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MANDARIN DEVELOPMENTS PTY LTD

BCA ASSESSMENT REPORT

61A-65 Albert Avenue, Chatswood

Project number: 251547
Revision: BCA 1.0
Date: 17 December 2025

JENSEN HUGHES

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Quality management

Revision	Date	Revision description	
BCA 1.0	17 December 2025	Building Assessment Report – State Significant Development Application	
		Prepared by	**Reviewed by**
		Christian Calderan Building Code Consultant	Harley Parkes Operations Lead, Code, Pacific BSP 2572
		Signed:	DocuSigned by: Harley Parkes 03ACFA61101B486...

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Executive summary

This document provides an assessment of the architectural design drawings for the proposed mixed residential and commercial development at 61A-65 Albert Avenue, Chatswood, against the Deemed-to-Satisfy Provisions of the Building Code of Australia (BCA) 2022 Amendment 2 Volume One.

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 Engineered Performance Solutions Required – Per NDY's Fire Safety Engineering Letter		
1.	**Reduced FRLs** To reduce the FRLs within the following locations to 120-minutes: + Ground Floor – Level Two retail spaces from 180-minutes. + Level One bin rooms from 240-minutes.	BCA Clause C2D2, Specification 5, Clause 3.
2.	**Cavity Barriers** Where the slabs and the bounding construction between the SOUs intersect with the external wall, it is proposed to maintain the intended fire separation between floor levels.	BCA Clause C2D2, C3D10, C4D16 & Specification 5, Clause 11.
3.	**Compartmentation** To permit the Class 6 fire compartment of Ground Floor – Level Two to exceed 5,000m^2.	BCA Clause C3D3
4.	**Separation of Classifications** To permit the glazing within the Class 2 and 6 lobbies as separation between classifications.	BCA Clause C3D9
5.	**Public Corridor Lengths** To permit the Class 2 corridor lengths within the building the building to be greater than forty (40) metres *Note: The smoke door is also required to swing in the direction of egress in accordance with BCA Clause D3D25.* *Due to the location of the exits being on opposite ends of the residential corridor, the smoke door would be required to swing in both directions to comply with BCA Clause D3D25. However, this poses a smoke leakage issue with the smoke door.* *Therefore, a Fire Engineered Performance Solution is required to address either the smoke door not swinging in the direction of egress or where the smoke door has a smoke leakage issue due to the bidirectional swing.*	BCA Clause C3D15
6.	**Enclosure of Shafts** To permit the residential chute discharge room to not be enclosed at the bottom of the shaft	BCA Specification 5, Clause 8
7.	**Number of Exits**	BCA Clause D2D3

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Item	Description	BCA Provision
	To permit a single exit in lieu of two (2) due to the building being over twenty-five (25) metres within the following locations: + Retail waste room – Level 01 + BOH– Level 01 Mezzanine + Plantroom – Level 31 + Domestic Hot Water Plant – Level 28 + To permit occupants within the BOH corridor on Level 03 to pass through an SOU to get to an *exit.*	
8.	**Extended Travel Distances - Basement** To permit the following travel distances issues within the basement: **Basement 1:** + 27 metres to a single exit in lieu of 20 metres + 30 metres to a Point of Choice in lieu of 20 metres + 62 metres between exits in lieu of 60 metres. **Basements 02-06:** + 27 metres to a single exit in lieu of 20 metres + 35 metres to a Point of Choice in lieu of 20 metres + 65 metres between exits in lieu of 60 metres + 5.5 metres between alternative exits (Stairs 1 & 2) in lieu of 6 metres	BCA Clause D2D5 & D2D6
9.	**Extended Travel Distances – Commercial Levels** To permit the following extended travel distances within the following locations: **Ground Floor:** + Mini Major - 65 metres between alternative exits in lieu of 60 metres **Level 01:** + 32 metres to a Point of Choice in lieu of 20 metres + 43 metres to an exit in lieu of 40 metres + To rely upon the existing bridge connection that does not discharge to the *road* or *open space* as an *exit.* **Level 02:** + 33 metres to a Point of Choice in lieu of 20 metres + 51 metres to an exit in lieu of 40 metres + 70 metres between alternative exits in lieu of 60 metres **Level 03:** + 40 metres to a Point of Choice in lieu of 20 metres + 60 metres to an exit in lieu of 40 metres + 70 metres between alternative exits in lieu of 60 metres	BCA Clause D2D5 & D2D6
10.	**Extended Travel Distances - Residential** To permit the following travel distance issues within the residential portion of the building:	BCA Clause D2D5 & D2D6

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Item	Description	BCA Provision
	+ Level 4: 30 metres to a point of choice in lieu of 20 metres + Level 4: 60 metres to an exit in lieu of 40 metres + Level 4: 80 metres between alternative exits in lieu of 60 metres + Level 30: 5.5 metres between alternative exits, in lieu of 6 metres.	
11.	**Discharge of Fire-Isolated Stairs** To permit the internal discharge of the internal fire-isolated stair of Stair 1.	BCA Clause D2D12
12.	**Connection Between Rising & Descending Flights** To permit the connection of rising and descending flights within the fire-isolated stairs: + Stair 01 + Stair 02 + Stair 03	BCA Clause D3D5
13.	**Fire Hydrant Booster** To permit the Fire Hydrant Booster to not be located within the main entrance of the building.	BCA Clause E1D2
14.	**Fire Hydrant Coverage** To permit the extended hydrant coverage to SOUs on Level 26.	BCA Clause E1D2
15.	**Deletion of FHR Coverage** To delete the FHR coverage within the following locations: + MSB Room + Residential Chute Discharge Room + Any rooms with a fire-isolated door	BCA Clause E1D3
16.	**Deletion of Sprinklers** To delete the sprinklers within the following locations: + MSB Room + Substation	BCA Clause E1D4
17.	**Fire Control Centre** To permit the Fire Control Centre to be: + More than 300 mm above the *road*. + To not have access from the main entrance of the building.	BCA Clause E1D15, Specification 19
18.	**Emergency Lifts** + To delete the requirement of emergency lifts that do not serve a *storey* more than twenty-five (25) metres in effective height. + To permit one (1) emergency lift to serve the most upper floor, as lifts 3 & 4 do not serve levels 29 & 30	BCA Clause E3D5

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Item	Description	BCA Provision
19.	**Atrium Construction** To construct an atrium that does not meet the provisions of Part G3	Part G3
Non-Fire Engineered Performance Solutions required		
20.	**Façade Engineer** A Performance Solution will be required to demonstrate that the construction of the new external walls (other than glazing, masonry, autoclaved aerated concrete, and metal wall cladding for which Deemed-to-Satisfy Provisions are provided) is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements. *Note: departures (if any) are to be confirmed by the Façade Engineer*	BCA Clauses F3D4 & F3D5
Building Code of Australia compliance matters to be addressed		
21.	**Fire-rated enclosure to fire stairs** The fire stairs for Stair 03 are not enclosed in a fire-rated shaft for levels 26-29	BCA Clause C2D2 & Specification 5.
22.	**Paths of Travel to an exit** *Paths of travel* to an *exit* must have an egress width of no less than 1000 mm. + *Remove the MB retail staff space in front of the retail stage.* + *Ensure no doors to enter a lobby are located behind car spaces*	BCA Clause D2D8 & D2D15
23.	**Going & Risers** The goings and risers within the two (2) storey SOUs between levels 26-27 that have spiral staircases do not comply.	BCA Clause D3D14
24.	**Swinging Doors** + The swinging doors of the substation must not encroach more than 100 mm into the *required exit* when fully open. + All doors opening into the stair 2 fire-isolated passageway encroach more than 1000 mm. + The stair 01 to stair 02 door encroaches more than 100 mm on the *required exit* when fully open. *Swing doors in the opposite direction.*	BCA Clause D3D25
25.	**Fire Hydrant Pump Room** The fire hydrant pump room must be connected via the fire-isolated stairway or passageway. *A redesign is required.*	BCA Clause E1D2
26.	**Services within the Fire Control Centre**	Specification 19, Clause 3

