of this part. Separate facilities for both male and female will be necessary with numbers and population served determined in accordance with BCA Clause F4D4.

It is noted that both centres of the Community Hub make allowance for a bank of toilets on each level. It is considered that these could be readily utilised to satisfy compliance with the requirements of Part F4.

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 Community Hub's general floor ceiling height will need to maintain a minimum clearance of at least 2.7m

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 Residential Accommodation & Class 9b Buildings

3.12.1.1 Method and extent of natural light

Class 2

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.

Class 9c

Natural light is required to all habitable rooms within a Class 9c 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. Where windows are fixed, a mechanical ventilation or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1 is required which can be readily provided.

The sills of a required window in a Class 9c aged care building must be transparent and not more than 1m above floor level.

Details of window openings will need to be assessed during design development, however it is expected that required natural lighting will be available in accordance with the requirements of this part.

3.12.1.2 Ventilation of rooms

Ventilation is required to all rooms and occupiable spaces within the building. Clause F6D6 allows for either natural ventilation as per Clause F6D7 or mechanical ventilation or air-conditioning system complying with AS1668.2 and AS/NZS3666.1.

The carpark (other than an *open-deck* carpark) is required to have a mechanical ventilation system complying with AS1668.2.

Details of methods of ventilation will need to be assessed during design development, however it is expected that required ventilation will be available in accordance with the requirements of this part.

3.13 SOUND TRANSMISSION AND INSULATION – PART F7

Both the ILU and RACF sole occupancy units are subject to sound insulation requirements of this part. It is considered that provision is available within the design for the requirements of this Part to be achieved.

3.14 CONDENSATION MANAGEMENT – PART F8

The provisions of this part are applicable to the ILUs. It is considered that provision is available within the design for the requirements of this Part to be achieved.

3.15 ENERGY EFFICIENCY - SECTION J

To be separately assessed by Energy Consultant.

4.0 *Statement of Compliance*

The plans assessed were developed to a standard suitable for submission as a development application and do not contain all the details necessary information to allow a CC to be issued. As such, this assessment was limited to the major items of the BCA with the view of identifying any items that may result in a modified development consent being required, or additional key items that need to be included in the design.

The architectural design documentation as referred to in report has been assessed against the applicable provisions of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying with that Code, subject to all matters for further consideration identified in this report being addressed in the design, and subject to compliance with all Annexures and Specifications included with this report.

Annexures

Annexure A - Design Documentation

This report has been based on the following design documentation.

Table 2: Architectural Plans

Architectural Plans Prepared by Jackson Teece		
Drawing Number	Revision	Title
DA-000	1	Cover Sheet
DA-010	1	Site Analysis
DA-011	1	Site Analysis – Local Context
DA-030	1	Site Plan
DA-109	1	Floor Plan – Basement 1
DA-110	1	Floor Plan – Ground Floor
DA-111	1	Floor Plan – Level 1
DA-112	1	Floor Plan – Level 2
DA-113	1	Floor Plan – Level 3
DA-114	1	Floor Plan – Level 4
DA-121	1	Roof Plan
DA-150	1	Parcel Floor Plan - Basement
DA-151	1	Parcel Floor Plan – Ground Floor – A&B
DA-152	1	Parcel Floor Plan – Ground Floor - C
DA-153	1	Parcel Floor Plan – Ground Floor - D
DA-154	1	Parcel Floor Plan – Level 1 – A&B
DA-155	1	Parcel Floor Plan – Level 1 - C
DA-157	1	Parcel Floor Plan – Level 2 – A&B
DA-158	1	Parcel Floor Plan – Level 2 - C
DA-160	1	Parcel Floor Plan – Level 3 – A&B
DA-161	1	Parcel Floor Plan – Level 3 - C
DA-162	1	Parcel Floor Plan – Level 4 – A&B
DA-163	1	Parcel Floor Plan – Level 4 - C
DA-164	1	Parcel Roof Plan – A&B
DA 165	1	Parcel Roof Plan - C
DA-166	1	Parcel Roof Plan - D
DA-200	1	Street Elevation - 01
DA-202	1	Elevations – Building A

DA-203	1	Elevations – Building B
DA-204	1	Elevations – Building C
DA-205	1	Elevations – Community Building
DA-300	1	Site Section
DA-301	1	Sections – Building A
DA-302	1	Sections – Building B&C
DA-303	1	Sections – Building D

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.

