

C/O GARTNER TROVATO ARCHITECTS PTY LTD

BCA ASSESSMENT REPORT

21 Oaks Avenue, Dee Why NSW

Project Number: 118613

Report Type: BCA

Revision: 2

Date: 29 February 2024

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Document Control

Revision	Issue Date	Issue Description	Prepared By:	Verified by:
r1	26 February 2024	BCA Assessment Report	Shane Dealy	Warwick Hunter
r2	29 February 2024	BCA Assessment Report – Updated architectural plans	Shane Dealy	Warwick Hunter
	29 February 2024	Warwick Hunter Registered Certifier No. BDC 2417 Operations Lead, Code Consulting	Signed:	DocuSigned by:  34688FE12EE445A...

Jensen Hughes Australia

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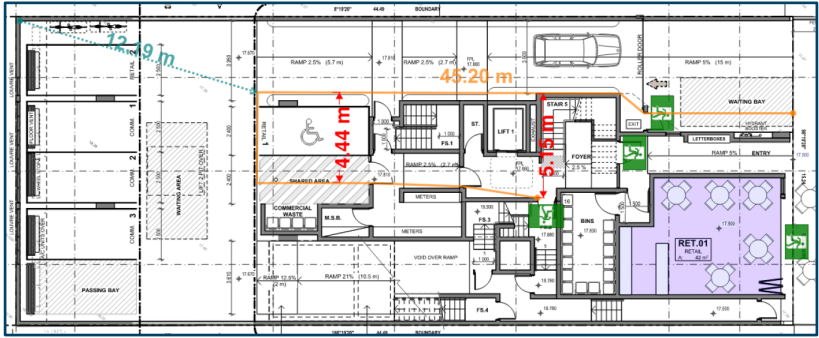
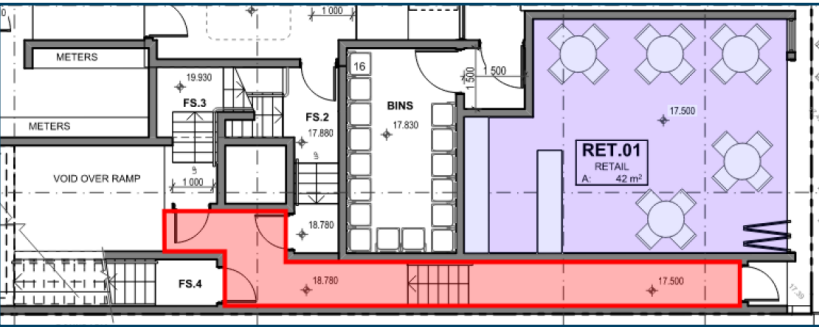
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Executive summary

This document provides an assessment of the architectural design drawings for the proposed residential development at 21 Oaks Avenue, Dee Why NSW, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2022.

Part 4 of this report outlines the identified BCA compliance issues that require further information or consideration and/or assessment as Performance Solutions.

Any Performance Solution will need to be detailed in a separate report and must clearly indicate methodologies for achieving compliance with the relevant BCA Performance Requirements.

Item	Description	BCA Provision
Fire-related Performance Solutions required		
1.	<p>Egress from carparking area on the Ground Floor relies on alternative paths of travel that less than 6 m apart. Early input from a Fire Safety Engineer is recommended to determine whether the proposed arrangement can be addressed as part of a Performance Solution.</p> 	D2D6: Distance between alternative exits
2.	<p>Early input from a Fire Safety Engineer is recommended to determine whether the following can be addressed as part of a Performance Solution:</p> <ul style="list-style-type: none"> + Fire-isolated stairways FS.2, FS.3 and FS.4 discharge into a shared fire-isolated passageway on the Ground Floor in lieu of their own fire-isolated passageways. 	D2D12: Travel via fire-isolated exits

NCC Clause Numbering

BCA2022 uses a new structure and clause referencing system to create better consistency across all volumes of the NCC. While the new Section-Part-Type-Clause system makes the NCC look different at first, it's intended to improve user experience and make it more web accessible.

The new structure results in a reorganisation of specifications and parts, some of which are contained in the table below.

The NCC uses a uniform clause numbering system across each of its three volumes. This system is called Section-Part-Type-Clause (SPTC). In each clause number-

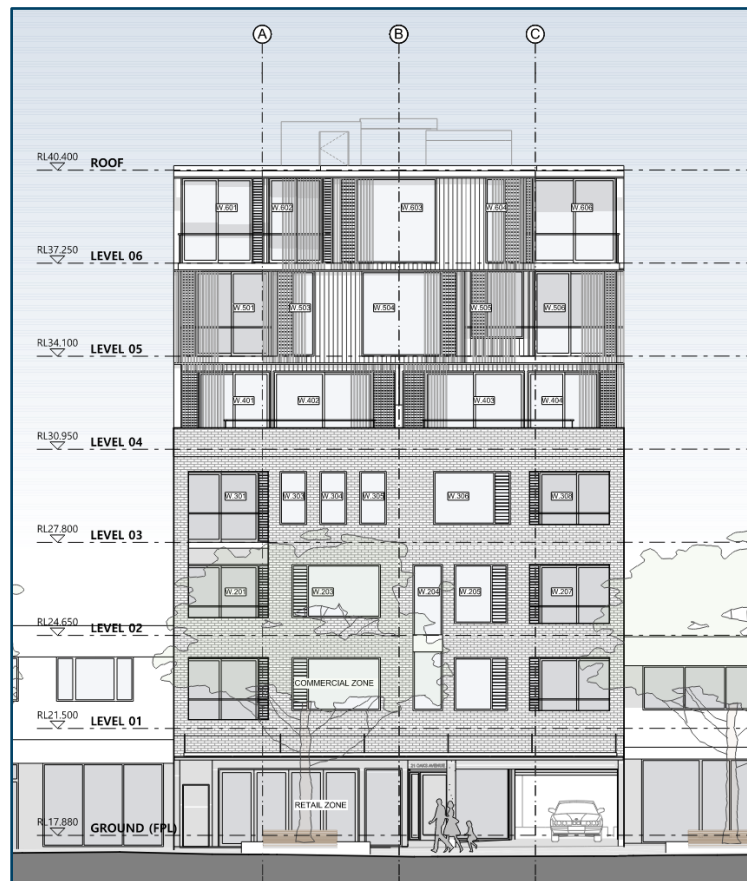
- + The first letter indicates which NCC section or part it sits within;
- + The first number indicates the number of the Part within a section or the number of a Specification.
- + The second letter indicates the clause type. It will be either G, O, F, P, V, D, or C. and these are explained below.
- + The second number is the clause number within each Part of Specification.
- + The clause Types used in the NCC are as follows:
 - + G = Governing requirements (mandatory)
 - + O = Objective (guidance)
 - + F = Functional Statement (guidance)
 - + P = Performance Requirement (mandatory) V = Verification Method (optional)
 - + D = Deemed-to-Satisfy Provision (optional)
 - + C = Clause in a Specification (can be mandatory or optional depending on how the Specification is called up by the NCC).