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Item	Description	BCA Provision
	Any services not permitted under this Clause are not permitted inside the FCC.	
27.	**Sanitary Facilities** Provide the toilet numbers to the commercial levels within the building to undertake an assessment of the sanitary facilities. *Where a Performance Solution is undertaken to allow additional occupants than egress width permits, then the required facilities is to account for the maximum number of occupants permitted under Fire Engineering.*	BCA Clause F4D4
28.	**Natural Light** There are study nooks located within the Class 2 apartments that do not achieve 10% natural light, as they are considered *habitable rooms*.	BCA Clause F6D2
Further information required		
29.	**General Barrier Details** Barrier details are to be provided for further assessment and review.	BCA Clauses D3D17-D3D20
30.	**Additional Fire Engineered Performance Solutions** Discuss with all relevant services for any additional Fire Engineered Performance Solutions that might be required for the building.	Part E
31.	**Confirmation of home office nooks** Confirmation is required with the Project Certifier to determine whether the proposed home office nooks require natural light.	BCA Clause F6D2

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1.0 Basis of assessment

1.1 Location and description

This BCA Assessment Report has been prepared by Jensen Hughes to accompany a concurrent Rezoning Request and State Significant Development Application (SSDA) for a mixed-use development at 61A-65 Albert Avenue, Chatswood. The site is legally described as Lot 2 DP 1035379. This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARS) issued for the project (SSD-85024458) on 23 June 2025.

Introduction

The State Significant Development Application (SSDA) seeks consent for demolition of the existing buildings on site, augmentation of site infrastructure, site landscaping and construction of a part 28 and part 32-storey residential tower, above a 4-storey retail podium. The SSDA is accompanied by a concurrent rezoning request which seeks to amend the Willoughby Local Environmental Plan (WLEP 2012) to avail the proposed development outcome. Specifically, the rezoning request seeks to:

+ Amend the Height of Building Map reference in clause 4.3 of the WLEP to specify a maximum building height of RL 192m and RL 205m.
+ Amend the Floor Space Ratio map referenced in clause 4.4 of the WLEP to remove the floor space ratio control, as is consistent with other sites in the Chatswood CBD
+ Amend the Affordable Housing Map referenced in clause 6.8 of the WLEP to specify an affordable housing contribution of 5%.
+ Amend clause 6.24 61A Albert Avenue, Chatswood to:
  - Remove the minimum non-residential floor space ratio restriction that applies to the land.

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- Remove the prohibition of serviced apartments. This is now a redundant subclause as serviced apartments are a prohibited use throughout the E2 Commercial Centre zone.
- Include a notation that permits strata subdivision of land on the site despite clause 4.1A.
- Include a new subclause that states development for the purpose of advertising structure is permissible on the land with development consent.
- Insert a new subclause within clause 6.24, that states despite clause 6.15(2) Sun Access of the WLEP, development consent may be granted to development on the land that results in minor additional overshadowing between 11am – 12:15pm within Area 2 of the Chatswood Oval.

State significant development consent for the proposed development, including:

+ Demolition of the existing building known as the Mandarin Centre.
+ Construction of a part 28-storey and part 32-storey mixed-use tower, including the following elements:
  - Six (6) levels of basement parking, with vehicular access off Victor Street and service access off Orchard Road
  - Four (4) storey retail podium
  - The eastern tower will include 27 levels of residential dwellings and one (1) level of plant.
  - The western tower will include 24 levels of residential dwellings and one (1) level of plant
  - Augmentation of infrastructure and services.
  - Site landscaping; and
  - Public domain improvements.

The purpose of the project is to deliver high-quality mixed-use development with a predominant residential focus within convenient walking distance of Chatswood Train Station and Commercial Core.

This report has been prepared in response to the requirements contained within the SEARS request dated 23 June 2025. Specifically, this report has been prepared to respond to the SEARS requirement issued below:

Project Background and History

The site has a long planning history, beginning in 2013 with a Planning Proposal to Willoughby Council to amend the WLEP for mixed-use development, including 70% shop top housing. Despite initial support, the Council rejected the proposal in 2015, leading to a new Planning Proposal in 2016, which was also refused. The Sydney North Planning Panel recognised the proposal's merits in 2019, and the Department of Planning granted Gateway Approval in 2020. The Chatswood CBD Strategy, finalised in 2020, recommended a prohibition on residential uses in the Commercial Core zone, despite market feasibility analyses indicating low demand for new commercial office development.

The proposal was amended to reduce residential floor space to 30%, which was approved but remains commercially unfeasible. Market conditions have worsened, with high office vacancy rates and low demand for new commercial office space in Chatswood CBD. The current proposal seeks a mixed-use development with a predominant residential emphasis, aligning with the original 2014 vision.

The Site

The site is 61A-65 Albert Avenue, Chatswood and is located within the Willoughby local government area (LGA). The site is legally described as Lot 2 in Deposited Plan (DP) 1035379. It is regularly shaped and falls

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approximately 3m from West to East. The site is within the Chatswood central business district (CBD). The urban context surrounding the site is characterised by a mix of commercial, retail and residential developments. The surrounding locality is described as:

- Directly north of the site is the Sebel building which is a 28-storey tower which comprises of commercial, residential and serviced apartments. Further north is a variety of commercial, and retail uses which form the Chatswood Westfield Shopping Centre.
- The east of the site is bounded by Victor Street. Development consists of predominately retail continuing the Chatswood Westfield Shopping Centre.
- To the south of the site is a multi-storey car park for the Chatswood Westfield Shopping Centre and high-density residential development. Chatswood Baptist Church adjoins the site on the southern side of Albert Avenue and Chatswood Park is located towards the south-west.
- To the west of the site is the Chatswood interchange which includes Train and Metro services to the Sydney CBD and Sydney's Northern suburbs. These key transport links are located within 160m of the site.

The site currently accommodates the Mandarin Shopping Centre featuring five levels of retail space and three levels of car parking. Retail tenants include Hoyts Cinemas and Strike Bowling.

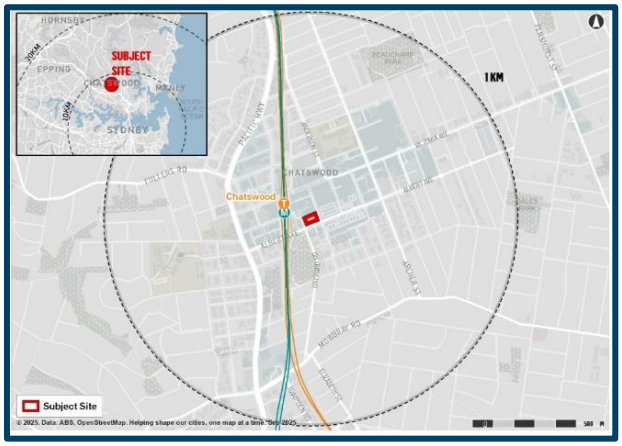

Figure 1 - Locality Plan

Figure 2 - Aerial Photograph

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1.2 Purpose

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

1.3 Building Code of Australia

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

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

The NCC has three (3) volumes being:

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

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code (**NCC**) Series Volume One – Building Code of Australia, 2022 Edition (BCA) Amendment 2, incorporating the State variations where applicable.

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

A reference to the BCA in this report is a reference to **BCA2022** Amendment 2, 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

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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 Amendment 2 unless otherwise discussed in this report);
3. Demolition Standards not referred to by the BCA;
4. Work Health and Safety Act 2011;
5. Requirements of Australian Standards unless specifically referred to;
6. Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and
7. Conditions of Development Consent issued by the Local Consent Authority.

