CENTENNIAL PROPERTY GROUP

BCA ASSESSMENT REPORT (DA)

114 Old Pittwater Road, Brookvale NSW

Project Number: 121095
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Document Control

Revision	Issue Date	Issue Description	Prepared By:	Verified by:
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Jensen Hughes Australia

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

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

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

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

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

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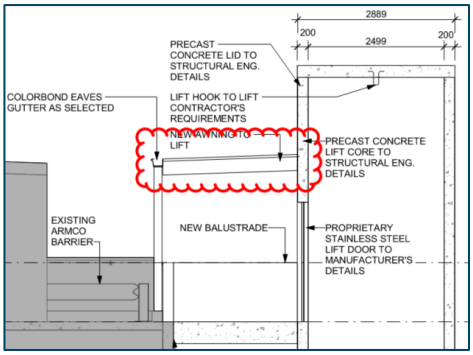
Executive summary

This document provides an assessment of the architectural design drawings for the proposed new tenancy lift and updating the car parking area at 114 Old Pittwater Road, Brookvale NSW, against the Deemed-to-Satisfy Provisions of the Building Code of Australia (BCA) 2022 Volume One.

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

Item	Description	BCA Provision
Fire-related Performance Solutions required		
1.	Since the building is not sprinkler protected, the new awning roof structure and associated load-bearing external columns/posts are required to be fire-resisting in accordance with BCA Table S5C11g. Early input from a Fire Safety Engineer is recommended to determine whether the FRL can be omitted as part of a Performance Solution. 	S5C11: Type A fire-resisting construction — fire-resistance of building elements
Non-fire-related Performance Solutions required		
2.	Precast concrete panels bounding the new lift shaft are not considered a Deemed-to-Satisfy (DtS) external wall cladding type in accordance with BCA Clause F3D5. A Performance Solution will need to be prepared by a Façade Engineer that demonstrates compliance with Performance Requirement F3P1 is achievable.	F3D5: Wall cladding
Building Code of Australia compliance matters to be addressed		
3.	The current annual fire safety statement (AFSS) nominates the incorrect BCA and Australian Standards for the following fire safety measures serving the Woolworths tenancy, which need to be updated in line with **Annexure B** of this report: • Woolworths portion – fire hydrant system. • Woolworths potion – fire hose reel system.	E1D2: Fire hydrants E1D3: Fire hose reels

1.0 Basis of Assessment

1.1 LOCATION AND DESCRIPTION

The building development, the subject of this report, is located at 114 Old Pittwater Road, Brookvale NSW. The existing concrete building includes offices, retail and a Woolworth's distribution warehouse. The new construction work is comprised of the following:

- Demolition of the existing awning.
- Installation of a new lift on the northeastern entrance that provides access from the ground level to the rooftop.
- Provision of new carparks and remarking of existing carparks, excluding accessible carparks.