1.0 Basis of Assessment

1.1 LOCATION AND DESCRIPTION

The building development, the subject of this report, is located at 21 Oaks Avenue, Dee Why NSW and is comprised of the following:

- + Twenty-two (22) residential units and associated common areas.
- + One (1) retail tenancy on the Ground Floor.
- + Two (2) commercial tenancies on Level 1.
- + Three (3) levels of carparking.



Proposed development

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 BCA 2022. Such assessment against relevant performance criteria will need to be addressed by means of a separate Performance Zone Based Fire Safety Engineered Assessment Report 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. The BCA is currently updated on a three-yearly cycle.

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 disabled access to the subject development has NOT been assessed against the deemed to satisfy provision of Part D4 and F4D5 of BCA2022 only);
3. Demolition Standards not referred to by the BCA;
4. Work Health and Safety Act 2011;
5. Requirements of Australian Standards unless specifically referred to;
6. Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and

7. Conditions of Development Consent issued by the Local Consent Authority.

1.5 DESIGN DOCUMENTATION

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

2.0 Building Description

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

2.1 RISE IN STOREYS (CLAUSE C2D3)

The building has a rise in storeys of **seven (7)**.

2.2 CLASSIFICATION (CLAUSE A6G1)

The building has been classified as follows.

Table 1: Building Classification

Class	Level	Description
2	Level 01-Level 06	Residential SOUs and lobby
5	Level 01	Commercial tenancies
6	Ground Floor	Retail
7a	Basement 02-Ground Floor	Carparking
7b	Level 01	Storage

Note 1: Where a part of a building has been designed, constructed or adapted for a different purpose and is less than **10%** of the floor area of the storey it is situated on, BCA2022 Clause A6G1 provides an exemption for the classification of the other part of the storey to apply to the whole storey. This exemption cannot be applied to the following areas since the aggregate floor area of the minor uses is more than **10%** of the floor area of the storey:

- + Ground Floor, Retail Tenancy – Class 6.
- + Level 01, Storage – Class 7b.

2.3 EFFECTIVE HEIGHT (CLAUSE A1G4)

The building has an *effective height* of **19.37 m** (L06 RL 37.250-GF RL 17.880).

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 the following maximum floor area and volume limits:

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.
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Class 5	Maximum Floor Area	8000 m ²
	Maximum Volume	48000 m ³

Class 7a	The carpark is to be provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17) and as such there are no maximum floor area or volume limitations for this area.	
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2.6 FIRE COMPARTMENTS

The following *fire compartments* have been assumed:

1. Basement 02-Ground Floor – Class 7a part.
2. Ground Floor – Class 6 part.
3. Ground Floor & Level 01 - Class 5 part.
4. Level 01 - Class 2 part.
5. Level 01 – Class 7b part.
6. Level 02 – Tower 1.
7. Level 02 – Tower 2.
8. Level 03 – Tower 1.
9. Level 03 – Tower 2.
10. Level 04 – Tower 1.
11. Level 04 – Tower 2.
12. Level 05 – Tower 1.
13. Level 05 – Tower 2.
14. Level 06 – Tower 1.
15. Level 06 – Tower 2.

2.7 EXITS

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

Basement 02

1. FS.1 (non-fire-isolated stairway).
2. FS.2 (fire-isolated stairway).

Basement 01

3. FS.1 (non-fire-isolated stairway).
4. FS.2 (fire-isolated stairway).

Ground Floor

1. FS.2 (fire-isolated stairway).

2. Doorway serving the Foyer.
3. Doorway serving the Bins airlock.
4. Doorway serving the Ramp.
5. Doorway serving the Retail tenancy.

Level 01

1. FS.3 (fire-isolated stairway).
2. FS.4 (fire-isolated stairway).
3. Stair 5 (non-fire-isolated stairway).

Level 02

1. FS.3 (fire-isolated stairway).
2. FS.4 (fire-isolated stairway).

Level 03

1. FS.3 (fire-isolated stairway).
2. FS.4 (fire-isolated stairway).

Level 04

1. FS.3 (fire-isolated stairway).
2. FS.4 (fire-isolated stairway).

Level 05

1. FS.3 (fire-isolated stairway).
2. FS.4 (fire-isolated stairway).

Level 06

1. FS.3 (fire-isolated stairway).
2. FS.4 (fire-isolated stairway).

2.8 CLIMATE ZONE

The building is located within Climate Zone **5**.

2.9 LOCATION OF FIRE-SOURCE FEATURES

The fire source features for the subject development are:

North: The far boundary of Oaks Avenue

South: Allotment rear boundary

East: Allotment side boundary

West: Allotment side boundary

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 address 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).

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; and
- + Fire Safety Performance Solution/s.

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 CC stage as it is based on development application drawings only.

3.3 FIRE RESISTANCE AND STABILITY – PART C2

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

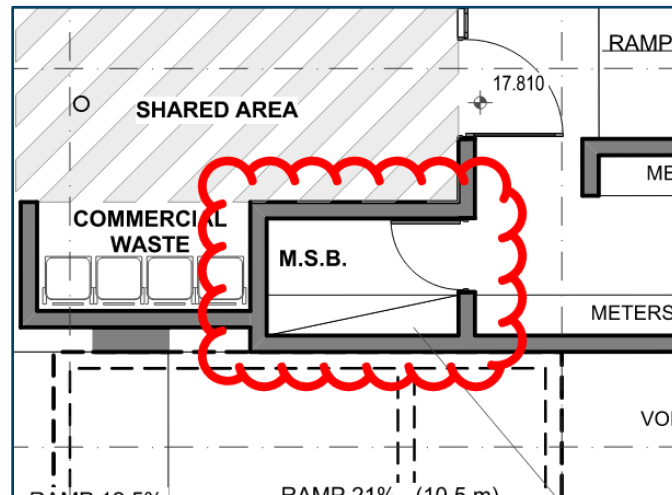
Element	Method of Construction
External Walls	<ul style="list-style-type: none"> + Reinforced concrete + Masonry veneer + Lightweight construction
Floors	<ul style="list-style-type: none"> + Basement 02 – Slab-on-ground + Basement 01-Level 06 – Suspended slabs
Roof	Suspended slab with external waterproofing membrane
Internal Walls (between SOUs)	Lightweight construction
Basement walls	Reinforced concrete

Element	Method of Construction
Lift shafts	Reinforced concrete
Stair shafts	Reinforced concrete

- + Subject to the required FRLs being provided in accordance with **Annexure C**, the proposed building is capable of complying with the requirements of the BCA2022 Specification 5 with respect to fire resistance.
- + Since the building attracts **Type A** construction—
 - external walls and their components are to comply with BCA2022 Clause C2D10; and
 - ancillary elements fixed to external walls are to comply with BCA2022 Clause C2D14.
- + Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with the above requirements.