1.5 Design documentation

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

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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 thirty-two (32)

2.2 Classification (Clause A6G1)

The building has been classified as follows.

Table 1 Building Classification(s)

Class	Level	Description
Class 2	Level 04 – Level 31	Residential SOUs
Class 6	Ground Floor – Level Two	Commercial Tenancies
Class 7a	Basement 06 - 01	Carparking
Class 7b	Level 01	Loading Dock & Waste Bins
Class 9b	Level Three	Wellness/Gym tenancies

2.3 Effective height (clause A1G4)

The building has an *effective height* of more than twenty-five (25) metres (111.75 metres)

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 6	Maximum Floor Area	5,000 m^2
	Maximum Volume	30,000 m^3
Class 9b	Maximum Floor Area	8,000 m^2
	Maximum Volume	48,000 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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Class 2	The Class 2 portions of the building are not subject to floor area and volume limitations of C3D3 as Specifications 5 and Clause C4D12 of the BCA regulate the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 buildings.

2.6 Fire compartments

The following fire compartments have been assumed:

1. The basement carpark
2. The Class 6 retail & 9b Wellness/gym floors (Ground Floor – Level 03)
3. Every floor of the residential portion of the building.

2.7 Exits

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

1. The entry into the fire isolated *exit* located on every floor.
2. The point of *open space* or the *road* on Ground Floor

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 is importance level 2.

Table B1D3a of the BCA provides the following:

Importance Level	Building Types	Jensen Hughes Interpretation and Examples
1	Buildings or structures presenting a low degree of hazard to life and other property in the case of failure.	1 and 2 storey factory buildings
2	Buildings or structures not included in Importance Level 1, 3 and 4.	Residential apartment buildings and associated carparking. Office buildings
3	Buildings or Structures that are designed to contain a large number of people.	Stadia, Entertainment venues, shopping centres. Transport facilities
4	Buildings or Structures that are essential to post-disaster recovery or associated with hazardous facilities.	Data centres, evacuation centres

The Guide to the BCA provides a generic description of building types which have Importance Levels assigned. The Guide states that the “Importance Level” concept is applicable to building structural safety only. Specific examples from the Guide are provided below. The examples provided by the Guide are not exhaustive of all building types.

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Importance Level 1:

- Farm buildings and farm sheds.
- Isolated minor storage facilities.
- Minor temporary facilities.

Importance Level 2:

- Low rise residential construction.
- Buildings and facilities below the limits set for Importance Level 3.

Importance Level 3:

- Buildings and facilities where more than 300 people can congregate in one area.
- Buildings and facilities with a primary school, a secondary school or day care facilities with a capacity greater than 250.
- Buildings and facilities with a capacity greater than 500 for colleges or adult educational facilities.
- Health care facilities with a capacity of 50 or more residents but not having surgery or emergency treatment facilities.
- Jails and detention facilities.
- Any occupancy with an occupant loads greater than 5000.
- Power generating facilities, water treatment and wastewater treatment facilities, any other public utilities not included in Importance Level 4.
- Buildings and facilities not included in Importance Level 4 containing hazardous materials capable of causing hazardous conditions that do not extend beyond property boundaries.

Importance Level 4:

- Buildings and facilities designated as essential facilities.
- Buildings and facilities with special post disaster functions.
- Medical emergency or surgery facilities.
- Emergency service facilities: fire, rescue, police station and emergency vehicle garages.
- Utilities required as backup for buildings and facilities of Importance Level 4.
- Designated emergency shelters.
- Designated emergency centres and ancillary facilities.
- Buildings and facilities containing hazardous materials capable of causing hazardous conditions that extend beyond property boundaries.
- Importance Levels must be assigned on a case-by-case basis.

2.10 Location of fire-source features

The fire source features for the subject development are:

North: The allotment boundary of 31 Victor Street, Chatswood

South: The far side of Albert Avenue

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East: The far side of Victor Street

West: The far side of the Garden of Remembrance

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.

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3.0 BCA assessment

3.1 Introduction

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

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

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

3.2 Relationship to the Design and Building Practitioners Act

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

- Structure
- Building Enclosure (e.g. Façade);
- Fire Safety Systems (e.g. services, egress and FRLs)
- Waterproofing
- Fire Safety performance solutions

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

3.3 Fire resistance and stability – Part C2 & Specification 5

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

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

It is proposed to undertake a Fire Engineered Performance Solution to address the reduction of FRLs for the Ground Floor and Level One loading dock to 120/120/120 in line with the Class 7a FRL requirements of Specification 5.

Furthermore, an additional Fire Engineered Performance Solution will be required to address any cavity barriers within the building, where the slabs and the bounding construction between the SOUs intersect with the external wall.

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The proposed residential chute discharge room is proposed to not be enclosed at the bottom of the shaft and will need to be addressed via a Fire Engineered Performance Solution under BCA Specification 5, Clause 8.

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 FRL's 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

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

A Fire Engineered Performance Solution is required to address the Class 6 & 9b fire compartment, as the Ground Floor to Level Two compartment will be greater the 5000m^2 as permitted by Clause C3D3. In addition, a Fire Engineered Performance Solution will be required to address to proposed glazed opening within the Class2 and Class 6 lobbies as separation between classifications.

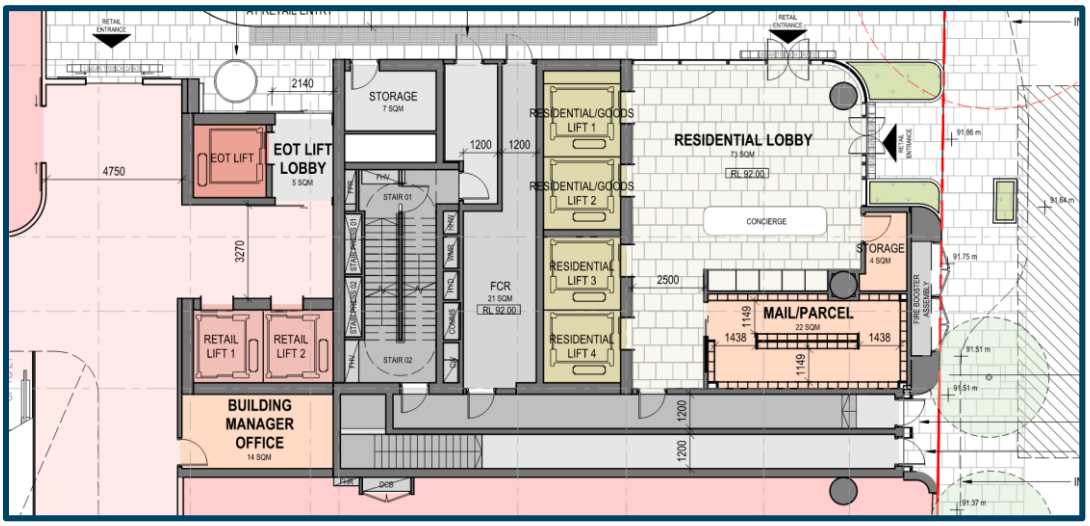

Figure 3 - Ground Floor residential lobby

An additional Fire Engineered Performance Solution will be required To permit the Class 2 corridor lengths within the building the building to be greater than forty (40) metres

Note: The smoke door is also required to swing in the direction of egress in accordance with BCA Clause D3D25.

Due to the location of the exits being on opposite ends of the residential corridor, the smoke door would be required to swing in both directions to comply with BCA Clause D3D25. However, this poses a smoke leakage issue with the smoke door.

Therefore, a Fire Engineered Performance Solution is required to address either the smoke door not swinging in the direction of egress or where the smoke door has a smoke leakage issue due to the bidirectional swing.