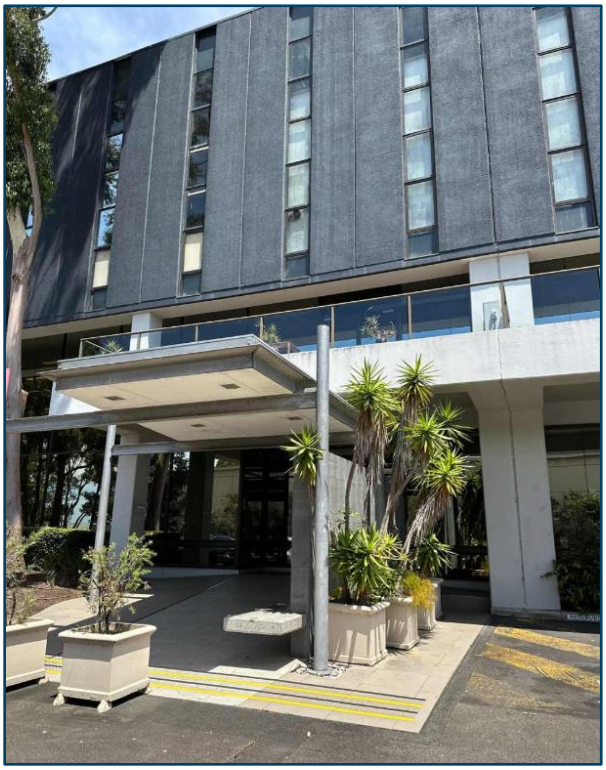


Figure 1 - New lift location

1.2 PURPOSE

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

1.3 BUILDING CODE OF AUSTRALIA

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

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

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

1.4 LIMITATIONS

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

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

This report does not include, or imply compliance with—

1. the National Construction Code – Plumbing Code of Australia Volume 3
2. the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to) (Note: The provision of access for people with a disability for the subject development has not been assessed against the Deemed-to-Satisfy Provisions of Part D4 and Clauses E3D7, E3D8, F4D5, F4D6, F4D7 and F4D12 of BCA2022 and it is covered in a separate 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; and
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.

1.5 DESIGN DOCUMENTATION

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

2.0 Building Description

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

2.1 RISE IN STOREYS (CLAUSE C2D3)

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

Note 1: The Roof is considered a *storey* due to the new lift awning and existing lift lobby.

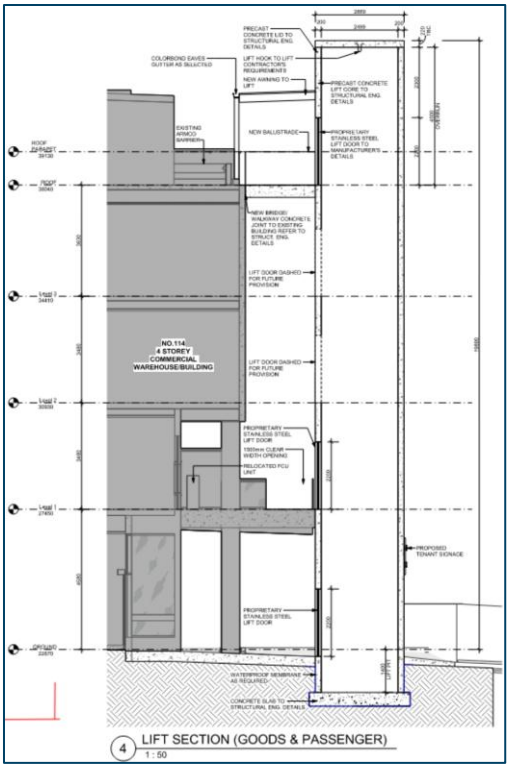


Figure 2 - Lift section

2.2 CLASSIFICATION (CLAUSE A6G1)

The building has been classified as follows:

Table 1: Building Classification

Class	Level	Description
Class 5	Ground Level & Level 1	Offices
Class 6	Ground Level	Retail
Class 7b	Level 2 & Level 3	Warehouse and storage areas (Woolworth's distribution Centre)
Class 7a	Roof	Open carpark and lift lobbies (existing and new)

2.3 EFFECTIVE HEIGHT (CLAUSE A1G4)

The building has an *effective height* of **15.17 m** (GF FFL 22.870-RF FFL 38.040).

2.4 TYPE OF CONSTRUCTION REQUIRED (TABLE C2D2)

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

2.5 FLOOR AREA AND VOLUME LIMITATIONS (TABLE C3D3)

The building is subject to the following maximum floor area and volume limits:

Class 5	Maximum Floor Area	8000 m^2
	Maximum Volume	48000 m^3
Class 6 & 7	Maximum Floor Area	5000 m^2
	Maximum Volume	30000 m^3

2.6 EXITS

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

Ground Level

External doorways leading to *open space*.

Level 1

+ Nearest riser of the non-fire-isolated stairways.
+ Doorways leading to fire-isolated stairways.

Level 2-Roof

Doorways leading to fire-isolated stairways.

2.7 CLIMATE ZONE

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

2.8 LOCATION OF FIRE-SOURCE FEATURES

The fire source features for the subject development are:

North 1:	The boundary of the adjacent property at 106 Old Pittwater Street
North 2:	The boundary of the adjacent property at 108-122 Old Pittwater Street
South:	The boundary of the adjacent property at 122 Old Pittwater Street
East 1:	The boundary of the adjacent property at 108-122 Old Pittwater Street
East 2:	The boundary of the adjacent property at 122 Old Pittwater Street
East 3:	The far boundary of Old Pittwater Road
West:	The rear boundary of the allotment

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

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

b. is neither transparent nor translucent.