3.4 COMPARTMENTATION AND SEPARATION – PART C3

- + The following areas are not subject to the floor area and volume limitations prescribed in BCA2022 Clause C3D3:
 - Class 2 parts.
 - Class 7a parts, noting that the carpark is proposed to be provided with a sprinkler system in accordance with BCA2022 Specification 17.
- + The Class 5, Class 6, and Class 7b portions of the building are within the floor area and volume limitations prescribed in BCA2022 Clause C3D3.
- + Spandrel protection is not required in accordance with BCA2022 Clause C3D7, noting that the building will be provided with a sprinkler system in accordance with BCA2022 Specification 17 and AS 2118.1—2017.
- + A fire compartmentation strategy is to be developed in accordance with BCA2022 Clauses C3D8, C3D9, C3D10 and S5C11.
- + Lift 1 and Lift 2 connect more than three (3) storeys and are required to be fire separated from the remainder of the building in accordance with BCA2022 Clause C3D11.
- + If the MSB on the Ground Floor is required to sustain emergency equipment operating in the emergency mode, BCA2022 Clause C3D14 requires that the main switchboard is—
 - separated from any other part of the building by construction having an FRL of not less than **120/120/120**; and
 - has any doorway in that construction protected with a self-closing **-/120/30** fire door.



Location of the MSB on the Ground Floor

- + Public corridor lengths in Class 2 parts are less than **40 m** in accordance with BCA2022 Clause C3D15.
- + Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with the above requirements.

3.5 PROTECTION OF OPENINGS – PART C4

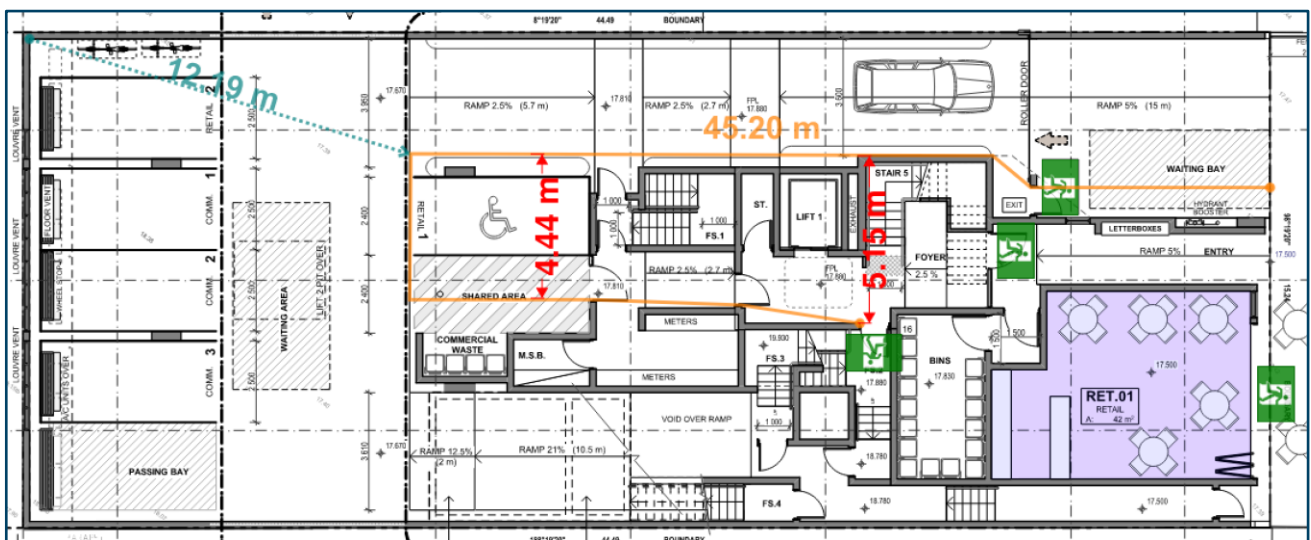
- + Opening protection is to be provided in accordance with BCA2022 Clause C4D5 and Specification 12 for—
 - openings within **3 m** of a side allotment boundary as required by BCA2022 Clause C4D3(2)(a); and
 - openings in different fire compartments as required by BCA2022 Clause C4D4.
- + BCA2022 Clause C4D6 requires that doorways located in fire walls must be a self-closing **-/120/30** fire doors.
- + BCA2022 Clause C4D9 requires that doorways opening into fire-isolated stairways must be self-closing **- /60/30** fire doors.
- + BCA2022 Clause C4D11 requires that lift doors in fire-isolated shafts are required to achieve a minimum FRL of **-/60/-**.
- + BCA2022 Clause C4D12 requires that doorways located in Class 2 bounding walls must be self-closing **- /60/30** fire doors.
- + 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 fire collar on PVC pipes or fire rated mastic on electrical cables. Compliance is readily achievable with BCA2022 Clauses C4D13, C4D14 and C4D15.
-
- + Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with the above requirements.

3.6 PROVISION FOR ESCAPE – PART D2

- + The proposed building satisfies the following requirements of BCA2022 Clause D2D3:
 - For Basement 2 and Basement 1, access is to be provided to at least two (2) exits; and

For Level 1-Level 6, access is to be provided to at least one (1) exit since the building has an effective height of less than **25 m**.