Table 3: Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
1.	Access Panels & doors/hoppers (fire rated)	BCA2022 C4D14 (Openings in Shafts) Spec 12 (Fire doors)
2.	Automatic fail safe devices	BCA2022 D3D26 (Operation of Latches) BCA2022 D3D27 (Re-entry from fire-isolated stairs) AS1670.1:2018 (Fire)
3.	Automatic fire detection & alarm systems	BCA2022 E2D3 (General requirements) BCA2022 E2D8 (Class 2/3)) BCA202 E2D11 (Class 9c) Spec 20 (Smoke detection and alarm systems) Spec 23 (Residential fire safety systems) AS 3786:2014 (Amdt 1-4) AS 1670.1:2018 (Fire AS 1670.3:2018 (Fire Alarm Monitoring)
4.	Automatic fire suppression systems	BCA2022 E1D4 (Sprinklers) BCA2022 E1D6 (Class 2 & 3) BCA2022 E1D9 (Class 7a) BCA2022 E1D10 (Class 9c) Spec 17 / 18 (Fire sprinkler systems) AS 2118.1:2017 (Sprinklers) AS 2118.6:2012 (Combined Sprinklers/Hydrant)
5.	Emergency lighting	BCA2022 E4D2 (Emergency lighting) AS/NZS 2293.1:2018
6.	Exit signs	BCA2022 E4D55 (Exit Signs) BCA2022 E4D6 (Direction Signs) BCA2022 E4D8 (Design and Operation - Exits) AS/NZS 2293.1:2018
7.	Fire dampers	BCA2022 C4D15 (Openings for service installations) AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
8.	Fire doors	BCA2022 C3D6 (Class 9c) BCA2022 C3D13 (Separation of Equipment)

Item	Essential Fire and Other Safety Measures	Standard of Performance
		BCA2022 C3D14 (Electricity Supply Systems) BCA2022 C4D5 (Acceptable methods of Protection) BCA2022 C4D6 (Doors in Fire Walls) BCA2022 C4D9 (Openings in Fire Isolated Exits) BCA2022 C4D11 (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 BCA2022 C4D12 (Bounding Construction) Spec 12 (Fire doors) AS1905.1: 2015
9.	Fire Hose reel systems	BCA2022 E1D3 (Fire hose reels) AS 2441:2005
10.	Fire hydrant systems	BCA2022 E1D2 (Fire hydrants) AS 2419.1:2021 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'
11.	Fire seals protecting openings in fire resisting components of the building	BCA2022 C4D15 (Openings for service installations) BCA2022 C4D16 (Construction joints) Spec 13 (Penetrations by services) AS1530.4:2014 & AS4072.1:2005
12.	Lightweight construction	BCA2022 C2D2 (Type of construction) BCA2022 C2D9 (Lightweight construction) Spec 5 (Fire-resisting construction) Spec 6 (Structural tests for lightweight construction) AS1530.4:2014
13.	Mechanical air handling systems 1. Mechanical ventilation to carpark. 2. Auto-shutdown of Air-handling System. - Any system in a Class 9c aged care and 9b building that does not operate as a smoke control system as per AS 1668.1:2015, other than: - individual room units with a capacity of not more than 1000 L/s; or	BCA2022 E2D3 (General requirements) BCA2022 E2D4 (Fire-isolated exits) BCA2022 E2D9 (<25m Class 5, 6, 7b, 8 & 9b) BCA2022 E2D11 (>25m Class 9c) BCA2022 E2D12 (Class 7a buildings) BCA2022 E2D16 (Assembly buildings) BCA2022 E2D29 (Other assembly buildings) Spec 20 (Smoke detection & alarm systems) Spec 21 (Smoke Exhaust Systems)