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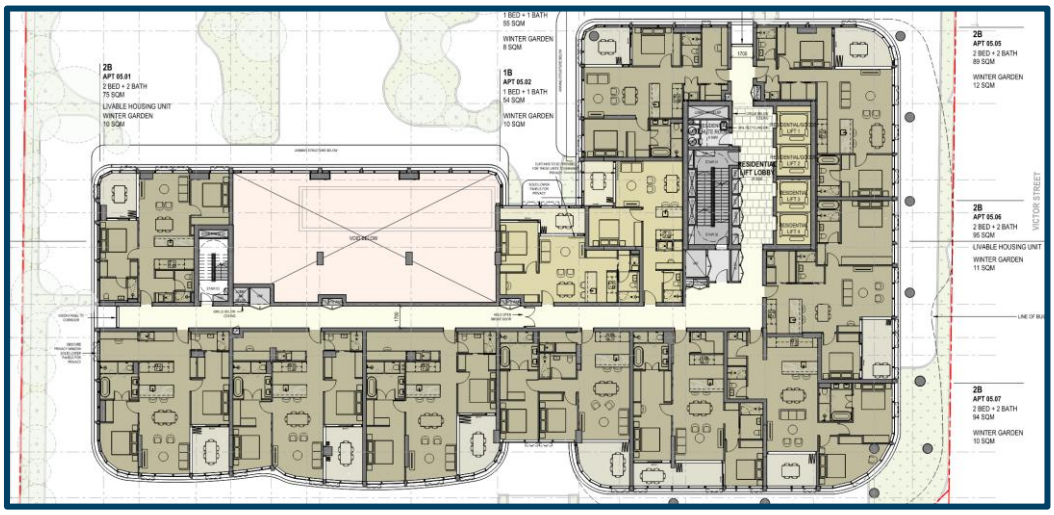

Figure 4 – Level 5 floor layout

Carpark

The carpark is required to have an AS2118.1 sprinkler system, as it accommodates more than forty (40) vehicles and/or is part of a building required to have sprinklers. Therefore, the carpark is not subject to the floor area and volume limitations under BCA Clause C3D3.

Spandrel Separation

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

No specific details of the spandrel walls have been provided to allow assessment however compliance is readily achievable.

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

3.5 Protection of Openings – Part C4

3.5.1 Openings in external walls

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

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. The doors to the lift are required to have an FRL of -/60/- in accordance with BCA Clause C4D11.

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3.5.3 Openings in floors for services and service installations

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

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

3.6 Occupant access and egress – Section D

3.6.1 Egress from the building

General Requirements

As the development is over twenty-five (25) metres effective height, each *storey* is required to have no less than two (2) exits.

A Fire Engineered Performance Solution is required to permit the discharge of Stair 1 to discharge internally in lieu of the *road* or *open space.*

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

A Fire Engineered Performance Solution is required to permit the connection between rising and descending flights within the following fire-isolated stairs:

- Stair 01
- Stair 02
- Stair 03

The proposed door within Stair 1 is non-compliant, as the door currently opens up more than 100 mm into a *required exit* as per Clause D3D25. It is recommended that the door from the fire-isolated stair open into the room as per Specification 19, Clause 9.

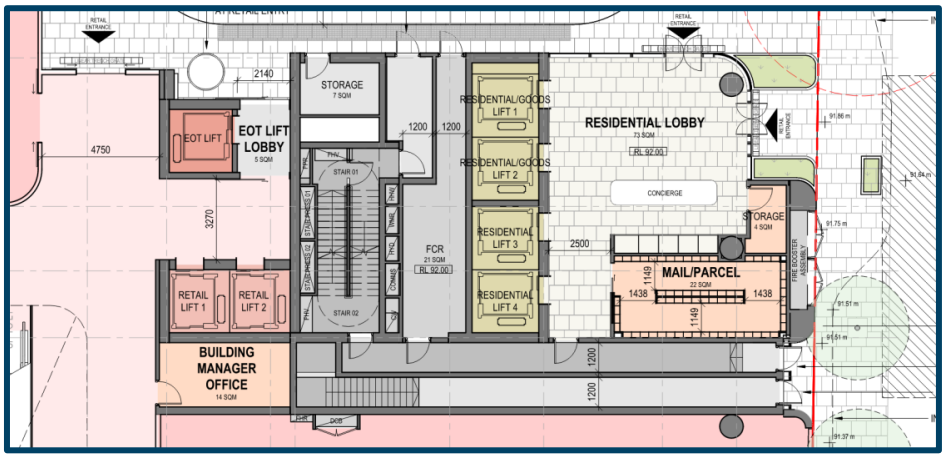

Figure 5 - The FCR for the development

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

Electrical distribution cupboards are to be provided with smoke separation to satisfy the requirements of BCA 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 suitably sealed against smoke spread by sealing with non-combustible mastic.

Basement Car Park – Basement Levels 06 - 01

It will be necessary to undertake a Fire Engineered Performance Solution to permit the extended travel distances to the following locations with BCA Clauses D2D5 & D2D6:

Basement 1:

- 27 metres to a single exit in lieu of 20 metres
- 30 metres to a Point of Choice in lieu of 20 metres
- 62 metres between exits in lieu of 60 metres.

Basements 02-06:

- 27 metres to a single exit in lieu of 20 metres
- 35 metres to a Point of Choice in lieu of 20 metres
- 65 metres between exits in lieu of 60 metres
- 5.5 metres between alternative exits (Stairs 1 & 2) in lieu of 6 metres

Commercial Levels – Ground Floor – Level Three

It will be necessary to undertake a Fire Engineered Performance Solution to permit the extended travel distances to the following locations with BCA Clauses D2D5 & D2D6:

Ground Floor:

- Mini Major - 65 metres between alternative exits in lieu of 60 metres

Level 01:

- 32 metres to a Point of Choice in lieu of 20 metres
- 43 metres to an exit in lieu of 40 metres
- To rely upon the existing bridge connection that does not discharge to the *road* or *open space* as an *exit.*

Level 02:

- 33 metres to a Point of Choice in lieu of 20 metres
- 51 metres to an exit in lieu of 40 metres
- 70 metres between alternative exits in lieu of 60 metres

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Level 03:

- 40 metres to a Point of Choice in lieu of 20 metres
- 60 metres to an exit in lieu of 40 metres
- 70 metres between alternative exits in lieu of 60 metres

Residential Floors

The building has a rise in storeys of more than three (3) with all levels connected by a common stairway. Therefore, BCA Clause D2D4 requires the residential building to have a fire-isolated stair.

To permit the following travel distance issues within the residential portion of the building:

- Level 4: 30 metres to a point of choice in lieu of 20 metres
- Level 4: 60 metres to an exit in lieu of 40 metres
- Level 4: 80 metres between alternative exits in lieu of 60 metres
- Level 30: 5.5 metres between alternative exits, in lieu of 6 metres.

3.6.2 Access for people with a disability

BCA Part D4 has not been assessed within this report, and is assessed within *20251127-251547 Access R1.0*, prepared by Jensen Hughes.

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 Appendix B of this report. The appendix 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 Appendix 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. Due to the size of the development, onsite fire hydrants with hydrants are to be located within four (4) metres of exits, or within fire isolated stairs as relevant to the requirements contained within AS2419.1-2021.

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

Due to the number of buildings on site, the Fire Hydrant Booster will not be within, affixed or in sight of the principal pedestrian entrance to each building. Therefore, a Fire Engineered Performance Solution will be required. Further design input is required at the Construction Certificate Stage.

Furthermore, a Fire Engineered Performance Solution is required to address the extended hydrant coverage to SOUs on Level 26, due to the two (2) storey SOUs.