- + The following stairways are proposed to be constructed as fire-isolated stairways in accordance with BCA2022 Clause D2D4:
 - FS.2 Basement 02-Ground Floor.
 - FS.3 connecting Ground Floor-Level 06.
 - FS.4 connecting Ground Floor-Level 06.
- + The following stairway are permitted to be non-fire-isolated in accordance with BCA2022 Clause D2D4(2) since they connect not more than three (3) storeys and the building is proposed to be provided with a sprinkler protection system in accordance with BCA2022 Specification 17:
 - FS.1 connecting Basement 02-Ground Floor.
 - Stair 5 connecting Ground Floor and Level 01.
- + For Class 2 SOUs, all entrance doorways are within **12 m** from an exit in accordance with BCA2022 Clause S18C4(d).
- + For Class 2 areas not within an SOU, all points of applicable parts (e.g. Communal Open Space) are within **20 m** of an exit in accordance with BCA2022 Clause D2D5(1)(b).
- + For Class 5, Class 6, Class 7a and Class 7b parts, all points of applicable parts are within the following parameters prescribed by BCA2022 Clause D2D5(3)(a):
 - **20 m** from an exit; or
 - **20 m** from a point from which travel in different directions to two (2) exits is available, in which case the maximum distance to one of those exits must not exceed **40 m**.
- + BCA2022 Clause D2D6(d) requires that alternative paths of travel must not converge such that they become less than **6 m** apart. Egress from carparking area on the Ground Floor relies on alternative paths of travel that are less than **6 m** apart. Early input from a Fire Safety Engineer is recommended to determine whether the proposed arrangement can be addressed as part of a Performance Solution.



Convergence of alternative paths of travel on the Ground Floor

- + Sufficient aggregate egress width is provided on each storey to support the following peak occupancy loads in accordance with BCA2022 Clause D2D8.

Basement 2 (2 m) – 200 persons

Basement 1 (2 m) – 200 persons

Ground Floor (circa 5 m) – 650 persons

Level 1 (2 m) – 200 persons

- Level 2 (2 m) – 200 persons

- Level 3 (2 m) – 200 persons

- Level 4 (2 m) – 200 persons

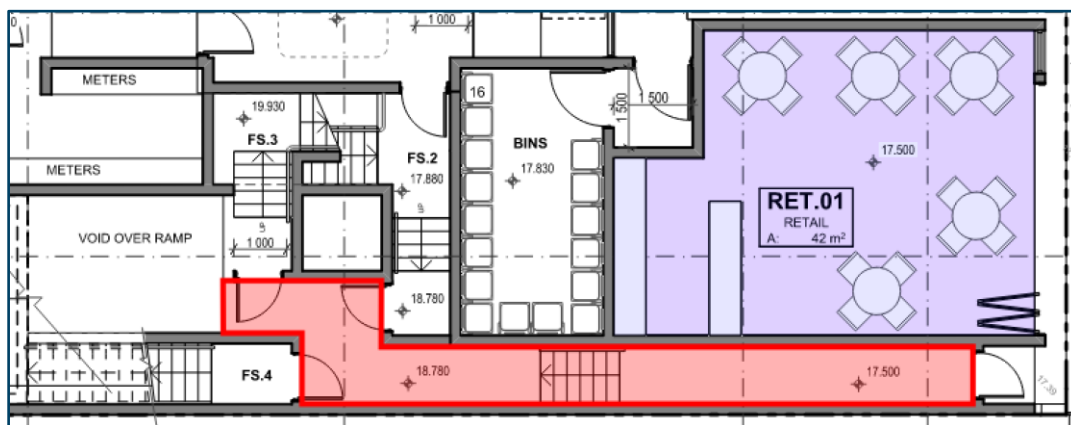
- Level 5 (2 m) – 200 persons

- Level 6 (2 m) – 200 persons.

- + The concession provided under BCA2022 Clause D2D12(1)(b) has been applied to permit fire-isolated stairway 3 to open directly into Unit 22 on Level 06.

- + Early input from a Fire Safety Engineer is recommended to determine whether the following can be addressed as part of a Performance Solution:

Fire-isolated stairways FS.2, FS.3 and FS.4 discharge into a shared fire-isolated passageway on the Ground Floor in lieu of their own fire-isolated passageways as required by BCA2022 Clause D2D12(2).



Location of Ground Floor fire-isolated passageway

The Ground Floor fire-isolated passageway is served by three (3) access doorways. BCA2022 Clause D2D12(4) requires the passageway to be separated from fire-isolated stairways FS.2, FS.3 and FS.4 via a smoke lobby or provided with an air pressurisation system in accordance with AS 1668.1—2015. It is recommended that these provisions are omitted as part of a Performance Solution.

- + For the Class 5 and Class 7a parts, non-fire-isolated stairways FS.1 and Stair 5—

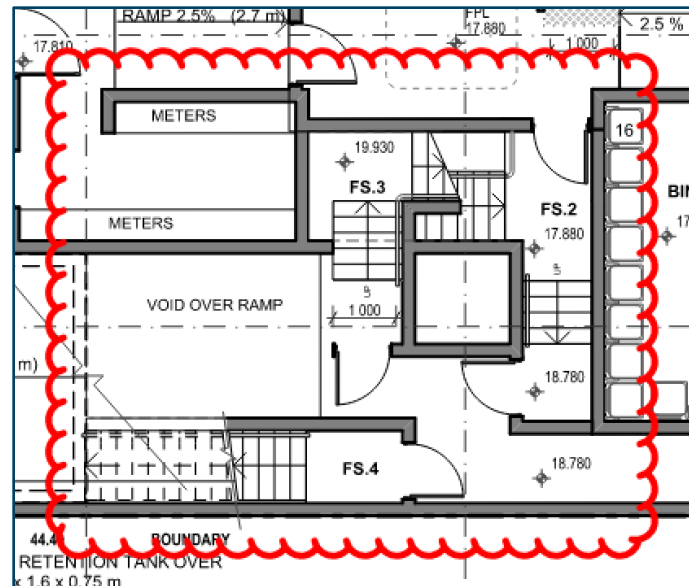
provides egress to a road or open space that does not exceed **80 m** in accordance with BCA2022 Clause D2D14(3); and

discharges at a point not more than **20 m** from a doorway providing egress to a road or open space, or from a fire-isolated passageway leading to a road or open space, or **40 m** from one of two (2)

such doorways or passageways if travel to each of them is in opposite or approximately opposite directions in accordance with BCA2022 Clause D2D14(5).

3.7 CONSTRUCTION OF EXITS – PART D3

- + Details of treads and risers, landings, thresholds, balustrades, and handrails have not been provided at this stage; however, compliance is readily achievable with BCA2022 Part D3.
- + Rising and descending flights for the below stairways are to be separated in accordance with BCA2022 Clause D3D5.



Location of rising and descending flights

- + Electrical distribution cupboards are to be provided with smoke separation to satisfy the requirements of BCA2022 Clause D3D8. The doors are to be lined internally with fire grade plasterboard or metal backing sheets and smoke seals provided to all four sides, including drop down seals on the bottom. All penetrations from the enclosure are to be suitable sealed against smoke spread by sealing with fire mastic.
- + Balcony barriers protecting a height of greater than **4 m** above the surface beneath must not incorporate climbable elements between **150-760 mm** above the floor in accordance with BCA2022 D3D20.
- + Window opening protection is to be provided in accordance with BCA2022 Clause D3D29 for Class 2 parts.
- + Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with the above requirements.