Item	Essential Fire and Other Safety Measures	Standard of Performance
	ii. systems serving critical treatment areas; or iii. miscellaneous exhaust are systems installed as per Section 5 and 6 of AS 1668.1:2015; 3. Automatic Smoke Exhaust System (Community Building) 4. Fire Isolated Exit Pressurisation System (Serving 9c part)	AS 1668.1:2015 (Amdt 1)
14.	Portable fire extinguishers	BCA2022 E1D14 (Portable fire extinguishers) AS 2444:2001
15.	Smoke dampers	BCA2022 C3D6 and Spec 11 BCA2022 E2, Spec 20 Spec 31 AS 1668.1:2015 (Amdt 1), AS 1682.1:2015 & AS 1682.2:2015
16.	Smoke Doors	BCA2022 C3D6 (Class 9c) BCA2022 C3D15 (Public Corridors Class 2/3) Spec 11 (Smoke proof walls) Spec 12 (Smoke doors)
17.	Warning & operational signs	BCA2022 C4D7 (Sliding Fire Doors) BCA2022 D3D28 (Signs on Fire Doors) BCA2022 D4D7 (Braille Exit Signs) (Note: E4D5 (Exit Signs)) BCA2022 E3D4 (Lift Signs)
E2D3 General Requirements 1. An air-handling system which does not form part of a smoke hazard management system in accordance with E2D4 to E2D20 and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must, subject to (2), be designed and installed— a. to operate as a smoke control system in accordance with AS 1668.1; or b. such that it— i. incorporates smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and ii. is arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1. 1. For the purposes of (1), each sole-occupancy unit in a Class 2 or 3 building is treated as a separate fire compartment.		

Item	Essential Fire and Other Safety Measures	Standard of Performance
2.	Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with these Sections of the Standard.	
3.	A smoke detection system must be installed in accordance with S20C6 to operate AS 1668.1 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated exits	
1.	Performance Solution/s Additional fire safety measures may be required as part of later fire engineering assessment.	

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

FRL (in minutes): Structural adequacy / Integrity / Insulation				
Wall Type	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

FRL (in minutes): Structural adequacy / Integrity / Insulation				
Location	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

FRL (in minutes): Structural adequacy / Integrity / Insulation				
Location	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				
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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	-	-	-	-

Annexure D - Definitions

Effective height

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

Exit

Exit means –

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.

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.

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

Architectural Design Certification

1. The FRL's of building elements for the proposed works have been designed in accordance with S5C11 of Specification 5 of BCA2022 for a building of Type A Construction.
2. Lightweight construction used to achieve 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 and B 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 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.
6. The building 9c will be separated in accordance with Clause C3D6 of BCA2022.
7. The external walls and openings of separate fire compartments will be protected in accordance with Clause C4D4.
8. The parts of different classifications located alongside one another in the same storey will be separated in accordance with Clause C3D9 and Specification 5 of BCA2022.
9. Floors separating storeys of different classifications will comply with BCA Clause C3D10 of BCA2022.
10. Equipment will be separated in accordance with Clause C3D13 of BCA2022.
11. 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.
12. 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.
13. 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.
14. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C4D6 of BCA2022.
15. Doors in a fire-isolated exit will be self-closing or automatic closing fire doors with an FRL of not less than -/60/30 in accordance with Clause C4D9 of BCA2022.
16. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C4D10 of BCA2022.

17. 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.
18. 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.
19. The lift doors will be -/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C4D11 of BCA2022.
20. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C4D12 of BCA2022.
21. 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.
22. 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.
23. The top and bottom of the riser shafts will achieve an FRL not less than the FRL required for the walls of the shaft in accordance with Clause S5C8 of Specification 5 of BCA2022.
24. Smoke-proof walls and doorways required in the health care or aged care building will be in accordance with Specification 11 of BCA2022.
25. Fire doors will comply with AS 1905.1:2015 and Specification C4D5 of BCA2022.
26. Smoke doors will be installed in accordance with Specification 12 of BCA2022.
27. Fire shutters and fire windows will be in accordance with Specification 12 of BCA2022.
28. The number of exits provided to the building will be in accordance with Clause D2D3 of BCA2022.
29. The required exits will be fire-isolated in accordance with Clause D2D4 of BCA2022.
30. Travel distances to exits will be in accordance with Clause D2D5 of BCA2022.
31. 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.
32. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D2D7 to D2D11 of BCA2022.
33. The fire-isolated exits will be in accordance with Clause D2D12 of BCA2022.
34. Smoke separation will be provided between the exit stairs at the level of discharge in accordance with Clause D2D14 of BCA2022.
35. Discharge from exits will be in accordance with Clause D2D15 of BCA2022.
36. Horizontal exits will be in accordance with Clause D2D16 of BCA2022.
37. The non-required stairways, ramps and escalators will be in accordance with Clause D2D17 of BCA2022.

