METIS GROUP

BCA ASSESSMENT REPORT (DA)

3 Fairlight Crescent, Fairlight NSW 2094

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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 Apartment building development at 3 Fairlight Crescent, Fairlight NSW 2094, 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.	It is recommended to reduce the fire resistance level of the storage areas (Class 7b) from four (4) hours to two (2) hours in the basement, otherwise, separation between the carpark and storage areas is required.	Specification 5, C3D9
2.	The lift doors opening inside of the SOU's require an FRL of -/60/30 and an airborne acoustic rating of Rw=30.	C4D12 and F7D6(2)
3.	The single flight fire-isolated stair connecting the basement with ground floor level discharges within the building in lieu of a road or open space or covered area which adjoins open space.	D2D12
4.	The hydrant booster is not located within the sight of the principal pedestrian entrance as required by AS2419.1-2021.	E1D2
5.	Address the below items as Special Hazards: - PV Panels on the roof - EV charging in the basement carpark - Car stacker	E1D17
6.	To permit only one exit from the basement carpark In lieu of two (2).	D2D3
7.	Extended exit travel distance in the Basement (26m in lieu of 20m)	D2D5
8.	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.	F3D4 & F3D5
Building Code of Australia compliance matters to be addressed		
1.	Windows and doors within 3m of boundaries are to be protected in accordance with C4D5.	C4D3
2.	Handrail to be provided at least on one side of the fire-isolated stair connecting the basement to the residential fire-isolated stairway:	D3D22

3.	FRNSW require hydrants to be perpendicular to the street.	E1D2
Further information required		
4.	Suitable barriers are required around the swimming pool in accordance with AS 1926.1 and AS 1926.2.	G1D2

1.0 Basis of Assessment

1.1 LOCATION AND DESCRIPTION

The building development, the subject of this report, is located at 3 Fairlight Crescent, Fairlight NSW 2094, and is a residential building.

The development includes a basement carpark including storage areas, and four (4) individual apartments on the Ground level, level 1, level 2 and level 3. The Apartment 1 on the Ground level has a swimming pool and a spa.

Figure 1 - Design provided by Metis

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 a Performance Solution Report for non-fire-safety matters; such reports are to be prepared under separate cover.

1.3 BUILDING CODE OF AUSTRALIA

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.

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

1.5 DESIGN DOCUMENTATION

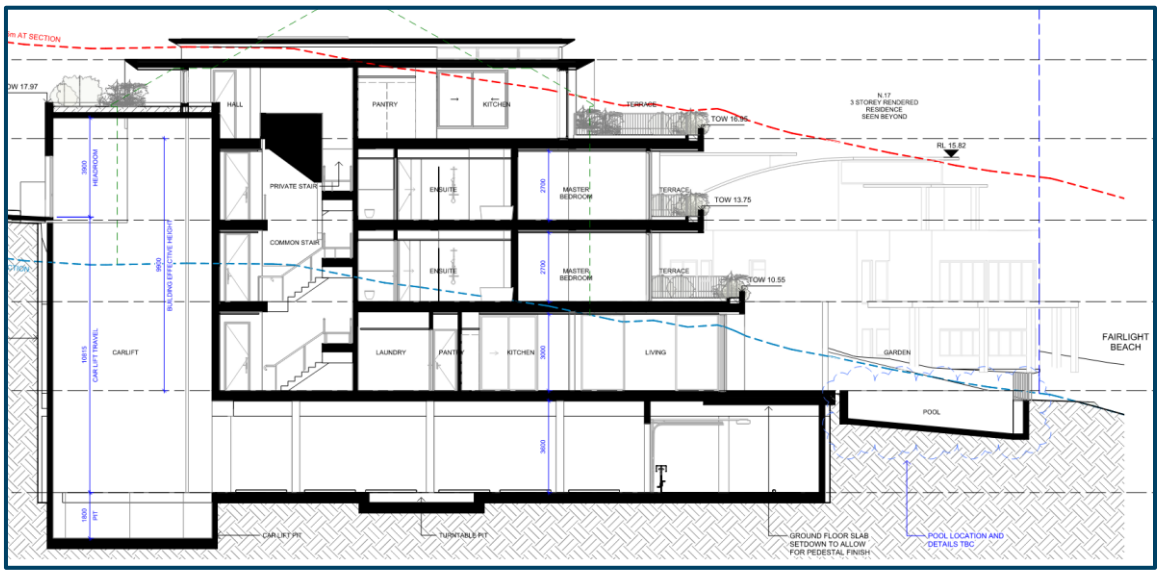
This report has been based on the Design plans and Specifications listed in Annexure A of this Report.