3.8 SERVICES AND EQUIPMENT- PARTS E1, E2 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. Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with Parts E1, E2 and E4.
- + The building is to be served by the following essential services:

A fire hydrant system in accordance with BCA2022 E1D2 and AS 2419.1—2021 since the building has a floor area greater than **500 m²**.

A fire hose reel system in accordance with BCA2022 Clause E1D3 and AS 2441—2005 since the Basement 2-Ground Floor Class 7a fire compartment has a floor area greater than **500 m²**.

A sprinkler system in accordance with—

- ▪ BCA2022 Clause E1D4;
- ▪ BCA2022 Clause E1D6 since the building has a rise in storeys of more than four (4) and an effective height less than **25 m**;
- ▪ BCA2022 Specifications 17 and 18; and
- ▪ AS 2118.1—2017.

An automatic fire detection and alarm system in accordance with—

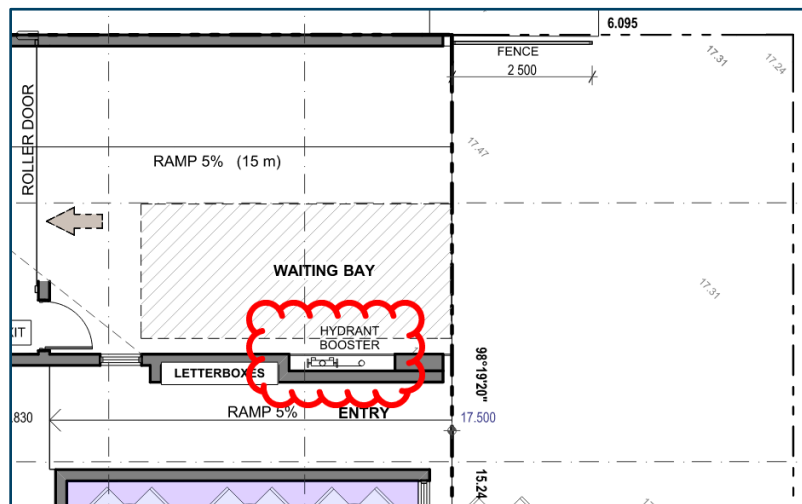
- ▪ BCA2022 Clause E2D8;
- ▪ BCA2022 Clause E2D9;
- ▪ BCA2022 Clause E2D12;
- ▪ BCA2022 Specification 20;
- ▪ AS 1670.1—2018; and
- ▪ AS 3786—2014.

If the building is served by an air-handling system/s which does not form part of a smoke hazard management system 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, the air-handling system/s must be provided with auto-shutdown capability in accordance with BCA2022 Clause E2D3, AS 1668.1—2015 and AS 1670.1—2018.

Emergency lighting in accordance with BCA2022 Clauses E4D2 and E4D4, and AS/NZS 2293.1—2018.

Exit signage in accordance with BCA2022 Clauses E4D5, NSW E4D6, E4D7 and E4D8, and AS/NZS 2293.1—2018.

- + Clause 6.11.2(c)(ii)(B) of AS 2419.1—2021 requires that an internal pumphouse shall have a door leading directly to a fire-isolated passageway or stairway that is pressurised in accordance with AS/NZS 1668.1—2015. It is recommended that the Fire Safety Engineer omits the need to provide stair pressurisation to FS.2 as part of a Performance Solution.
- + Clause 7.3.3(c) of AS 2419.1—2021 requires that the fire brigade booster assembly (FBBA) fire hydrant outlets and fire brigade booster connection inlets face the hardstand. Currently, the FBBA on the Ground Floor is perpendicular to Oaks Avenue. The Fire Safety Engineer is to address the current arrangement as part of a Performance Solution.



Location of FBBA

- + The Fire Safety Engineer is to consider the increased fire hazard associated with EVs on Basement 2-Ground Floor and is to confirm whether any enhanced fire safety measures are required in accordance with BCA2022 Clauses E1D17 and E2D21.
- + Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with the above requirements.

3.9 LIFT INSTALLATIONS – PART E3

- + Lift 1 and Lift 2 serve storeys with an effective height of more than **12 m** and is required to be able to accommodate a **600 mm** wide x **2000 mm** long x **1400 mm** high stretcher facility in accordance with BCA2022 Clause E3D3.
- + Lift details have not been provided at this stage; however, the common lift is capable of complying with the requirements of BCA2022 Part E3.

3.10 SURFACE WATER MANAGEMENT, RISING DAMP AND EXTERNAL WATERPROOFING – PART F1

- + Stormwater drainage is to be provided in accordance with BCA2022 Clause F1D3 and AS/NZS 3500.3—2021.
- + Exposed joints are to be provided in accordance with BCA2022 Clause F1D4 and AS 4654.2—2012.
- + External waterproofing membranes are to be provided in accordance with BCA2022 Clause F1D5, AS 4654.1—2012 and AS 4654.2—2012. If level transitions are proposed between internal and external areas (e.g. external balconies), grated drains are to be provided in front of the openings in accordance with Figure 2.9 of AS 4654.2—2012.
- + Damp-proofing is to be provided in accordance with BCA2022 Clause F1D6.
- + Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with the above requirements.

3.11 WET AREAS AND OVERFLOW PROTECTION – PART F2

New wet areas are capable of complying with the requirements of BCA2022 Part F2.

3.12 ROOF AND WALL CLADDING – PART F3

- + The following elements are capable of complying with BCA2022 Part F3:

- If proposed, metal sheet roofing.

- External waterproofing membranes applied to suspended slabs acting as roofs in accordance with BCA2022 Clause F1D5.

- New sarking materials used for the weatherproofing of roof and walls.

- New glazed assemblies.

- New external wall cladding.

- + Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with the above requirements.

3.13 SANITARY AND OTHER FACILITIES – PART F4

- + The following sanitary facilities are detailed within each sole-occupancy unit (SOU) in accordance with BCA2022 Clause F4D2 for a Class 2 building:

- Kitchen sink

- Bath or shower

- Closet pan

- Washbasin

- Laundry facilities.

- + The following areas are not required to be provided with dedicated sanitary facilities since they are considered ancillary to the residential use of the building:

- Basement 2-Ground Floor – Class 7a areas (e.g. carparking, waste rooms, plant rooms etc.).

- Level 2 – Common Space.

- + Sufficient sanitary facilities are provided to accommodate **30** employees and **50** patrons for the retail and commercial tenancies in accordance with BCA2022 Clause F4D4 (**n.b.** sanitary facilities are required for patrons since the retail tenancy accommodates more than **20** patrons).