3.0 BCA Assessment

3.1 INTRODUCTION

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

The main purpose of this report is to identify any major design changes required to the building, services required to be installed, and the fundamentals of design required by Sections C, D (except Part D4), E (except Clause E3D7), F (except Clauses F4D5, F4D6 and F4D12), G and H (where applicable) of the BCA. This report does not address the design requirements for the structure of the building (Section B), or for the detailed design of services (Section E) and is subject to the limitations outlined under **Section 1.4** of this report.

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

3.2 FIRE RESISTANCE AND STABILITY – PART C2

+ Subject to the required FRLs being provided for affected parts in accordance with **Annexure C** of this report, the proposed works are capable of complying with the requirements of the BCA2022 Specification 5 with respect to fire resistance.
+ Since the building is not sprinkler protected, the new awning roof structure and associated loadbearing external columns/posts are required to be fire-resisting in accordance with BCA Table S5C11g. Early input from a Fire Safety Engineer is recommended to determine whether the FRL can be omitted as part of a Performance Solution.

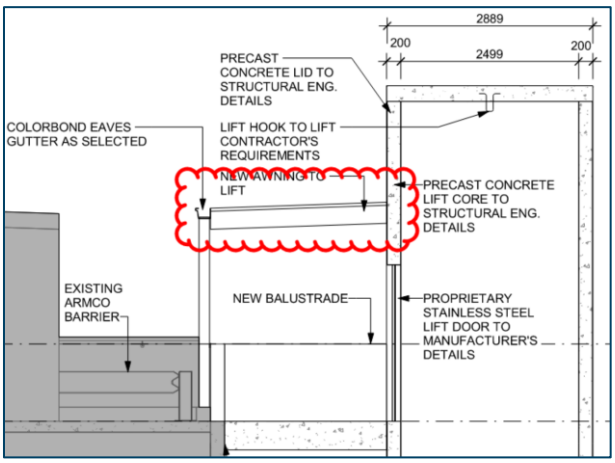


Figure 3 – New awning

+ Since the building attracts Type A construction, new—
  - external walls and their components are to comply with BCA2022 Clause C2D10; and
  - ancillary elements fixed to external walls (e.g. signage) are to comply with BCA2022 Clause C2D14.
+ Any new internal linings and materials that are not located within the lift car are required to comply with BCA Clause C2D11 and Specification 7.

- Internal linings within the new lift car are to comply with the following:
  - Floor linings and floor coverings of the lift must have a critical radiant flux of not less than 2.2 kW/m^2 when tested against AS 9239.1—2003.
  - Wall and ceiling linings must be a Group 1 or 2 material in accordance with AS 5637.1—2015.

3.3 COMPARTMENTATION AND SEPARATION – PART C3

- New works are to comply with the floor area and volume limitations prescribed in BCA2022 Clause C3D3.
- Since the new lift connects more than three (3) storeys and the building is not protected by a fire sprinkler system, the lift shaft must be fire-isolated from the remainder of the building in accordance with BCA Clause C3D11.

3.4 PROTECTION OF OPENINGS – PART C4

- New lift doors must be protected by -/60/- fire that comply with AS 1735.11—1986 and are set to remain closed except when discharging or receiving passengers in accordance with BCA Clause C4D11.
- Where new electrical, plumbing, mechanical or other services pass through an element of construction that is required to achieve a fire resistance level (FRL), the service installation shall not compromise the fire resistance level of the element. As such, the service installation must be fire sealed with a compliant system such as fire collar on PVC pipes or fire rated mastic on electrical cables. Compliance is readily achievable with BCA2022 Clauses C4D13, C4D14 and C4D15.

3.5 PROVISION FOR ESCAPE – PART D2

- Access is provided to at least one (1) exit from all affected parts in accordance with BCA2022 Clause D2D3, noting that the building has an effective height of less than **25 m**.
- Egress from the new lift landings on the Ground level, Level 1, and Roof is within the exit travel distance parameters prescribed by BCA Clauses D2D5, D2D6 and D2D14.
- The Fire Engineering Report prepared by Olsson Fire & Risk Consulting Engineers, Project No. S17202, Revision 1.1, dated 28/08/2017 permits the following extended travel distances from the Woolworths tenancy:
  - 31.5 m to a point of choice (POC) in lieu of 20 m.
  - 58.5 m to the nearest exit in lieu of 40 m.
  - 92 m between alternative exits in lieu of 60 m.