38. 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.
39. Access to the lift pit will be in accordance with Clause D2D22 of BCA2022.
40. The stairway or ramp within the fire-isolated shaft is to be non-combustible, and if there is a local failure not cause structural damage or impair the fire resistance of the shaft, in accordance with Clause D3D3 of BCA2022.
41. The non-fire isolated stairs will be constructed in accordance with Clause D3D4 of BCA2022.
42. The construction separating rising and descending stairs in the fire-isolated exit stairway will be non-combustible and smoke proof, in accordance with Clause D3D5 of BCA2022.
43. The smoke lobby to the fire-isolated exit will be constructed in accordance with Clause D3D7 of BCA2022.
44. 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.
45. The enclosing walls and ceiling under the non-fire-isolated stairway will achieve an FRL of 60/60/60 and have a self-closing -/60/30 fire door, in accordance with Clause D3D9 of BCA2022.
46. New pedestrian ramps will comply with AS 1428.1:2009, Clause D3D11 and Part D4 of BCA2022. The floor surface of a ramp must have a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013.
47. The fire-isolated passageway will be in accordance with Clause D3D12 of BCA2022.
48. The roof of the building where the exit discharges will have an FRL of 120/120/120 and will not have roof lights or openings within 3m of the path of travel in accordance with Clause D3D13 of BCA2022.
49. 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.
50. 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.
51. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D3D17 to D3D21, and D3D22 of BCA2022.
52. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the machinery room, boiler house, lift-machine room, plantroom, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS 1657:2018 or Part D3 of BCA2022.
53. The doorways and doors will be in accordance with Clause D3D24 and D3D25 of BCA2022.
54. Door latching mechanisms will be in accordance with Clause D3D26 of BCA2022.
55. Re-entry doors from the fire-isolated exits will be in accordance with Clause D3D27 of BCA2022.
56. Signage will be provided on fire and smoke doors in accordance with Clause D3D28 of BCA2022.

57. 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.
58. Fire precautions whilst the building is under construction will be in accordance with Clause E1D16 of BCA2022.
59. External above ground waterproofing membranes will comply with Clause F1D5 of BCA2022 and AS 4654 Parts 1 & 2:2012.
60. The new roof covering will be in accordance with Clause F3D2 of BCA2022.
61. Any sarking proposed will be installed in accordance with Clause F3D3 of BCA2022.
62. 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.
63. Damp proofing of the proposed structure will be carried out in accordance with Clause F1D6 and F1D7 of BCA2022.
64. Floor wastes, including falls to floor wastes (including any voluntarily proposed floor wastes), will be installed in accordance with Clause F2D4 of BCA2022.
65. Sub-floor ventilation will be provided in accordance with Clause F1D8 of BCA2022.
66. 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.
67. Sanitary facilities will be provided in the building in accordance with Clause F4D2, Table F4D2, Clause F4D4 and Table F4D4 of BCA2022.
68. Ceiling heights will be in accordance with Clause F5D2 of BCA2022.
69. Natural light will be provided in accordance with Clause F6D2, F6D3, and F6D4 of BCA2022.
70. Natural or mechanical ventilation will be provided in accordance with Clause F6D6, F6D7 and F6D8 of BCA2022.
71. Water closets and urinals will be located in accordance with Clause F6D9 of BCA2022.
72. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F6D10 of BCA2022.
73. 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.
74. Every storey of the carpark will be provided with an adequate system of permanent natural or mechanical ventilation in accordance with Clause F6D11 of BCA2022.
75. 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.
76. The swimming pool associated with the new building will comply with Clause G1D2 of the BCA2022 and AS 1926 parts 1 and 2. (Note: Excludes NSW. See NSW G1D2 (2) below)
77. The refrigerated or cooling chamber, strongroom or vault will be in accordance with Clause G1D3.