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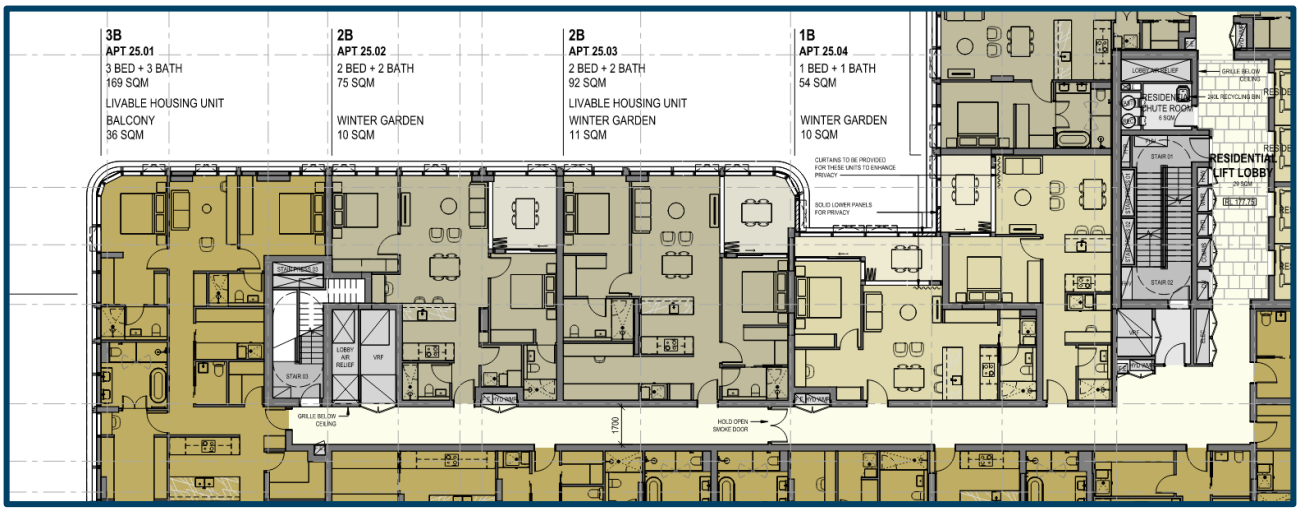

Figure 6 - The Level 26 SOUs affected

Fire Hose Reel

The Class 7a carpark and 6 & 9b compartment of the building are greater than 500m^2 and are required to have fire hose reels (FHR's). The plans currently do not indicate that the FHRs are located within four (4) metres of an *exit*, and that coverage to all points on a floor are within thirty-six (36) metres, plus four (4) metres of spray is achieved as per AS2441-2005. Further design development is required from the Hydraulic Consultant to achieve compliance.

A Fire Engineered Performance Solution is required to address any areas where a FHR is not permitted to pass through a fire-isolated door, such as the following locations:

- MSB Room
- Residential Chute Discharge Room

Sprinklers

The building is required to have a sprinkler system installed as per BCA Clause E1D17 & Specification 17. Details are to be provided at the Construction Certificate Stage by the Hydraulic Consultant to demonstrate compliance. As the building is over twenty-five (25) metres and will have multiple Fire Engineered Performance Solutions are required, than an AS2118.1 sprinkler system is required.

A Fire Engineered Performance Solution is required to permit the deletion of sprinklers within any room that is associated with high voltage (i.e., substation, MSB room).

Portable Fire Extinguishers

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

Fire Control Centre

As the development is over twenty-five (25) metres effective height, it is required to have a Fire Control Centre (FCC) in accordance with Clause E1D15 and Specification 19. No information has been provided, and further design input is required at the Construction Certificate Stage.

A Fire Engineered Performance Solution is required to permit the Fire Control Centre to be:

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- More than 300 mm above the *road.*
- To not have access from the main entrance of the building.

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 Appendix B of this report are provided as follows:

Smoke Alarms

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

Smoke Detection & Alarm System

The development must be provided with a smoke detection and alarm system complying with Specification S20C5. The preliminary SSD plans do not provide any details regarding the layout of smoke detection and alarm system and will be a matter required to be finalised during the detailed design stage. However, the smoke detection & alarm system is capable of complying, subject to further information from the Electrical Consultant during the Construction Certificate Stage demonstrating compliance.

Automatic Mechanical Shutdown

The Class 9b building/portion will likely have ducted mechanical ventilation or individual units with a capacity more than 1000 L/s, therefore automatic shutdown will be required to the ventilation system throughout the Class 9b parts in accordance with NSW BCA Clause E2D16. No details have been provided, and further design development is necessary from the Mechanical Consultant in subsequent design stages.

Stair Pressurization

As the development comprises stairs which serve a level above twenty-five (25) metres effective height, it will be necessary to have a stair pressurisation system to those stairs. The drawings indicate that all stairs have stair pressurisation shafts as required. With design development all shafts and lobby relief will need to be further developed with further design input from the Mechanical Consultant at the Construction Certificate Stage.

3.7.3 Part E3 – Lift Installations

Lifts Serving More than 12 Metres Effective Height

Lifts are provided to the building and are located within their own shaft, serviced by a common lobby. The lifts require stretcher facilities as they serve a height above twelve (12) metres in *effective height* and the dimensions of the shaft are sufficient to allow compliance for a 1400 mm width x 2000 mm length lift car.

Where buildings exceed twenty-five (25) metres effective height, the building is required to have one (1) emergency lift installed. A Fire Engineered Performance Solution is required prior to issuing the Construction Certificate to address the following issues within the building:

- To delete the requirement for an emergency lift that does not serve a *storey* more than twenty-five (25) metres in effective height.
- To permit one (1) emergency lift to serve the most upper floor, as lifts 3 & 4 do not serve levels 29 & 30

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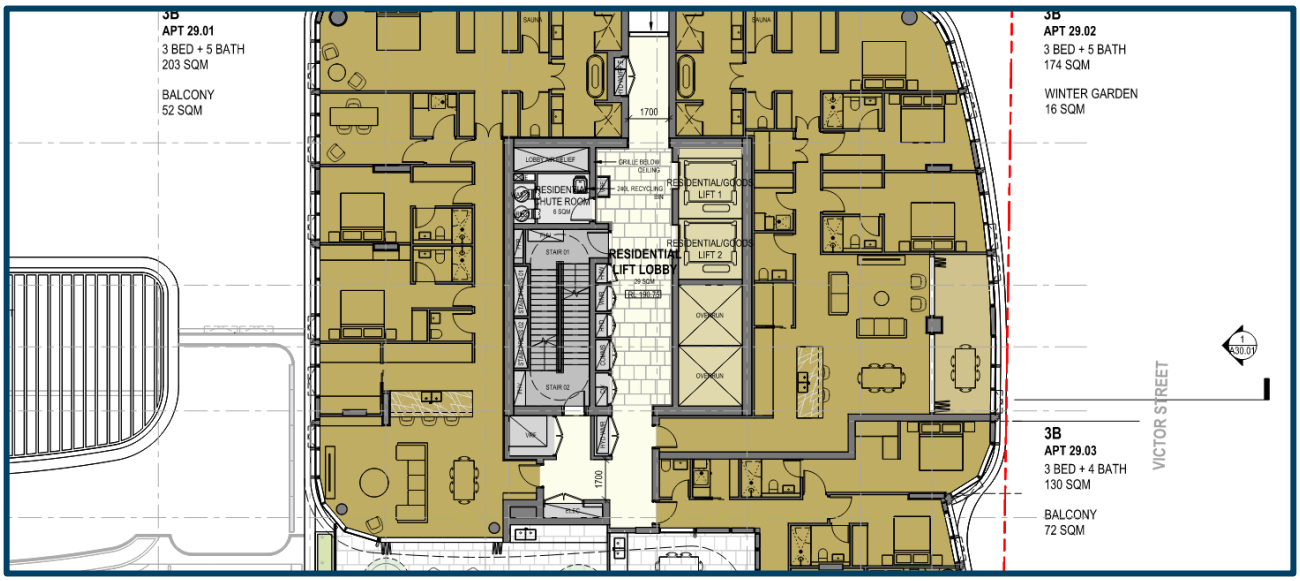

Figure 7 - Level 29 where lifts 3 & 4 stop

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 Appendix B of this report are provided as follows:

- Emergency lighting is required as per BCA Clause E4D2 for all non-fire-isolated stairs, corridors, passageways, hallways, or the like that is part of a path of travel to an exit.
- Exit signs are required to be installed throughout the building, including directional exit signs to guide occupants to the designated exits in the building.
- Emergency warning and intercommunication system is required to be installed within buildings with an effective height greater than twenty-five (25) metres.