3.14 ROOM HEIGHTS – PART F5

Reflected ceiling plans have not been provided at this stage; however, the subject building is capable of complying with the requirements of BCA2022 Part F5.

3.15 LIGHT AND VENTILATION – PART F6

- + For Class 2 areas on Level 1-Level 7, the following is required:

- Habitable rooms are to be provided with natural light in accordance with BCA2022 Clauses F6D3 and F6D4.

- Where natural light is not provided in non-habitable rooms in accordance with BCA2022 Clause F6D3, artificial lighting in accordance with BCA2022 Clause F6D5 and AS/NZS 1680.0—2009.

Where natural ventilation is not provided in accordance with BCA2022 Clauses F6D7 and F6D8, a mechanical ventilation system in accordance with BCA2022 Clause F6D6, AS 1668.2—2012 and AS/NZS 3666.1—2014.

Sanitary compartments that open directly into kitchens are to be provided with mechanical exhaust ventilation in accordance with BCA2022 Clause F6D10.

- + For Class 5, Class 6, Class 7a, and Class 7b areas, the following is required:
 - Artificial lighting in accordance with BCA2022 Clause F6D5 and AS/NZS 1680.0—2009.
 - A mechanical ventilation system in accordance with BCA2022 Clause F6D11 and AS 1668.2—2012.
- + Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with the above requirements.

3.16 OCCUPIABLE OUTDOOR AREAS – PART G6

The Common Open Space on Level 2 is considered as occupiable outdoor areas and is capable of complying with the requirements of BCA2022 Part G6.

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 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.

Annexures

Annexure A - Design Documentation

This report has been based on the following design documentation.

Table 2: Architectural Plans

Architectural Plans Prepared by Gartner Trovato Architects			
Drawing Number	Revision	Date	Title
A 00	A	28/02/2024	COVER SHEET
A 01	A	28/02/2024	SITE PLAN + SITE ELEVATION
A 03	A	28/02/2024	BASEMENTS 02 + 01
A 04	A	28/02/2024	GROUND FLOOR + LEVEL 01
A 05	A	28/02/2024	LEVELS 02 + 03
A 06	A	28/02/2024	LEVELS 04 + 05
A 07	A	28/02/2024	LEVELS 06 + ROOF
A 08	A	28/02/2024	SECTION A-A
A 09	A	28/02/2024	SECTION B-B
A 10	A	28/02/2024	ELEVATIONS NORTH + SOUTH
A 11	A	28/02/2024	ELEVATIONS EAST
A 12	A	28/02/2024	ELEVATIONS WEST
A 23	A	28/02/2024	COURTYARD ELEVATIONS

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.

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

Table 3: Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Access Panels & doors/hoppers (fire rated)	BCA2022 C4D14 (Openings in Shafts) BCA2022 Specification 12 AS 1905.1:2015 (Fire Resistant Doorsets)
2.	Construction Joints	BCA2022 C2D2 BCA2022 C4D16 BCA2022 Specification 5 AS 1530.4:2014 AS 4072.1:2005
3.	Fire doors	BCA2022 C3D13 (Separation of Equipment) - TBC BCA2022 C4D3 (Protection of openings in external walls) – TBC BCA2022 C4D4 (Separation of external walls and associated openings in different fire compartments) - TBC BCA2022 C4D5 (Acceptable methods of Protection) - TBC BCA2022 C4D6 (Doors in Fire Walls) BCA2022 C4D9 (Openings in Fire Isolated Exits) BCA2022 C4D11 (Opening in Fire Isolated Lift Shafts) BCA2022 C4D12 (Bounding Construction) BCA2022 Specification 12 AS1735.11:1986 AS1905.1:2015
4.	Fire seals protecting openings in fire resisting components of the building	BCA2022 C4D15 (Openings for service installations) BCA2022 C4D16 (Construction joints) BCA2022 Specification 13 AS1530.4:2014 & AS4072.1-2005

Item	Essential Fire and Other Safety Measures	Standard of Performance
5.	Fire shutters - TBC	BCA2022 C4D3 (Protection of openings in external walls) BCA2022 C4D4 (Separation of external walls and associated openings in different fire compartments) BCA2022 C4D5 (Acceptable methods of protection) BCA2022 Specification 12 AS1905.2-2005
6.	Fire windows - TBC	BCA2022 C4D3 (Protection of openings in external walls) BCA2022 C4D4 (Separation of external walls and associated openings in different fire compartments) BCA2022 C4D5 (Acceptable methods of protection) BCA2022 Specification 12 AS1905.2-2005
7.	Lightweight construction	BCA2022 C2D2 BCA2022 C2D9 BCA2022 C3D8 (Fire Walls) BCA2022 C3D9 (Separation – same storey) BCA2022 C4D12 (Bounding Construction) BCA2022 C3D13 (Separation of Equipment) - TBC BCA2022 D3D12 (Fire Isolated Passageways) BCA2022 Specification 5 BCA2022 Specification 6 AS1530.4:2014
General		
8.	Portable fire extinguishers	BCA2022 E1D14 AS 2444–2001
General Egress		
9.	Automatic fail safe devices - TBC	BCA2022 D3D26 (Operation of Latches) AS1670.1:2018 (Fire)
10.	Warning & operational signs	BCA2022 D3D28 (Signs on Fire Doors) BCA2022 D4D7 (Braille Exit Signs) BCA2022 E3D4 (Lift Signs) BCA2022 Specification 15

Item	Essential Fire and Other Safety Measures	Standard of Performance
Lifts		
11.	Stretcher Lifts, including— + Fire Service Controls; + Recall Operation; and + Drive control switch.	BCA2022 E3D3 BCA2022 E3D9 (Fire Service Controls) BCA2022 E3D11 (Fire Service Recall Operation Switch) BCA2022 E3D12 (Lift Car Fire Service drive control switch) BCA2022 Specification 24 AS 1735.11:1986 (Fire rated landing doors)
Electrical Services		
12.	Automatic fire detection & alarm	BCA2022 E2D3 - TBC BCA2022 E2D8 BCA2022 E2D9 BCA2022 E2D12 BCA2022 E2D21 BCA2022 S20C3 (Smoke alarm system) - TBC BCA2022 S20C4 (Smoke detection system) BCA2022 S20C7 (BOWS) AS 1670.1:2018 AS 3786:2014 (Amdt 1-4)
13.	Emergency lighting	BCA2022 E4D2 BCA2022 E4D4 AS/NZS 2293.1:2018
14.	Exit signs	BCA2022 E4D5 (Exit Signs) BCA2022 E4D6 (Direction Signs) BCA2022 E4D7 (Residential Concession) BCA2022 E4D8 (Design and Operation - Exits) AS/NZS 2293.1:2018
15.	System Monitoring	AS 1670.3:2018 Note 1: System monitoring is required for any sprinkler system.
Hydraulic Services		
16.	Automatic fire suppression systems	BCA2022 E1D4 BCA2022 E1D6 BCA2022 E1D17