- 78. The construction of the residential portions of the development will be undertaken in accordance with the relevant BASIX commitments that form part of the Development Consent approval.
- 79. 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.
- 80. Building Fabric and Thermal Construction will be in accordance with Part J4 of BCA2022.
- 81. Glazing will be in accordance with Part J4 of BCA2022.
- 82. Building sealing will be in accordance with Part J5 of BCA2022.
- 83. Facilities for Energy Monitoring will be provided in accordance with Clause J9D3 of BCA2022.

Electrical Services Design Certification:

- 84. A smoke detection and alarm system will be installed throughout the building in accordance with E2D4 to E2D13, and Specification 20 of BCA2022.
- 85. Emergency lighting will be installed throughout the development in accordance with Clause E4D2, E4D4 of BCA2022 and AS/NZS 2293.1:2018.
- 86. Exit signage will be installed in accordance with Clause E4D5, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.
- 87. Artificial lighting will be installed throughout the development in accordance Clause F6D5 of BCA2022 and AS/NZS 1680.0:2009.
- 88. Lighting power and controls will be installed in accordance with Part J7 of BCA2022.
- 89. 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:

- 90. Storm water drainage will be provided in accordance with Clause F1D3 of BCA2022 and AS/NZS 3500.3:2018
- 91. Fire hydrant system will be installed in accordance with Clause E1D2 of BCA2022 and AS 2419.1:2005 as required.
- 92. Fire hose reels will be installed in accordance with Clause E1D3 of BCA2022 and AS 2441:2005.
- 93. A sprinkler system will be installed in accordance with Clause E1D4 of BCA2022 Specification 17, Specification 18 and appropriate part(s) of FPAA101D or FPA101H.
- 94. Portable fire extinguishers will be installed in accordance with Clause E1D14 of BCA2022 and AS 2444:2001.
- 95. The heated water supply systems will be designed and installed to NCC Volume 3 – Plumbing code and Clause J8D2 of BCA2022.

Mechanical Services Design Certification:

- 96. 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.
- 97. Stair pressurisation will be installed in the building in accordance with E2D4 to E2D13 of BCA2022 and AS 1668.1:2015.

98. A smoke exhaust system will be installed in the building in accordance with E2D14 to E2D20, and Specification 22 of BCA2022.
99. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F6D6 of BCA2022 and AS 1668.2:2012.
100. 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.
101. 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.
102. Exhaust systems installed in a kitchen, bathroom, sanitary compartment, or laundry of a Class 2 or 4 sole-occupancy unit will have a minimum flow rate and discharge location in accordance with Clause F8D4 of BCA2022.
103. Where exhaust discharges directly or via shaft into a roof space of a Class 2 or 4 sole-occupancy unit, ventilation of the roof space will comply with Clause F8D5 of BCA2022.
104. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J6 of BCA2022
105. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

106. 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. Timber Construction – AS 1720.1:2010
 - i. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
107. 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.
108. The lift shaft will have an FRL in accordance with Clause C3D11 and Specification 5 of BCA2022.
109. Lightweight construction used to achieve required fire resistance levels will comply with Specification 6 of BCA2022.
110. The construction joints to the structure will be in accordance with Clause C4D16 of BCA2022 to reinstate the FRL of the element concerned.
111. Upon completion of the works, a structural engineer will be able to certify that local failure will be in accordance with Clause D3D3 of BCA2022 for the fire isolated stairs.

Lift Services Design Certification:

- 112. The lifts throughout the development will be provided with stretcher facilities in accordance with Clause E3D3 of BCA2022 and will be capable of accommodating a stretcher with a patient lying horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above the floor level.
- 113. 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.
- 114. A fire service recall control switch is to be installed on a landing at a location nominated by the appropriate authority in accordance with Clause E3D11.
- 115. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3D12.
- 116. Access and egress to the lift well landings will comply with the Deemed-to-Satisfy Provisions of D4 of the BCA2022 and will be suitable to accommodate disabled persons.
- 117. The type of lifts will also be suitable to accommodate persons with a disability in accordance with Clause E3D7 and E3D8 and will also have accessible features in accordance with E3D7 and E3D8 of BCA2022.
- 118. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3D7 and E3D8 of BCA2022.
- 119. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification 24 of BCA2022.

Acoustic Services Design Certification:

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