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 four (4) as per the below section:



2.2 CLASSIFICATION (CLAUSE A6G1)

The building has been classified as follows.

Table 1: Building Classification

Class	Level	Description
Class 7a	Basement	Carpark
Class 7b	Basement	Storage areas
Class 2	Ground Level to Level 3	Sole-occupancy Units
Class 10b	Ground Level	Swimming Pool, Spa and associated pool fencing

2.3 EFFECTIVE HEIGHT (CLAUSE A1G4)

The building has an *effective height* of less than twelve (12) metres at 9.9m (RL 6.65 – RL 16.55).

2.4 TYPE OF CONSTRUCTION REQUIRED (TABLE C2D2)

The building is required to be of Type A Construction.

2.5 FLOOR AREA AND VOLUME LIMITATIONS (TABLE C3D3)

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

Class 7b	Maximum Floor Area	5,000 m^2
	Maximum Volume	30,000 m^3
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.	

Note: If the building is provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17, there are no maximum floor area or volume limitations for this area as per BCA Clause C3D2(1).

2.6 FIRE COMPARTMENTS

The following *fire compartments* have been assumed:

1. The Basement as one fire compartment (subject to reduction of the FRL of the Class 7b portion as a fire-engineered Performance Solution).
2. Each apartment level is considered to be its own fire compartment.

2.7 EXITS

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

1. One (1) communal required fire-isolated stair and one (1) private required non-fire-isolated stair on the Basement

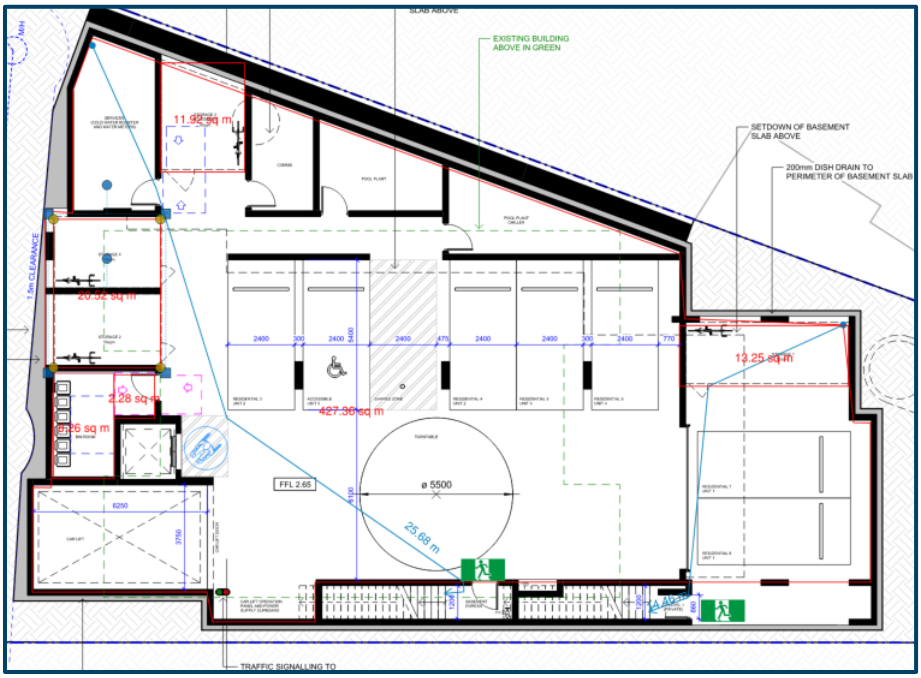


Figure 2 - Exits (Basement)