3.6 CONSTRUCTION OF EXITS – PART D3

- If proposed, electrical distribution cupboards are to be provided with smoke separation to satisfy the requirements of BCA2022 Clause D3D8. The doors are to be lined internally with fire grade plasterboard or metal backing sheets and smoke seals provided to all four sides, including drop down seals on the bottom. All penetrations from the enclosure are to be suitable sealed against smoke spread by sealing with fire mastic.
- New barriers protecting a height of greater than 4 m above the surface beneath must not incorporate climbable elements between 150-760 mm above the floor in accordance with BCA Clause D3D20.

3.7 ACCESS FOR PEOPLE WITH A DISABILITY – PART D4

BCA Part D4 has not been assessed within this report and is addressed as part of a separate Access Assessment Report prepared by Jensen Hughes.

3.8 SERVICES AND EQUIPMENT- PARTS E1, E2 AND E4

+ For affected parts, the building is required to be provided with the services and equipment set out in **Annexure B** of this report. The annexure also outlines the standard of performance to be achieved by the services and equipment. Details are to be provided at Construction Certificate stage that demonstrate how compliance will be achieved with Parts E1, E2 and E4.
+ The affected parts are to be served by the following essential services:
  - A fire hydrant system; however, since the works relate to a minor addition, it is recommended that a Fire Services Engineer provides early input to determine whether an exemption under Section 74 of the *Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021* to maintain the current standard of performance for the base building is feasible – refer to **Annexure B** of this report for the current standard of performance.
  - A fire hose reel system; however, since the works relate to a minor addition, it is recommended that a Fire Services Engineer provides early input to determine whether an exemption under Section 74 of the *Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021* to maintain the current standard of performance for the base building is feasible – refer to **Annexure B** of this report for the current standard of performance.
  - Portable fire extinguishers in accordance with BCA Clause E1D14 and AS 2444—2001.
  - An automatic fire detection and alarm system; however, since the works relate to a minor addition, it is recommended that a Fire Services Engineer provides early input to determine whether an exemption under Section 74 of the *Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021* to maintain the current standard of performance for the base building is feasible – refer to **Annexure B** of this report for the current standard of performance.
  - Emergency lighting in accordance with BCA2022 Clauses E4D2 and E4D4, and AS/NZS 2293.1—2018.
  - Exit signage in accordance with BCA2022 Clauses E4D5, NSW E4D6, E4D7 and E4D8, and AS/NZS 2293.1—2018.

3.9 LIFT INSTALLATIONS – PART E3

+ BCA Clause E3D2 requires that the new lift must comply with BCA Specification 24.
+ Since the new lift serves a storey with an effective height of more than 12 m, it must—
  - be able to accommodate a stretcher facility with dimensions of 600 mm wide x 2000 mm long x 1400 mm high in accordance with BCA Clause E3D3;
  - have lift floor dimension of not less than 1400 mm wide x 1600 mm deep in accordance with BCA Clause E3D8;
  - be provided with fire service controls in accordance with BCA Clause E3D9;
  - be provided with a fire service recall control switch in accordance with BCA Clause E3D11; and
  - be provided with a lift car fire service drive control switch in accordance with BCA Clause E3D12.

- Warning against use of lift in fire signage must be provided in accordance with BCA Clause E3D4.
- The new lift is not required to be an emergency lift since it serves a storey with an effective height of less than 25 m in accordance with BCA Clause E3D6.
- Lift details have not been provided at this stage; however, the common lift is capable of complying with the above requirements.

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

- Stormwater drainage is to be provided in accordance with BCA Clause F1D3 and AS/NZS 3500.3—2021.
- Exposed joints are to be provided in accordance with BCA Clause F1D4 and AS 4654.2—2012.
- External waterproofing membranes are to be provided in accordance with BCA2022 Clause F1D5, AS 4654.1—2012 and AS 4654.2—2012.
- Damp-proofing is to be provided in accordance with BCA Clause F1D7 for the new lift, unless the base of the lift shaft is adequately drained by gravitation or mechanical means.