The SSD plans do not provide any details for the emergency lighting and exit signs, and will be a matter required to be finalised during the detailed design stage. As such further information will be required at the Construction Certificate Stage, however compliance is readily achievable.

3.8 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.

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3.9 Facilities in class 3 to 9 buildings – Part F4

The number of facilities *required* have been calculated in accordance with Clause F4D4(c) – *Sanitary Facilities in a Class 6 building – Department Stores and Shopping Centres*

Patrons	Closet Pans	Urinals	Washbasins
Male	**8 WC = 9,600***	11 Urinal = 12,600	11 Basin = 12,600
Female	15 WC = 16,200	NA	**11 Basin = 9,600***

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

Based on the numbers above and with consideration of equal numbers of males and females, the facilities can accommodate up to 19,200 patrons – 9,600 males & 9,600 females.

**However, as no staff facilities have been accounted for due to the large number of retail tenancies, an estimated 5% of the total number of patrons will be counted towards staff – 960 staff.*

Therefore, the total number of patrons and staff associated with the Class 6/9b portion of the building will be 18,240 patrons and 960 staff.

3.10 Room heights – Part F5

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

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

3.11 Light and ventilation – Part F6

3.11.1 Residential Buildings

3.11.1.1 Method and extent of natural light

Class 2

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

Confirmation is required from the Project Certifier to determine whether the proposed home office nooks require 10% natural light as per BCA Clause F6D2

Where heat attenuation screens are provided as part of a Fire Engineered Performance Solution, it will be necessary to increase the window size openings to ensure that the 10% natural light requirement is achieved with the installation of the screen in front of the window.

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3.11.1.2 Ventilation of rooms

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

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

3.11.2 Commercial Buildings

For a Class the Class 6 & 9b portions of the building, artificial lighting and mechanical ventilation are required, and these systems can be readily installed in the building. Further design development and input will be required from the Electrical and Mechanical Consultants at the Construction Certificate Stage.

The carpark (other than an *open-deck* 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 Cleaning windows – NSW G1D5

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

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

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

3.13 Atrium Construction – BCA Part G3

A Fire Engineered Performance Solution is required to permit the construction of the atrium between Ground Floor to Level Three will not be constructed as per BCA Part G3.

3.14 Energy Efficiency - Section J

To be separately assessed by Energy Consultant.

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4.0 Statement of compliance

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

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

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Appendix A Design documentation

This report has been based on the following design documentation.

Table 2 Design documentation

Architectural Plans Prepared by Skidmore, Owings & Merrill	
Drawing Number	**Title**
GENERAL	
G00.00	COVER SHEET
G00.01	DRAWING INDEX
G01.00	RENDERS
G01.01	RENDERS
G01.02	RENDERS
G01.03	RENDERS
ARCHITECTURAL GENERAL	
A02.00	DEVELOPMENT SUMMARY
A05.00	SITE PLAN
A05.01	SITE ANALYSIS
A07.00	SITE SURVEY
DEMOLITION SITE	
AD05.00	DEMOLITION SITE PLAN
FLOOR PLANS	
A10.B06	BASEMENT 06 FLOOR PLAN
A10.B03	BASEMENT 03-05 FLOOR PLAN
A10.B02	BASEMENT 02 FLOOR PLAN
A10.B01	BASEMENT 01 FLOOR PLAN
A10.00	GROUND FLOOR PLAN
A10.01	LEVEL 01 FLOOR PLAN
A10.01M	LEVEL 01 MEZZANINE FLOOR PLAN
A10.02	LEVEL 02 FLOOR PLAN
A10.03	LEVEL 03 FLOOR PLAN
A10.04	LEVEL 04 FLOOR PLAN
A10.05	LEVEL 05 FLOOR PLAN

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Architectural Plans Prepared by Skidmore, Owings & Merrill	
A10.06	LEVEL 06-12 FLOOR PLAN
A10.13	LEVEL 13-24 FLOOR PLAN
A10.25	LEVEL 25 FLOOR PLAN
A10.26	LEVEL 26 FLOOR PLAN
A10.27	LEVEL 27 FLOOR PLAN
A10.28	LEVEL 28 FLOOR PLAN
A10.29	LEVEL 29 FLOOR PLAN
A10.30	LEVEL 30 FLOOR PLAN
A10.31	LEVEL 31 FLOOR PLAN
A10.32	ROOF LEVEL FLOOR PLAN
A10.33	PARAPET PLAN
BUILDING ELEVATIONS AND SECTIONS	
A30.00	NORTH ELEVATION
A30.01	SOUTH ELEVATION
A30.02	EAST ELEVATION
A30.03	SOTUH ELEVATION
A30.10	PODIUM ELEVATION (ALBERT AVENUE)
A30.11	PODIUM ELEVATION (VICTOR STREET)
A31.00	SECTION AA
A31.01	SECTION BB
EXTERIOR ENCLOSURE	
A54.00	MATERIALITY PALETTE
A57.00	ELEVATED PEDESTRIAN BRIDGE ELEVATION
ADG COMPLIANCE	
A95.00	GFA
A95.01	GFA
A95.02	PRIVACY/SEPARATION
A95.03	SHADOW DIAGRAM – 21 JUNE
A95.04	SHADOW DIAGRAM – 21 JUNE
A95.05	SOLAR ACCESS

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Architectural Plans Prepared by Skidmore, Owings & Merrill	
A95.06	SOLAR ACCESS
A95.07	SUN EYE DIAGRAM
A95.08	SUN EYE DIAGRAM
A95.09	CROSS VENTILATION
A95.10	CROSS VENTILATION
A95.11	COMMUNAL OPEN SPACE
A95.12	STORAGE
A95.13	DEEP SOIL/LANDSCAPE AREAS
A95.14	ADAPTABLE APARTMENT PLANS
A95.15	ADAPTABLE APARTMENT PLANS

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Appendix B Essential Services

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

Table 3 Essential fire safety measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
32.	Access Panels & doors/hoppers (fire rated)	**BCA2022 C4D14** (Openings in Shafts) **BCA2022 Specification 12** AS 1905.2:2005 (Fire Resistant roller shutters)
33.	Construction Joints	**BCA2022 C2D2, Specification 5** **BCA2022 C4D16** AS 1530.4:2014 & AS 4072.1:2005
34.	Fire doors	**BCA2022 C4D9** (Openings in Fire Isolated Exits) **BCA2022 C4D11** (Opening in Fire Isolated Lift Shafts) AS1735.11- 1986 **BCA2022 C4D12** (Bounding Construction) **BCA2022 C4D14** (Opening in Shafts) **Specification 19** (Fire Control Centres) **Specification 12** AS1905.1: 2015
35.	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
36.	Lightweight construction	**BCA2022 C2D2, Specification 5** **BCA2022 C2D9, Specification 6** **BCA2022 C4D12** (Bounding Construction) AS1530.4:2014
General		
37.	Fire control centres & rooms Fire Control Room - >50m	**BCA2022 E1D15, Specification 19** (Fire Control Centres)
38.	Portable fire extinguishers	**BCA2022 E1D14** AS 2444–2001
39.	Fire blankets	AS 2444–2001
General Egress		
40.	Warning & operational signs	**BCA2022 D3D28** (Signs on Fire Doors)