2. Required non-fire-isolated stairs from all apartments to Level 2

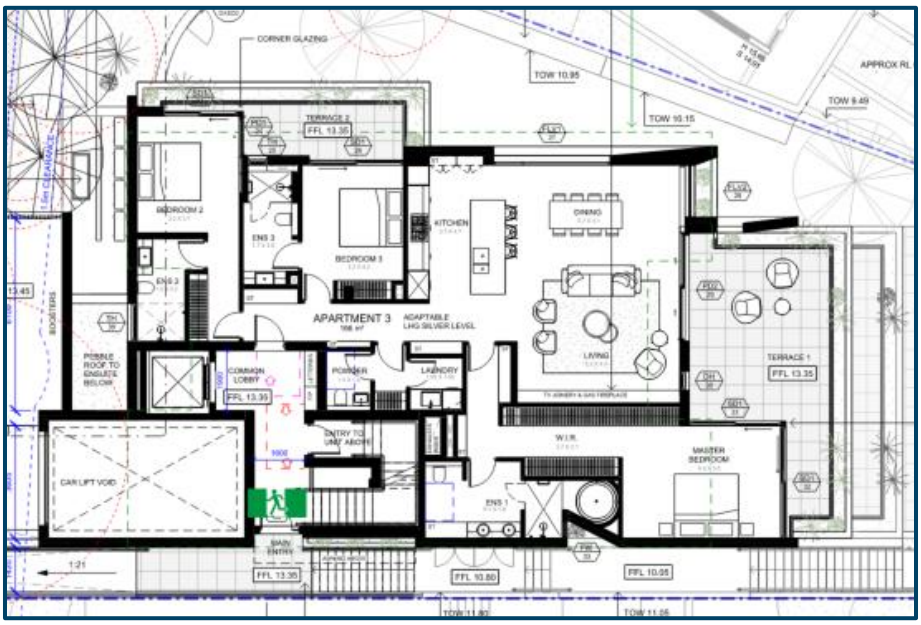


Figure 3 - Exits (GL, L1, L2, and L3)

2.8 CLIMATE ZONE

The building is located within Climate Zone 5.

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 has an importance level of two (2).

Table B1D3a of the BCA provides the following:

Importance Level	Building Types	Jensen Hughes Interpretation and Examples
1	Buildings or structures present 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 Levels 1, 3 and 4.	Residential apartment buildings and associated carparking. Office buildings
3	Buildings or Structures that are designed to contain a large number of people.	Stadia, Entertainment venues, shopping centres. Transport facilities

Importance Level	Building Types	Jensen Hughes Interpretation and Examples
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 allotment boundary of the adjacent property at 5 Fairlight Crescent (1.6m)

South: The allotment boundary of the adjacent property at 17 Lauderdale Avenue (1.7m)

East: The rear boundary to Fairlight Beach (9m)

West: The allotment boundary of the adjacent property at 1 Fairlight Crescent (2.8m)

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 (except Part D4), 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 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	Brick and Fire-cement cladding
Floors	Concrete slab
Roof	Sheet metal roof
Internal Walls (between SOU's)	Lightweight fire-rated walls
Basement walls	Concrete
Lift shafts	Masonry Block walls
Stair shafts	Masonry Block walls

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

It is recommended to reduce the fire resistance level of the storage areas (Class 7b) from four (4) hours to two (2) hours in the basement as a fire-engineered Performance Solution.

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 as per BCA Clause C2D10.

The plans indicate that the external walls are to be constructed of Steel frame with brick and fibre-cement cladding which can readily meet the non-combustibility requirements of BCA. Full details are to be provided with respect to the materials of the external wall at the Construction Certificate Stage for further assessment.

Fire Hazard Properties

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

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

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 and volume limitations.

Class 7b

The Class 7b 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 of 5,000 m^2. As such compliance with the provisions of the BCA for compartmentation is readily achieved.

Note: as per the recommendations of this report and the proposed fire safety strategy it is proposed to rationalise the FRLs to the Class 7b part to be consistent with the Class 7a FRLs of 120 minutes. This strategy will eliminate the requirement to provide a fire separating wall to the storage area.

Carpark

The whole building will be provided with an AS 2118.1-2017 sprinkler system complying with Specification 17 as per the Fire Safety Strategy provided by Core Engineering Group (F202412_FSS_01), therefore, no maximum floor area or volume limitations apply to this area. The existing floor area and volume of the carpark do not exceed the maximum size regardless to the above.