3.11 ROOF AND WALL CLADDING – PART F3

- New metal sheet roofing is to be provided in accordance with BCA Clause F3D2 and AS 1562.1—2018.
- Precast concrete panels bounding the new lift shaft are not considered as a Deemed-to-Satisfy (DtS) external wall cladding type in accordance with BCA Clause F3D5. A Performance Solution will need to be prepared by a Façade Engineer that demonstrates compliance with Performance Requirement F3P1.

3.12 FACILITIES IN CLASS 3 TO 9 BUILDINGS – PART F4

The requirements of this Part are not applicable to the subject works since the proposed alterations—

- will not result in an increase to the peak occupancy load; and
- do include any alterations to existing sanitary facilities.

3.13 ROOM HEIGHTS – PART F5

Existing room heights will not be altered by the proposed works and the existing unobstructed heights around the new lift comply with BCA Clause F5D2.

3.14 LIGHT AND VENTILATION – PART F6

The light and ventilation requirements of BCA Part F6 do not apply to the lift. The lift car must be provided with artificial lighting and mechanical ventilation in accordance with BCA Specification 24.

3.15 OCCUPIABLE OUTDOOR AREAS – PART G6

The carpark on the Roof level is considered as an *occupiable outdoor area* and affected areas are capable of complying with the requirements of BCA Part G6.

3.16 ENERGY EFFICIENCY - SECTION J

BCA2022 Section J is a specialist area that addresses the building fabric, building sealing, mechanical ventilation, lighting and building management systems. Compliance with BCA2022 Section J generally requires detailed design by a combination of consultants which may include Energy consultants, Façade Engineers and Mechanical and electrical engineers. Given the specialist nature of BCA2022 Section J, and the need for design by other consultants, it is not within the scope of this report.

Annexures

Annexure A - Design Documentation

This report has been based on the following design documentation.

Table 2: Architectural plans

Architectural plans prepared by Fabrik Property			
Drawing Number	**Revision**	**Date**	**Title**
1230047_B1001	A	4/12/2024	Floor plan – Ground & L1
1230047_B1002	A	4/12/2024	Floor plan – Rooftop parking
1230047_B2001	A	4/12/2024	Lift plan & section details
1230047_B2002	A	4/12/2024	Lift elevation details

Table 3: Other documents

Other documents			
Document Number	**Revision**	**Date**	**Title**
-	-	16/12/2023	Annual Fire Safety Statement
S17202	1.1	28/08/2017	Fire Engineering Report by Olsson Fire & Risk consulting engineers
1652CCZ	-	1999	Stamped drawings by Warringah Council for the CC Certification

Annexure B - Essential Services

The following fire safety measures are in accordance with the current Annual Fire Safety Statement issued on 16/12/2023 and additional services that 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 4: Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Existing		
Base building		
1.	Alarm signalling equipment	AS 4428.3 and AS 1670.3
2.	Automatic fire detection & Alarm systems	AS 1670.1—1995
3.	Emergency lighting	**BCA E4.2 & E4.4** AS/NZS 2293.1—2005
4.	Exit signs	**BCA E4.5, NSW E4.6 & E4.8** AS/NZS 2293.1:2005
5.	Fire dampers	**Ordinance 70 Clause 22.13** AS 1682
6.	Fire doors	**Ordinance 70 Clause 22.7** AS 1905.1
7.	Fire hose reel system	**Ordinance 70 Clause 27.2 – Spec 10**
8.	Fire hydrant system	**Ordinance 70 Clause 27.3 – Spec 10**
9.	Fire seals protecting openings to fire resisting components of the building (protecting of cables etc through fire rated building elements)	**BCA C3.15** AS 1530.4, AS 4072.1 & installed in accordance with the tested systems / manufacturers specifications
10.	Path of travel	**EP&A Reg 2000 Cl. 186**
11.	Portable fire extinguishers	**BCA E1.6** AS 2444—2001
12.	Warning and operational signs	**LGA 93 Sect 655 & Ordinance 70 Clause 55.11**
Woolworths		
13.	Automatic fire detection & Alarm systems	Level 3 **BCA 2016 E2.2 and Specification E2.2a** AS 1670.1—2015 Performance Solution prepared by Olsson and Risk S17202, Revision 1.1, dated 28 August 2017 requiring the spacing of detection to the freezer and chilled produce areas to be reduced