Item	Essential Fire and Other Safety Measures	Standard of Performance
		BCA2022 Specification 17 BCA2022 Specification 18 AS 2118.1:2017 (Sprinklers) AS 2118.6:2012 (Combined Sprinklers/Hydrant) - TBC
17.	Fire hydrant systems	BCA2022 E1D2 AS 2419.1:2021
18.	Hose reel systems	BCA2022 E1D3 AS 2441:2005
19.	Wall-wetting sprinkler / drenchers - TBC	BCA2022 C4D3 (Protection of openings in external walls) BCA2022 C4D5 (Acceptable methods of protection) AS 2118.2:2021
Mechanical Services		
20.	Fire dampers - TBC	BCA2022 Part E2 BCA2022 C4D15 BCA2022 Specification 20 AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 AS 1682.2:2015
21.	Mechanical air handling systems— + Mechanical ventilation to carpark. + Auto-shutdown of air-handling system - TBC	BCA2022 E2D3 – TBC BCA2022 E2D12 AS 1668.1:2015 (Amdt 1) Note 1: <u>5.5.3 Override control</u> To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point. Note: Signage should be located at the car park entry indicating the location of the control switches.
22.	Smoke dampers - TBC	BCA2022 E2D3 BCA2022 Specification 20 Spec 31 AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 AS 1682.2:2015
E2D3 General Requirements		

Item	Essential Fire and Other Safety Measures	Standard of Performance
1.	<p>An air-handling system which does not form part of a smoke hazard management system in accordance with E2D4 or E2D20 and which recycles air from one <i>fire compartment</i> to another <i>fire compartment</i> or operates in a manner that may unduly contribute to the spread of smoke from one <i>fire compartment</i> to another <i>fire compartment</i> must, subject to (2), be designed and installed—</p> <ul style="list-style-type: none"> a. to operate as a smoke control system in accordance with AS 1668.1:2015; or b. such that it— <ul style="list-style-type: none"> i. incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and ii. be 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 (Amdt 1); and 	
2.	<p>For the purposes of this provision, each <i>sole-occupancy unit</i> in a Class 2 or 3 building is treated as a separate <i>fire compartment</i>.</p>	
3.	<p>Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1:2015 serving more than one <i>fire compartment</i> (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.</p>	
4.	<p>A smoke detection system must be installed in accordance with S20C6 to operate AS 1668.1:2015 systems that are provided for zone smoke control and automatic air pressurisation for fire-isolated exits.</p>	

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	Class 5	Class 6	Class 7b
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	Class 5	Class 6	Class 7b
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	Class 5	Class 6	Class 7b
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	Class 5	Class 6	Class 7b
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	Class 5	Class 6	Class 7b
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	Class 5	Class 6	Class 7b
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 the discharge of hot products of combustion	-/90/90	-/90/90	-/120/120	-/120/120

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	Class 5	Class 6	Class 7b
Other loadbearing internal walls, internal beams, trusses and columns	90/-/-	120/-/-	180/-/-	240/-/-
Floors	90/90/90	120/120/120	180/180/180	240/240/240
Roofs	90/60/30	120/60/30	180/60/30	240/90/60

Note 1: There are FRL concessions applicable for fully sprinkler protected carpark portions under Clause S5C19 of BCA2022 Vol 1, reducing the carpark FRLs down from **120/120/120** to **60/60/60**.

Note 2: The Basement 02 slab-on-ground is not required to achieve an FRL in accordance with Clause S5C12 of the BCA2022 Vol 1.

Note 3: A roof superimposed on a concrete slab roof is not required to achieve an FRL in accordance with BCA2022 Clause S5C14 if—

- the superimposed roof and any construction between it and the concrete slab roof are non-combustible throughout; and
- the concrete slab roof complies with BCA2022 Table S5C11g.

Note 4: BCA2022 Clause S18C4(1) provides the following FRL concessions for Class 2 portions:

- The FRL all other non-loadbearing internal walls, as required by BCA2022 Specification 5, may be reduced to **-/45/45** and the FRL for service penetrations through non-loadbearing internal walls and shafts, as required by BCA2022 Clause C4D15, may be reduced to **-/45/15**.

The FRL for fire-isolated stairways enclosed with non-loadbearing construction, as required by BCA2022 Clause D2D4, may be reduced to **-/45/45**.

Annexure D - Definitions

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m²) 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

Occupiable outdoor area

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

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

Open space

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

Performance Requirement

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

Performance Solution

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

Sarking-type material

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

Smoke developed index

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

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 FRLs 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 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. The 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. 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.
13. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C4D10 of BCA2022.
14. 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.
15. 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.
16. The lift doors will be --/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C4D11 of BCA2022.

17. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C4D12 of BCA2022.
18. 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.
19. 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.
20. 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.
21. Fire doors will comply with AS 1905.1:2015 and Specification C4D5 of BCA2022.
22. Fire shutters and fire windows will be in accordance with Specification 12 of BCA2022.
23. The number of exits provided to the building will be in accordance with Clause D2D3 of BCA2022.
24. The required exits will be fire-isolated in accordance with Clause D2D4 of BCA2022.
25. Travel distances to exits will be in accordance with Clause D2D5 of BCA2022.
26. The alternative exits will be distributed uniformly around the storey and will not be less than 9m apart, and not more than 45m apart in the residential portion or patient care areas in the health-care building or 60m, in accordance with Clause D2D6 of BCA2022.
27. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D2D7 to D2D11 of BCA2022.
28. The fire-isolated exits will be in accordance with Clause D2D12 of BCA2022.
29. Discharge from exits will be in accordance with Clause D2D15 of BCA2022.
30. 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.
31. Access to the lift pit will be in accordance with Clause D2D22 of BCA2022.
32. 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.
33. The non-fire isolated stairs will be constructed in accordance with Clause D3D4 of BCA2022.
34. 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.
35. The construction of EDBs 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.
36. 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.
37. The fire-isolated passageway will be in accordance with Clause D3D12 of BCA2022.