Spandrel Separation

The development is Type A Construction and is required to have spandrel separation between openings in an external wall. However, as the building will be protected with an AS2118.1 sprinkler 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.

The basement contains both Class 7a & 7b requiring fire separation under Clause C3D9 due to Class 7b exceeding 10% of the floor area. It is recommended to reduce the fire resistance level of the storage areas (Class 7b) from four (4) hours to two (2) hours in the basement as a fire-engineered Performance Solution. Subject to review and approval of the Performance Solution by the stakeholders (including the Principal

Certifying Authority (PCA) and FRNSW) at the Construction Certificate stage, no separation is required if all building elements achieve the required FRL in accordance with Specification 5.

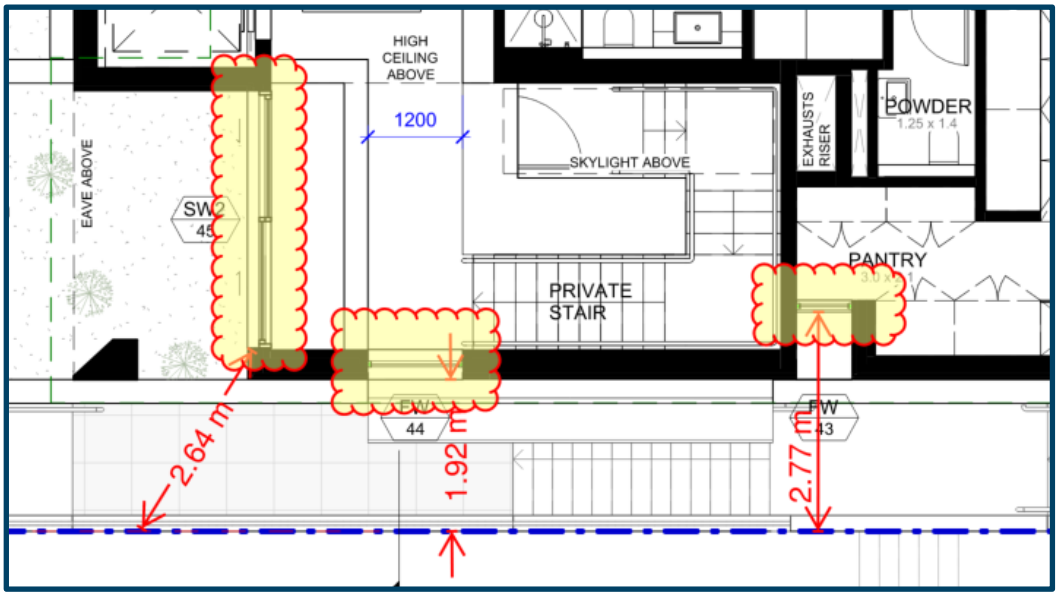
The main switchboard is not indicated in the building, only meters external at Level 1. If the switchboard is required to sustain emergency equipment in an emergency, the switchroom is to have an FRL of 120/120/120. The design of the switch room is such that compliance can be readily achieved.

3.5 PROTECTION OF OPENINGS – PART C4

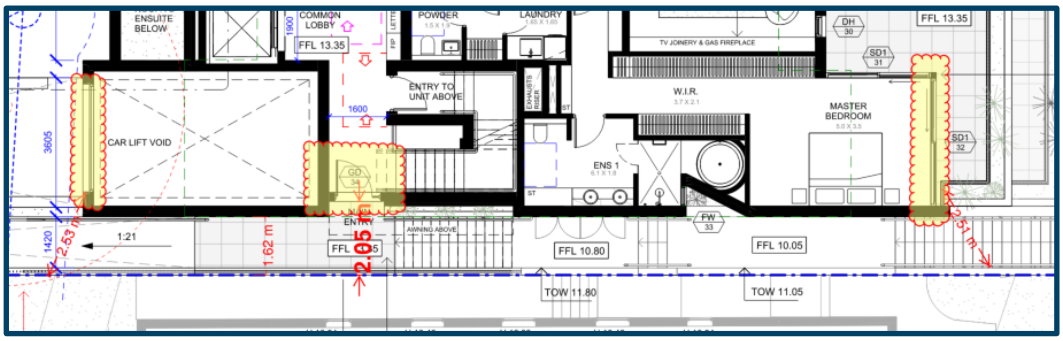
3.5.1 Openings in external walls

The openings within three (3) metres of the boundary will require protection in accordance with C4D5 as per below:

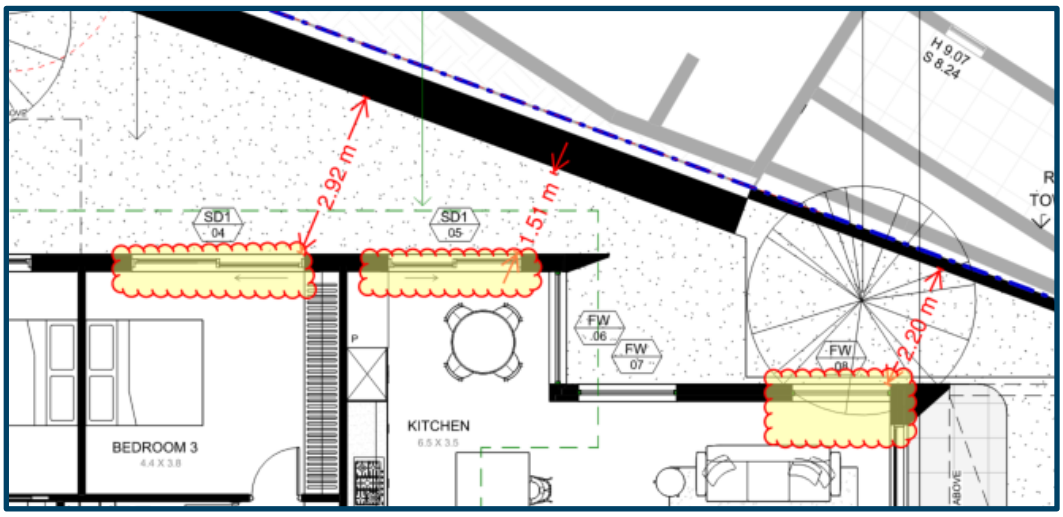
- Openings on the southern side of level 3:



- Openings on the southern side of level 2:



- Openings on the northern side of Ground level:



Details are to be provided at the Construction Certificate Stage to outline how compliance will be achieved.

3.5.2 Bounding Construction

The walls between the Sole-Occupancy-Units (SOUs) and between the SOUs and 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.

A fire-engineered Performance Solution is required to address the lift doors' fire protection (FRL of -/60/30) where opening inside of the SOU's in accordance with BCA Clause C4D11.

3.5.3 Openings to Fire Walls

The building design includes fire wall separation and will require fire doors to be provided to protect openings between the carpark compartment and the Class 2 area.

As such, the openings to fire walls are required to be FRL --/120/30 in accordance with BCA Clause C4D6, where "120" is the structural integrity rating required for the fire wall separating the differing Classifications on each side of the fire wall.

3.5.4 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. As such, the service installation must be fire sealed with a compliant system such as a fire collar on PVC pipe 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.

3.6 OCCUPANT ACCESS AND EGRESS – SECTION D

3.6.1 Egress from the building

General Requirements

A fire-engineered Performance Solution is required to permit one exit in the Basement instead of two exits as the egress from the Basement involves a vertical rise of more than 1.5m.

As the stairways connect three (3) residential storeys (Class 2) and the building will be sprinkler protected, the stairs are permitted to be non-fire-isolated in accordance with BCA Clause D2D4.