Item	Essential Fire and Other Safety Measures	Standard of Performance
		to 7m spacings and with a maximum 3.5m from walls to Level 3
14.	Emergency lighting	Level 3 **BCA2016 E4.2 and ~~E4.8~~ E4.4** AS/NZS 2293.1:2005
15.	Exit signs	Level 3 **BCA2016 E4.4, E4.5, (NSW E4.6) and ~~E4.4~~ E4.8** AS/NZS 2293.1:2005
16.	Fire hose reel system	Level 3 **BCA 2016 ~~E4.4, E4.5, (NSW E4.6) and E4.4~~ E1.4** ~~AS/NZS 2293.1:2005~~ AS 2441
17.	Fire hydrant system	Level 3 **BCA 2016 ~~E1.4~~ E1.3** ~~AS 2444:2005~~ AS 2419.1
18.	Occupation warning system	**BCA 2016 E2.2, Spec E2.2a (Clause 6)** AS 1670.1
19.	Warning and operational signs	**BCA 2016 ~~C3.6~~, D2.23, D3.6, E3.3, Spec E1.8, Clause 183 of the EP&A Reg 2000**
20.	Fire Engineered Solution	Report prepared by Olsson and Risk Reference S17202, Revision 1.1, dated 28 August 2017
New works		
21.	Access to lift pits	**BCA2022 D2D22** (Access to Lift Pits)
22.	Automatic fire detection and alarm system	**BCA2016 E2.2** **BCA2016 Specification E2.2a** AS 1670.1—2015 **Note 1:** Subject to an exemption being sourced by the Fire Services Engineer under Section 74 of the *Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021*.
23.	Emergency lighting	**BCA2022 E4D2** **BCA2022 E4D4** AS/NZS 2293.1—2018
24.	Exit signs	**BCA2022 E4D5** (Exit Signs) **BCA2022 NSW E4D6** (Direction Signs) **BCA2022 E4D8** (Design and Operation - Exits) AS/NZS 2293.1—2018
25.	Fire hose reel system	**BCA2016 E1.4**

Item	Essential Fire and Other Safety Measures	Standard of Performance
		AS 2441—2005 **Note 1:** Subject to an exemption being sourced by the Fire Services Engineer under Section 74 of the *Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021*.
26.	Fire hydrant system	**BCA2016 E1.3** AS 2419.1—2005 **Note 1:** Subject to an exemption being sourced by the Fire Services Engineer under Section 74 of the *Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021*.
27.	Fire seals protecting openings in fire resisting components of the building - **TBC**	**BCA2022 C4D15** (Openings for service installations) **BCA2022 Specification 13** AS 1530.4—2014 AS 4072.1—2005
28.	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)
29.	Warning and operational signs	**BCA2022 E3D4** (Lift Signs)

Note 1: The current annual fire safety statement (AFSS) nominates the incorrect BCA and Australian Standards for the following fire safety measures serving the Woolworths tenancy, which need to be updated in line with the above:

+ Woolworths portion – fire hydrant system.
+ Woolworths potion – fire hose reel system.

Annexure C - Fire Resistance Levels

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

Type A Construction

Table 5: 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 5 & 7a	Class 6	Class 7b
Less than 1.5 m	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	120/90/90	180/180/180	240/240/180
3m, or more	120/60/30	180/120/90	240/180/90

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

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

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

Column Type	FRL (in minutes): Structural adequacy / Integrity / Insulation		
	Class 5 & 7a	Class 6	Class 7b
Loadbearing	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/-/-	-/-/-	-/-/-

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

Wall Type	FRL (in minutes): Structural adequacy / Integrity / Insulation		
	Class 5 & 7a	Class 6	Class 7b
Loadbearing or non-bearing	120/120/120	180/180/180	240/240/240

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

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

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

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

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

Building Element	FRL (in minutes): Structural adequacy / Integrity / Insulation		
	Class 5 & 7a	Class 6	Class 7b
Other loadbearing internal walls, internal beams, trusses and columns	120/-/-	180/-/-	240/-/-
Floors	120/120/120	180/180/180	240/240/240
Roofs	120/60/30	180/60/30	240/90/60

Note: Floors laid directly on the ground (e.g. slab-on-ground construction) are not required to achieve an FRL in accordance with BCA2022 Clause S5C12(a) of the BCA.