38. 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.
39. 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.
40. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D3D17 to D3D21, and D3D22 of BCA2022.
41. 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, plant-room, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS 1657:2013 or Part D3 of BCA2022.
42. The doorways and doors will be in accordance with Clause D3D24 and D3D25 of BCA2022.
43. Door latching mechanisms will be in accordance with Clause D3D26 of BCA2022.
44. Signage will be provided on fire and smoke doors in accordance with Clause D3D28 of BCA2022.
45. The openable portion of a window in a 9b early childhood centre or a bedroom of a Class 2, 3, 4 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.
46. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1D16 of BCA2022.
47. Additional provisions will be made in accordance with Clause E1D17 of BCA2022, due to the special hazards associated with the building works or the location of the building works.
48. External above ground waterproofing membranes will comply with Clause F1D5 of BCA2022 and AS 4654 Parts 1 & 2:2012.
49. The new roof covering will be in accordance with Clause F3D2 of BCA2022.
50. Any sarking proposed will be installed in accordance with Clause F3D3 of BCA2022.
51. 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.
52. Damp proofing of the proposed structure will be carried out in accordance with Clause F1D6 and F1D7 of BCA2022.
53. Floor wastes will be installed to bathrooms and laundries above sole occupancy units or public space in accordance with Clause F2D4 of BCA2022.
54. 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.
55. Sanitary facilities will be provided in the building in accordance with Clause F4D2, Table F4D2, Clause F4D4 and Table F4D4 of BCA2022.
56. The construction of the sanitary facilities will be in accordance with Clause F4D8 of BCA2022.

57. Ceiling heights to the new areas will be in accordance with Clause F5D2 of BCA2022.
58. Natural light will be provided in accordance with Clause F6D2, F6D3, and F6D4 of BCA2022.
59. Natural ventilation will be provided in accordance with Clause F6D6, F6D7 and F6D8 of BCA2022.
60. Water closets and urinals will be located in accordance with Clause F6D9 of BCA2022.
61. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F6D10 of BCA2022.
62. 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.
63. 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.
64. 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.
65. 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.
66. Building Fabric and Thermal Construction will be in accordance with Part J4 of BCA2022.
67. Glazing will be in accordance with Part J4 of BCA2022.
68. Building sealing will be in accordance with Part J5 of BCA2022.
69. Facilities for Energy Monitoring will be provided in accordance with Clause J9D3 of BCA2022.

Electrical Services Design Certification:

70. A smoke detection and alarm system will be installed throughout the building in accordance with E2D4 to E2D13, and Specification 20 of BCA2022.
71. Emergency lighting will be installed throughout the development in accordance with Clause E4D2, E4D4 of BCA2022 and AS/NZS 2293.1:2018.
72. Exit signage will be installed in accordance with Clause E4D5, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.
73. Artificial lighting will be installed throughout the development in accordance Clause F6D5 of BCA2022 and AS/NZS 1680.0:2009.
74. Lighting power and controls will be installed in accordance with Part J7 of BCA2022.
75. 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:

76. Storm water drainage will be provided in accordance with Clause F1D3 of BCA2022 and AS/NZS 3500.3:2018
77. Fire hydrant system will be installed in accordance with Clause E1D2 of BCA2022 and AS 2419.1:2005 as required.
78. Fire hose reels will be installed in accordance with Clause E1D3 of BCA2022 and AS 2441:2005.

79. A sprinkler system will be installed in accordance with Clause E1D4 of BCA2022 Specification 17 and appropriate part(s) of AS 2118.
80. Portable fire extinguishers will be installed in accordance with Clause E1D14 of BCA2022 and AS 2444:2001.
81. 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:

82. 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.
83. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F6D6 of BCA2022 and AS 1668.2:2012.
84. 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.
85. 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.
86. 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.
87. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J6 of BCA2022
88. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

89. 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
90. Earthquake actions – AS 1170.4:2007
91. Masonry – AS 3700:2018
92. Concrete Construction – AS 3600:2018
93. Steel Construction AS 4100:1998
94. Aluminium Construction – AS/NZS 1664.1 or 2:1997
95. Timber Construction – AS 1720.1:2010
96. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
97. The FRLs 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.
98. The lift shaft will have an FRL in accordance with Clause C3D11 and Specification 5 of BCA2022.

99. Lightweight construction used to achieve required fire resistance levels will comply with Specification 6 of BCA2022.
100. The construction joints to the structure will be in accordance with Clause C4D16 of BCA2022 to reinstate the FRL of the element concerned.
101. The concrete panel external walls will be in accordance with Specification 5 of BCA2022.
102. 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:

103. 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.
104. 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.
105. 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.
106. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3D12.
107. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3D7 and E3D8 of BCA2022.
108. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification 24 of BCA2022.

Acoustic Services Design Certification:

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

NSW Specification Design Certificate:

110. Materials, floor and wall linings/coverings, surface finished and air-handling ductwork used in the works will comply with the fire hazard properties in accordance with Clause C2D11, NSW Clause C2D11, Specification 5 and NSW Specification 5 of BCA2022.
111. Doorways and other openings in internal walls required to have an FRL will be protected in accordance with Clause C4D12, and NSW Clause C4D12(4) of BCA2022.
112. The number of exits provided to the building will be in accordance with Clause D2D3 and NSW Clause D2D3(4) of BCA2022.
113. The discharge points of exits will be in accordance with Clause D2D15, and NSW Clause D2D15(6) of BCA2022.
114. The width of doorways in exits and paths of travel to exits will be provided in accordance with Clause D2D96, and NSW Clause D2D9(a) to (g) of the BCA2022.
115. Stair geometry to the new stairways will be in accordance with Clause D3D14, and NSW Clause D3D14(1) of the BCA. Stair treads are to have a surface with a slip-resistance classification complying with Table D3D154 when tested in accordance with AS 4586:2013 or a nosing strip with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013.

116. Landings and door thresholds throughout the development will be provided in accordance with Clause D3D15 and D3D16.15, and NSW Clause D3D16(a) to (e) of the BCA. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 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 leads to a flight below.
117. The height of barriers is to be in accordance with D3D18 and NSW D3D18(1) of the BCA2022.
118. The doorways and doors will be in accordance with Clause D3D24, NSW Clause D23D24(2) of the BCA2022.
119. The door latching mechanisms to the proposed required exit doors will be in accordance with Clause D3D26 and NSW Clause D3D26(5) and (6) of the BCA2022.
120. Insulation will be in accordance with AS/NZS 4859.1:2018 and will be installed as required by NSW Part J4 of the BCA.
121. A smoke detection and alarm systems will be installed throughout the building in accordance with E2D10, NSW E2D10 and NSW Specification 20 of BCA2022.
122. Exit signage will be installed in accordance with Clause E4D5, NSW Clause E4D6, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.
123. The building will be mechanically ventilated in accordance with Clause F6D6, NSW F6D6 of BCA2022 and AS 1668.2:2012.