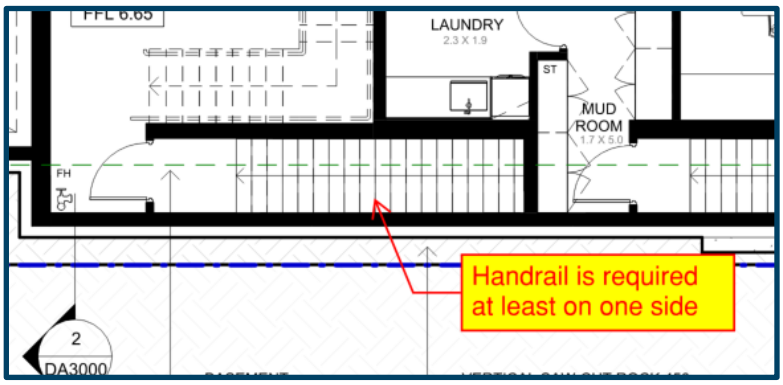
The single flight fire-isolated stair connecting the basement to the residential stair at ground floor level discharges into a covered area in lieu of a road or open space, or covered area adjoining open space and does not comply with the requirements of BCA Clause D2D12. The travel via fire-isolated exit must be addressed as fire-engineered Performance Solution as required.

The Fire Safety Strategy developed by Core Engineering Group has considered multiple additional fire safety measures to address the above non-compliances in the building including:

- AS 2118.1:2017 sprinkler system in lieu of other available sprinkler system for the residential buildings
- Fast-response sprinkler heads to facilitate suppression/control of a fire in the Basement
- Detection system within the basement
- Medium-temperature smoke seals to each door opening into the central stair to limit the potential for smoke ingress.

Considering that egress from the basement requires passing from the underground level and through a non-fire-isolated stairway, the above fire safety measures are required to be included in the Fire Engineering Report and approved by all relevant stakeholders, including the FRNSW and Principal Certifying Authority (PCA), before the Construction Certificate stage.

Handrail to be provided at least on one side of the fire-isolated stair connecting the basement to the residential fire-isolated stairway at ground floor level:



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 indicate such a pathway is provided 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. The design of these elements can be assessed at the Construction Certificate Stage.

Exit travel distance

Egress from the carpark shall ensure that no point on the floor is more than twenty (20) metres from an exit, as permitted by BCA Clause D2D5.

It will be necessary to undertake a fire-engineered Performance Solution to permit the extended travel distances to the following locations:

+ BCA Clause D2D5 – Basement Level exit travel distance of 26m to a single exit in lieu of 20m.

Exit travel distance from the residential parts of the building to the provided exits meets the requirements of the BCA.

3.6.2 Access for people with a disability

BCA Part D4 has not been assessed within this report. The accessibility requirements have been assessed as a separate report by Jensen Hughes Pty Ltd.

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 firefighting 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 in accordance with AS2419.1-2021.

The plans do not show the location of all fire hydrants and further information will be required at the Construction Certificate Stage from the Hydraulic Consultant to demonstrate compliance.

The hydrant booster is not located within the sight of the principal pedestrian entrance as required by AS2419.1-2021 and needs to be addressed as a fire-engineered Performance Solution.

Fire Hose Reel

The Class 7a & 7b portion of the building are required to have fire hose reels (FHR's) in accordance with AS 2441:2005.

The residential parts do not require FHR's.

Sprinklers

The building is required to have a sprinkler system installed as per BCA Clause E1D6. Details are to be provided at the Construction Certificate Stage by the Hydraulic Consultant to demonstrate compliance. According to the Fire Safety Strategy developed by Core Engineering Group (No. F202412_FSS_01), AS 2118.1-2017 sprinkler system in accordance with BCA Specification 17 has been specified for the whole building.

Portable Fire Extinguishers

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

Special Hazards

There are multiple items in the building that are considered as Special Hazards and need to be addressed as part of the fire-engineered Performance Solution by the fire engineer at the Construction Certificate stage. The identified Special Hazards are listed below:

- PV Panels on the roof
- EV charging in the basement carpark
- Car stacker

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 Detection & Alarm System

The development must be provided with a smoke detection and alarm system complying with Specification S20C5, except as modified by the proposed fire safety strategy. 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.

Carpark (Mechanical)

The carpark shall be provided with mechanical ventilation system complying with Clause 5.5 of AS1668.1.

3.7.3 Part E3 – Lift Installations

Lifts Serving Less than 12 Metres Effective Height

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, stretcher facility is not required in the lift. The minimum shaft dimensions must allow for a 1400mm width x 1600mm depth lift car as the lift travel more than 12m (BCA Clause E3D8). The lift car shown on the plans provides an internal car space of 1600mm x 1600mm, complying with the lift requirements.

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 are 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 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 F1.4 & AS4654.1 & 2 will be required at Construction Certificate stage.