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Item	Essential Fire and Other Safety Measures	Standard of Performance
		BCA2022 D4D7 (Braille Exit Signs) (Note: **E4D5** (Exit Signs)) **BCA2022 E3D4** (Lift Signs) **BCA2022 Specification 19** (Fire Control Room)
Lifts		
41.	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'
42.	Emergency lifts	**BCA2022 E3D5** AS 1735.1:2003 (Appendix A) or AS 1735.2:2001
43.	Stretcher Lifts including Fire Service Controls Recall Operation 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		
44.	Automatic fail-safe devices Auto open Sliding Exit doors Break Glass release	**BCA2022 D3D27** (Re-entry from fire-isolated stairs) AS1670.1:2018 (Fire)
45.	Automatic fire detection & alarm:	**BCA2022 E2D3, E2D4, E2D5 E2D6, E2D12, E2D15, E2D20** **Spec 20** **BCA2022 C4D9** (Openings in Fire-Isolated Exits) **BCA2022 C4D12** (Bounding Construction) **Specification 12** **Specification 31** (Atriums) **BCA2022 S20C5** (Combined smoke alarm and smoke detection system) **BCA2022 S20C6** (Smoke detection for smoke control systems) **BCA2022 S20C7** (BOWS) **BCA2022 S20C8** (System Monitoring) AS 3786:2014 (Amdt 1-4) AS 1670.1 (Amdt 1) (Fire) – Section 4 and 5 (Detectors) AS 1670.1 (Amdt 1) (Fire) – Section 7 (Smoke Control) AS 1670.3 (Amdt 1) (Fire Alarm Monitoring) AS 1670.4 (Amdt 1) (EWIS)

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Item	Essential Fire and Other Safety Measures	Standard of Performance
46.	Emergency lighting	**BCA2022 E4D2, E4D4** AS/NZS 2293.1:2018
47.	Exit signs	**BCA2022 E4D55** (Exit Signs) **BCA2022 E4D6** (Direction Signs) **BCA2022 E4D8** (Design and Operation - Exits) AS/NZS 2293.1:2018
48.	System Monitoring	**BCA2022 S20C8** AS 1670.3 (Amdt 1) Monitoring Required for any: Any Sprinkler System
Hydraulic Services		
49.	Automatic fire suppression systems	**BCA2022 E1D4, E1D5, E1D6, E1D7, E1D8, E1D9, E1D10, E1D11, E1D12** **BCA2022 Specification 17** AS 2118.1:2017 (Sprinklers) AS 2118.6:2012 (Combined Sprinklers/Hydrant)
50.	Fire hydrant systems NSW Storz Couplings Ring Main required (LIB, >25m) Fire Brigade Relay Pump (>50m) On-site water storage (>25m)	**BCA2022 E1D2** AS 2419.1:2021 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'
51.	Hose reel systems	**BCA2022 E1D3** AS 2441:2005
Mechanical Services		
52.	Fire dampers	**BCA2022 E2, Specification 20, Specification 21** **BCA2022 C4D16** AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
53.	Mechanical air handling systems Mechanical ventilation to carpark. Auto-shutdown of Air-handling System. Zone Pressurisation System. Fire Isolated Exit Pressurisation System	**BCA2022 E2,** **Specification 20, Specification 21** AS 1668.1:2015 (Amdt 1) Note: 5.5.3 Override control To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point. Note: Signage should be located at the car park entry indicating the location of the control switches.

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Appendix 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.

Note: FRLs are proposed to be reduced as part of a Fire Engineered Performance Solution.

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 6, 7a, 7b & 9b	-	-
Less than 1.5 m	90/90/90	120/120/120	-	-
1.5 to less than 3 m	90/60/60	120/90/90	-	-
3m, or more	90/60/30	120/60/30	-	-

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 6, 7a, 7b & 9b	-	-
Less than 1.5 m	-/90/90	-/120/120	-	-
1.5 to less than 3 m	-/60/60	-/90/90	-	-
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 6, 7a, 7b & 9b	-	-
Loadbearing	90/-/-	120/-/-	-	-
Non-loadbearing	-/-/-	-/-/-	-	-

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

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Wall Type	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2	Class 6, 7a, 7b & 9b	-	-
Loadbearing or non-bearing	90/90/90	120/120/120	-	-

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

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

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

Location	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2	Class 6, 7a, 7b & 9b	-	-
Fire-resisting lift and stair shafts	-/90/90	-/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	-	-

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 6, 7a, 7b & 9b	-	-
Other loadbearing internal walls, internal beams, trusses and columns	90/-/-	120/-/-	-	-

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Building Element	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2	Class 6, 7a, 7b & 9b	-	-
Floors	90/90/90	120/120/120	-	-
Roofs	90/60/30	120/60/30	-	-

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Appendix D Definitions

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.

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

Fire-source feature

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

Fire wall

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

Flammability index

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

Group number

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

Horizontal exit

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

Loadbearing

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

Non-combustible

Non-combustible means—

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

Occupiable outdoor area

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

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

Open space

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

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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.

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Appendix 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. Vertical separation will be provided to the new openings in the external walls in accordance with Clause C3D7 of BCA2022. It is noted that no spandrel separation is required in the stairway or to a void.
7. 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.
8. Floors separating storeys of different classifications will comply with BCA Clause C3D10 of BCA2022.
9. Equipment will be separated in accordance with Clause C3D13 of BCA2022.
10. 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.
11. The public corridors will be divided into intervals of not more than 40m in length with smoke proof walls in accordance with Clause C3D15, and S11C2 of Specification 11 of BCA2022. The smoke doors shall swing in both directions, or otherwise be installed to swing in the direction of egress.
12. 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.
13. 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.
14. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C4D10 of BCA2022.
15. 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.
16. 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.

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17. The lift doors will be -/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C4D11 of BCA2022.
18. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C4D12 of BCA2022.
19. 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.
20. 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.
21. 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.
22. Fire doors will comply with AS 1905.1:2015 and Specification C4D5 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 be not be less than 9m apart, and not more that 45m apart in any residential portions or patient care areas in the health-care building, or otherwise not more than 60m apart, in accordance with Clause D2D6 of BCA2022.
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 non-required stairways, ramps and escalators will be in accordance with Clause D2D17 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 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.
35. 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.
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.

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37. The fire-isolated passageway will be in accordance with Clause D3D12 of BCA2022.
38. The roof of the building where the exit discharges will have an FRL of 120/120/120 and will not have roof lights or openings within 3m of the path of travel in accordance with Clause D3D13 of BCA2022.
39. 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.
40. 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.
41. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D3D17 to D3D21, and D3D22 of BCA2022.
42. 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.
43. The doorways and doors will be in accordance with Clause D3D24 and D3D25 of BCA2022.
44. Door latching mechanisms will be in accordance with Clause D3D26 of BCA2022.
45. Re-entry doors from the fire-isolated exits will be in accordance with Clause D3D27 of BCA2022.
46. Signage will be provided on fire and smoke doors in accordance with Clause D3D28 of BCA2022.
47. 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.
48. The new works will be accessible in accordance with Clause D4D2, D4D3, D4D4 of BCA2022, and with AS 1428.1:2009, with particular note to door circulation spaces, accessway widths, turning spaces and floor coverings, in accordance with Part D4 of BCA2022.
49. Accessible carparking will be in accordance with Clause D4D6 of BCA2022.
50. Braille and tactile signage will in accordance with Clause D4D7, and Specification 15 of BCA2022.
51. Hearing augmentation system(s) will be provided in accordance with Clause D4D8 of BCA2022.
52. Tactile ground surface indicators will be provided in accordance with Clause D4D9 of BCA2022 and AS/NZS 1428.4.1:2009.
53. The ramps associated with the accessway will not have a combined vertical rise of more than 3.6m and a landing for a step ramp will not overlap a landing for another step ramp of ramp in accordance with Clause D4D12 of BCA2022.
54. On an accessway, where there is no chair rail, handrail, or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, will be clearly marked in accordance with AS 1428.1:2009 and Clause D4D13 of BCA2022.
55. The fire control room will be in accordance with Clause E1D15 and Specification 19 of BCA2022.