Annexure D - Definitions

Average specific extinction area

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

Critical radiant flux

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

Effective height

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

Envelope

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

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

Exit

Exit means –

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

Fire compartment

Fire compartment means –

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

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

Fire-resistance level (FRL)

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

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

and expressed in that order.

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

Fire-source feature

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

Fire wall

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

Flammability index

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

Group number

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

Loadbearing

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

Non-combustible

Non-combustible means—

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

Occupiable outdoor area

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

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

Open space

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

Performance Requirement

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

Performance Solution

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

Sarking-type material

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

Smoke developed index.

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

Smoke development rate

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

Smoke growth rate index

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

Sole-occupancy unit

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

1. a dwelling; or
2. a room or suite of rooms in a Class 3 building which includes sleeping facilities; or
3. a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or

4. a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

Annexure E - BCA Compliance Specification

The following BCA matters are to be addressed by 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. Building elements, including external walls and their components in buildings of Type A Construction, must be non-combustible in accordance with C2D10 of BCA2022.
3. 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.
4. 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.
5. 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.
6. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C4D6 of BCA2022.
7. The lift doors will be -/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C4D11 of BCA2022 (A fire-engineered performance solution is required to allow -/60/- fir door in lieu of -/60/30)
8. The top and bottom of the 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.
9. The number of exits provided to the building will be in accordance with Clause D2D3 of BCA2022.
10. The required exits will be fire-isolated in accordance with Clause D2D4 of BCA2022.
11. Travel distances to exits will be in accordance with Clause D2D5 of BCA2022 except where allowed by the Fire engineering Report.
12. The alternative exits will be distributed uniformly around the storey and will be not be less than 9m apart, and not more than 60m apart, in accordance with Clause D2D6 of BCA2022 where allowed by the Fire engineering Report.
13. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D2D7 to D2D11 of BCA2022.
14. Access to the lift pit will be in accordance with Clause D2D22 of BCA2022.
15. The doorways and doors will be in accordance with Clause D3D24 and D3D25 of BCA2022.
16. Door latching mechanisms will be in accordance with Clause D3D26 of BCA2022.
17. Signage will be provided on fire and smoke doors in accordance with Clause D3D28 of BCA2022.
18. External above ground waterproofing membranes will comply with Clause F1D5 of BCA2022 and AS 4654 Parts 1 & 2:2012.
19. The new roof covering will be in accordance with Clause F3D2 of BCA2022.

20. Essential fire or other safety measures must be maintained and certified on an ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2021.

Electrical Services Design Certification:

21. A smoke detection and alarm system will be installed throughout the building in accordance with E2D4 to E2D13, and Specification 20 of BCA2022.
22. Emergency lighting will be installed throughout the development in accordance with Clause E4D2, E4D4 of BCA2022 and AS/NZS 2293.1:2018.
23. Exit signage will be installed in accordance with Clause E4D5, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.

Hydraulic Services Design Certification:

24. Fire hydrant system is installed in accordance with the existing standard in the building.
25. Fire hose reels is installed in accordance with the existing standard in the building.

Structural Engineers Design Certification:

26. The material and forms of construction for the proposed works will be in accordance with Clause B1D3, B1D4 and B1D6 of BCA2022 as follows:
    a. Dead and Live Loads – AS/NZS 1170.1:2002
    b. Wind Loads – AS/NZS 1170.2:2011
    c. Earthquake actions – AS 1170.4:2007
    d. Masonry – AS 3700:2018
    e. Concrete Construction – AS 3600:2018
    f. Steel Construction AS 4100:1998
    g. Aluminium Construction – AS/NZS 1664.1 or 2:1997
    h. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
27. The lift shaft will have an FRL in accordance with Clause C3D11 and Specification 5 of BCA2022.

Lift Services Design Certification:

28. 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.
29. 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.
30. 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.
31. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3D12.
32. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification 24 of BCA2022.