Note: BCA 2025 (which might be applicable at the time that the Construction Certificate is issued for this project) currently requires a minimum of 70mm hob between internal and external finished floor levels as a Deemed-to-Satisfy requirement. Furthermore, structural substrates will require the fall provided within.

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 are provided within each sole occupancy unit and therefore compliance is achieved with BCA Clause F4D2.

3.10 ROOM HEIGHTS – PART F5

The section drawings indicate that the ceiling heights for all habitable spaces, corridors, and the like can achieve a 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.

3.11 LIGHT AND VENTILATION – PART F6

3.11.1.1 Method and extent of natural light

Natural light is required for 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 sufficient in size to provide the required 10% natural light to all habitable rooms.

3.11.1.2 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 a mechanical ventilation or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1.

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) is sufficient in size to provide the required 5% ventilation to all habitable rooms.

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.

3.12 SWIMMING POOL – PART G1

BCA Clause G1D2 requires suitable barriers to be installed around the swimming pool in accordance with AS 1926.1 and AS 1926.2.

The swimming pool drainage system is to be addressed as a performance solution as there is no BCA Deemed-to-Satisfy solution to achieve compliance with the Performance Requirements G1P1.

3.13 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.

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.

3.14 ENERGY EFFICIENCY - SECTION J

To be separately assessed by the 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 Platform Architects			
Drawing Number	**Revision**	**Date**	**Title**
DA1001	DA1	14/10/24	Basement Plan
DA1002	DA1	14/10/24	Ground Level Plan
DA1003	DA1	14/10/24	Level 1 Plan
DA1004	DA1	14/10/24	Level 2 Plan
DA1005	DA1	14/10/24	Level 3 Plan
DA3000	DA1	14/10/24	Sections 1 & 2
DA2001	DA1	14/10/24	Street, North West and South East Elevation
DA2002	DA1	14/10/24	South West and North East Elevation
DA4000	DA1	14/10/24	Window Schedule
DA5000	DA1	14/10/24	External 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.	Construction Joints	**BCA2022 C2D2, Specification 5** **BCA2022 C4D16** AS 1530.4:2014 & AS 4072.1:2005
2.	Fire doors	**BCA2022 C4D5** (Acceptable methods of Protection) **BCA2022 C4D6** (Doors in Fire Walls) **BCA2022 C4D11** (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 **BCA2022 C4D12** (Bounding Construction) **BCA2022 C4D14** (Opening in Shafts) Specification 12 AS1905.1: 2015
3.	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
4.	Fire windows (Where needed)	**BCA2022 C4D5** (Acceptable Methods of Protection) **BCA2022 Specification 12** identical to tested porotype. AS1905.2-2005 (Fire Resistant Roller Shutters)
5.	Lightweight construction	**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

Item	Essential Fire and Other Safety Measures	Standard of Performance
General Egress		
7.	Operation of Door latches	**D3D26** (Operation of Latch) AS 1670.1 (Amdt 1)
8.	Swing of Exit Doors	**D3D24** (Swinging Doors)
9.	Warning & operational signs	**BCA2022 D3D28** (Signs on Fire Doors) **BCA2022 D4D7** (Braille Exit Signs) (Note: E4D5 (Exit Signs))
Lifts		
10.	Access to Lift Pits Located at 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 E2D8** **BCA 2022 Specification 20** **BCA2022 S20C5** (Smoke detection system) **BCA2022 S20C7** (BOWS) AS 3786:2014 (Amdt 1-4) AS 1670.1 (Amdt 1) (Fire) – Section 4 and 5 (Detectors) Proposed Fire Engineering Report.
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 Sprinkler System
Hydraulic Services		
15.	Automatic fire suppression systems	**BCA2022 E1D6** **BCA2022 Specification 17** **BCA2022 Specification 23** AS 2118.1:2017 (Sprinklers) Proposed Fire Engineering Report.