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56. Fire precautions whilst the building is under construction will be in accordance with Clause E1D16 of BCA2022.
57. Additional provisions will be made in accordance with Clause E1D17 and E2D21 of BCA2022, due to the special hazards associated with the building works or the location of the building works.
58. Non-illuminated exit signage will be installed in accordance with Clause E4D7, and of BCA2022.
59. External above ground waterproofing membranes will comply with Clause F1D5 of BCA2022 and AS 4654 Parts 1 & 2:2012.
60. The new roof covering will be in accordance with Clause F3D2 of BCA2022.
61. Any sarking proposed will be installed in accordance with Clause F3D3 of BCA2022.
62. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F2D2 and F2D3 of BCA2022 and AS 3740:2010.
63. Damp proofing of the proposed structure will be carried out in accordance with Clause F1D6 and F1D7 of BCA2022.
64. Floor wastes, including falls to floor wastes (including any voluntarily proposed floor wastes), will be installed in accordance with Clause F2D4 of BCA2022.
65. Sub-floor ventilation will be provided in accordance with Clause F1D8 of BCA2022.
66. All new glazing to be installed throughout the development will be in accordance with Clause F3D4 of BCA2022 and AS 1288:2006 / AS 2047:2014.
67. Sanitary facilities will be provided in the building in accordance with Clause F4D2, Table F4D2, Clause F4D4 and Table F4D4 of BCA2022.
68. Accessible sanitary facilities will be provided in the building in accordance with Clause F4D5, F4D6, Table F4D6 of BCA2022 and AS1428.1:2009.
69. Ceiling heights will be in accordance with Clause F5D2 of BCA2022.
70. Natural light will be provided in accordance with Clause F6D2, F6D3, and F6D4 of BCA2022.
71. Natural or mechanical ventilation will be provided in accordance with Clause F6D6, F6D7 and F6D8 of BCA2022.
72. Water closets and urinals will be located in accordance with Clause F6D9 of BCA2022.
73. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F6D10 of BCA2022.
74. 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.
75. 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.
76. 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.
77. The refrigerated or cooling chamber, strongroom or vault will be in accordance with Clause G1D3.
78. The atrium will be in accordance with Part G3, and Specification 31 of BCA2022.

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

Electrical Services Design Certification:

85. Hearing augmentation system(s) will be provided in accordance with Clause D4D8 of BCA2022.
86. A smoke detection and alarm system will be installed throughout the building in accordance with E2D4 to E2D13, and Specification 20 of BCA2022.
87. Emergency lighting will be installed throughout the development in accordance with Clause E4D2, E4D4 of BCA2022 and AS/NZS 2293.1:2018.
88. Exit signage will be installed in accordance with Clause E4D5, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.
89. An emergency warning and intercom system (EWIS) will be provided to the building in accordance with Clause E4D9 of BCA2022.
90. Artificial lighting will be installed throughout the development in accordance Clause F6D5 of BCA2022 and AS/NZS 1680.0:2009.
91. Lighting power and controls will be installed in accordance with Part J7 of BCA2022.
92. 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:

93. Storm water drainage will be provided in accordance with Clause F1D3 of BCA2022 and AS/NZS 3500.3:2018
94. Fire hydrant system will be installed in accordance with Clause E1D2 of BCA2022 and AS 2419.1:2005 as required.
95. Fire hose reels will be installed in accordance with Clause E1D3 of BCA2022 and AS 2441:2005.
96. A sprinkler system will be installed in accordance with Clause E1D4 of BCA2022 Specification 17 and appropriate part(s) of AS 2118.
97. Portable fire extinguishers will be installed in accordance with Clause E1D14 of BCA2022 and AS 2444:2001.
98. 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:

99. 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.

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100. Stair pressurisation will be installed in the building in accordance with E2D4 to E2D13 of BCA2022 and AS 1668.1:2015.
101. A zone pressurisation system will be installed in the building in accordance with E2D6 of BCA2022
102. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F6D6 of BCA2022 and AS 1668.2:2012.
103. 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.
104. The commercial kitchen will be provided with a kitchen exhaust hood in accordance with Clause F6D12 of BCA2022, and AS 1668.1:2015 and AS 1668.2:2012.
105. 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.
106. 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.
107. The air-conditioning and ventilations systems will be designed and installed in accordance with Part J6 of BCA2022
108. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

109. The material and forms of construction for the proposed works will be in accordance with Clause B1D3, B1D4 and B1D6 of BCA2022 as follows:
    a. Dead and Live Loads – AS/NZS 1170.1:2002
    b. Wind Loads – AS/NZS 1170.2:2011
    c. Earthquake actions – AS 1170.4:2007
    d. Masonry – AS 3700:2018
    e. Concrete Construction – AS 3600:2018
    f. Steel Construction AS 4100:1998
    g. Aluminium Construction – AS/NZS 1664.1 or 2:1997
    h. Timber Construction – AS 1720.1:2010
    i. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
110. 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.
111. The lift shaft will have an FRL in accordance with Clause C3D11 and Specification 5 of BCA2022.
112. Lightweight construction used to achieve required fire resistance levels will comply with Specification 6 of BCA2022.
113. The construction joints to the structure will be in accordance with Clause C4D16 of BCA2022 to reinstate the FRL of the element concerned.
114. The concrete panel external walls will be in accordance with Specification 5 of BCA2022.

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115. 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:

116. 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.
117. 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.
118. An emergency lift will be provided in the building in accordance with Clause E3D5 of BCA2022.
119. 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.
120. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3D12.
121. Access and egress to the lift well landings will comply with the Deemed-to-Satisfy Provisions of D4 of the BCA2022 and will be suitable to accommodate disabled persons.
122. The type of lifts will also be suitable to accommodate persons with a disability in accordance with Clause E3D7 and E3D8 and will also have accessible features in accordance with E3D7 and E3D8 of BCA2022.
123. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3D7 and E3D8 of BCA2022.
124. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification 24 of BCA2022.

Acoustic Services Design Certification:

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

NSW Specification Design Certificate:

126. 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.
127. 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.
128. Landings and door thresholds throughout the development will be provided in accordance with Clause D3D15 and D3D162.15, 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.
129. The height of barriers is to be in accordance with D3D18 and NSW D3D18(1) of the BCA2022.

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130. The doorways and doors will be in accordance with Clause D3D24, NSW Clause D23D24(2) of the BCA2022.
131. 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.
132. The swimming pool associated with the new building will comply with Clause G1D2 and NSW G1D2 of the BCA, Swimming Pools Act 1992, Swimming Pools Regulation 2018 and AS 1926.1:2012. AS 1926.2:2007 and AS 1926.3:2010.
133. Insulation will be in accordance with AS/NZS 4859.1:2018 and will be installed as required by NSW Part J4 of the BCA.
134. A smoke detection and alarm systems will be installed throughout the building in accordance with E2D10, NSW E2D10 and NSW Specification 20 of BCA2022.
135. Exit signage will be installed in accordance with Clause E4D5, NSW Clause E4D6, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.
136. A smoke exhaust system will be installed in the building in accordance with E2D14 to E2D20, NSW E2D16 to E2D20 and Specification 21 of BCA2022.
137. The building will be mechanically ventilated in accordance with Clause F6D6, NSW F6D6 of BCA2022 and AS 1668.2:2012.

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