Item	Essential Fire and Other Safety Measures	Standard of Performance
16.	Fire hydrant systems NSW Storz Couplings	**BCA2022 E1D2** AS 2419.1:2021 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections' Proposed Fire Engineering Report.
17.	Hose reel systems	**BCA2022 E1D3** AS 2441:2005
18.	Wall-wetting sprinkler / drenchers (Where needed)	**BCA2022 C4D5,** AS 2118.2: Wall-wetting sprinkler / drenchers
Mechanical Services		
19.	Fire dampers	**BCA2022 E2, Specification 20, Specification 21** **BCA2022 C4D16** AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
20.	Mechanical ventilation to carpark	**BCA2022 E2,** **Specification 20, Specification 21** AS 1668.1:2015 (Amdt 1)

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

N.B. As part of the proposed fire safety strategy and recommendations of this report it is proposed to rationalise Fire Resistance Levels to the basement storage from FRL 240 minutes down to FRL 120 minutes to be consistent with the Class 7a carpark FRLs.

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.

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.

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.

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 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 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 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.
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. 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.
11. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C4D6 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. A fire-engineered Performance Solution will be provided to permit the lift not to have doors with FRL of -/60/30 required by Clause C4D11 of BCA2022 and required acoustic rating Rw=30.
15. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C4D12 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. 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.
18. Fire doors will comply with AS 1905.1:2015 and Specification C4D5 of BCA2022.
19. The number of exits provided to the building will be in accordance with Clause D2D3 of BCA2022.
20. Travel distances to exits will be in accordance with Clause D2D5 of BCA2022.
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. Access to the lift pit will be in accordance with Clause D2D22 of BCA2022.
25. The non-fire isolated stairs will be constructed in accordance with Clause D3D4 of BCA2022.
26. 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.
27. 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.
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 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.
32. The doorways and doors will be in accordance with Clause D3D24 and D3D25 of BCA2022.
33. Door latching mechanisms will be in accordance with Clause D3D26 of BCA2022.
34. Signage will be provided on fire and smoke doors in accordance with Clause D3D28 of BCA2022.
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 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. The construction of the sanitary facilities will be in accordance with Clause F4D8 of BCA2022.
45. Ceiling heights will be in accordance with Clause F5D2 of BCA2022.
46. Natural light will be provided in accordance with Clause F6D2, F6D3, and F6D4 of BCA2022.
47. Natural or mechanical ventilation will be provided in accordance with Clause F6D6, F6D7 and F6D8 of BCA2022.
48. Water closets will be located in accordance with Clause F6D9 of BCA2022.
49. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F6D10 of BCA2022.
50. 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.
51. The carpark will be provided with an adequate system of permanent natural or mechanical ventilation in accordance with Clause F6D11 of BCA2022.
52. 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.
53. 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)
54. 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:

55. A smoke detection and alarm system will be installed throughout the building in accordance with E2D4 to E2D13, and Specification 20 of BCA2022 except as modified by proposed fire safety strategy.
56. Emergency lighting will be installed throughout the development in accordance with Clause E4D2, E4D4 of BCA2022 and AS/NZS 2293.1:2018.
57. Exit signage will be installed in accordance with Clause E4D5 and E4D8 of BCA2022 and AS/NZS 2293.1:2018.

58. Artificial lighting will be installed throughout the development in accordance Clause F6D5 of BCA2022 and AS/NZS 1680.0:2009.
59. 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:

60. Storm water drainage will be provided in accordance with Clause F1D3 of BCA2022 and AS/NZS 3500.3:2018
61. Fire hydrant system will be installed in accordance with Clause E1D2 of BCA2022 and AS 2419.1:2005 except as modified by proposed fire safety strategy.
62. A sprinkler system will be installed in accordance with Clause E1D4 and Specification 17 of the BCA2022 and appropriate part(s) of AS 2118.1, except as modified by proposed fire safety strategy.
63. Portable fire extinguishers will be installed in accordance with Clause E1D14 of BCA2022 and AS 2444:2001.

Mechanical Services Design Certification:

64. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F6D6 of BCA2022 and AS 1668.2:2012.
65. 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.
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. The lift shaft will have an FRL in accordance with Clause C3D11 and Specification 5 of BCA2022.

72. Lightweight construction used to achieve required fire resistance levels will comply with Specification 6 of BCA2022.
73. 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:

74. 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.
75. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3D7 and E3D8 of BCA2022.
76. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification 24 of BCA2022.

Acoustic Services Design Certification:

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