



A Bureau Veritas Group Company

Regulatory Compliance Assessment Report

Mixed Use Development, 810 Pacific
Highway, Gordon NSW

Prepared for:

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1. Executive Summary

Development Overview

Project Description

This Building Code of Australia (BCA) assessment report has been prepared by McKenzie Group Consulting (NSW) Pty Ltd on behalf of Ecove Group Pty Ltd to accompany a State Significant Development Application (SSDA) (SSD-101444458) for a mixed-use development at 810 Pacific Highway, Gordon. The site is described as Lot 12 DP631351 and has a total area of 2,357m² and is located within the Gordon town centre, immediately north of the Gordon Centre and south of the Ku-ring-gai Council Chambers. The proposal delivers approximately 180 new dwellings (including affordable housing apartments), together with a full-line supermarket in a highly accessible location, contributing to both State and Council housing objectives while revitalising Gordon Town Centre.

The proposal is declared State Significant Development (SSD) pursuant to Schedule 1, section 26A of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP). SSD-101444458 seeks approval for an amending DA which proposes to amend DA-0610-17, except for the demolition, excavation, shoring and piling works, which are to proceed under the existing approval.

Background

Development consent (DA-0610/17) was issued on 12 December 2018 by the Sydney North Planning Panel for the demolition of existing buildings and the construction of a mixed-use development on the subject site. The approved scheme provided for:

- 56 apartments in a shop-top housing format, comprising a mix of one, two and three-bedroom dwellings.
- An Aldi supermarket and a small retail tenancy at ground floor level, supported by storage, loading and back-of-house facilities at the lower ground level.
- Three basement levels containing 142 car parking spaces for residents, visitors, and retail customers.
- Associated landscaping, signage, earthworks and tree removal, including the relocation of a Canary Island Date Palm.

The consent was issued as a Deferred Commencement Approval, subject to the satisfaction of several preconditions. The consent was subsequently modified on three occasions:

- MOD0222/20 (21 September 2021)
- MOD0194/21 (18 November 2021)
- MOD0061/25 (13 November 2025)

These modifications collectively removed the deferred commencement condition, amended the development description, and incorporated an amended construction traffic management plan into the approved documentation. MOD0061/25 approved the increased depth of excavation, realigned basement walls in the northeast corner and modified conditions relating to the issue of construction certificates to allow preliminary basement excavation to occur independently. This SSDA will amend the existing Development Consent and associated modifications. Notwithstanding, preliminary works are proposed to proceed under the current consent to meet Aldi's contractual requirement to be established and operating on the site by 2028.

Planning Context

The planning context for the site has evolved significantly since the original consent was issued. In April 2024, the Department of Planning, Housing and Infrastructure (DPHI) identified the site as being located within a Transport Oriented Development (TOD) precinct. In parallel, Ku-ring-gai Council progressed a preferred planning framework for Gordon Town Centre, including proposed amendments to the Ku-ring-gai Local Environmental Plan 2015 (KLEP 2015). Following a Council-initiated legal process, legislative amendments removed access to TOD uplift for proposals that had not been submitted in June 2025. As part of the resolution of this legal process, Council formally endorsed its preferred planning framework for Gordon Town Centre on 5 June 2025. That framework was subsequently accepted by the Department, with minor amendments, and implemented through an amendment to the KLEP 2015 via the State Environmental Planning Policy Amendment (Ku-ring-gai Station Precincts) 2025, which commenced on 14 November 2025.

The proposed development responds to the amended KLEP 2015 and, in addition, seeks to utilise the floor space ratio and height incentives available under Chapter 2, Part 2, Division 1 of the State Environmental Planning Policy (Housing) 2021.

Compliance Summary

As Registered Certifiers, we have reviewed the P2 issue architectural design documents prepared by PDB Architecture (refer to Appendix A) for compliance with the prescriptive deemed-to-satisfy (DTS) provisions of the National Construction Code (NCC), BCA Volume 1, contained within the National Construction Code (NCC) 2022 Amendment 2.

It is noted that NCC 2025 edition may be applicable to the project depending on the timing of the application for a Construction Certificate for the entrance floor of the development. Current media releases from the Australian Building Codes Board (ABCB) indicate an implementation date of 1 May 2026 may be likely.

This report has been prepared to assess the project against the BCA 2022 to enable issuance of development consent and construction certificates under the *Environmental Planning and Assessment Act 1979*. This report is not a check for full compliance, and further assessment of the design will be undertaken as the design develops to ensure compliance is achieved prior to any relevant approval being issued.

Deviations from the Deemed-to-Satisfy Provisions

The assessment of the SSDA submission issue design documentation has revealed that the following areas deviate from the DTS provisions of the BCA. These items are to be addressed to ensure compliance is achieved, either through design amendment to achieve compliance with the DTS provisions, or through a performance solution demonstrating compliance with the relevant Performance Requirements of the BCA:

No.	Description	DTS Clause	Performance Requirements
Fire Safety Items			
1	Storage areas stated as >10% of Basement Level 06 and a performance solution proposed.	C3D9, Spec 5	C1P1, C1P2
2	Public corridor lengths on the residential levels appear to be >40m in aggregate. Smoke walls and doors are required to satisfy C3D15, or a performance solution is required to be developed.	C3D15	C1P2, D1P6, E2P2
3	For the use of any curtain wall system where the floor Fire Resistance Level does not continue to the outer leaf, then a performance solution is required to assess any cavity at the perimeter slab edge.	C2D2	C1P2, C1P8
4	The Level 28 services area is provided with a single exit. A performance solution is required.	D2D3	D1P4
5	Headroom in Basement 1. Exit travel paths are to have 2m min head height under D2D7.	D2D7	D1P6
6	Aldi lobby is >20m from a single exit, noting that egress cannot be considered as available from this area to the warehouse portion of the tenancy due to the roller shutter that divides lobby from warehouse.	D2D5	D1P2

No.	Description	DTS Clause	Performance Requirements
7	Level 2 to Level 26 are served by FS 4 and FS 5 which appear to be within 9m of each other.	D2D6	D1P4, D1P6
	Aldi Lower Warehouse includes a distance between alternative exits of 64m in lieu of the prescribed 60m.		
8	Aldi closest exit is ~44m in lieu of the prescribed 40m.	D2D5	D1P4, E2P2
	Level 1 to Level 14 appear to have an extended travel distance from residential front entry door to the closest exit of ~14m in lieu of the prescribed 6m.		
	Level 2 appears to have a travel distance of ~35m in lieu of the prescribed 20m to an exit from an occupiable outdoor area.		
	Level 15 to Level 23 appear to have an extended travel distance from residential front entry door to the closest exit of ~9m in lieu of the prescribed 6m.		
	Level 24 appears to have a travel distance of ~30m in lieu of the prescribed 20m to a point of choice to travel to two different exits located in two alternative directions.		
	Level 25 appears to have a travel distance of ~9m in lieu of the prescribed 6m in lieu of the prescribed 6m.		
9	Fire hydrant coverage to Basement 1 appears to be inconsistent with AS 2419.1 coverage requirements of 40m to all areas.	E1D2	E1P3
10	The fire hydrant booster assembly does not appear to be visible from the same façade as the main building entrance.	E1D2	E1P3
11	Fire hose reels are illustrated further than 4m from a storey exit on the Loading Dock storey.	E1D3	E1P1
12	Internal fire hydrant illustrated further than 4m from a storey exit on the Loading Dock storey.	E1D2	E1P3
13	The fire control room does not appear to have a door from the front entrance and another direct from a public place or a fire isolated passageway connected to a public place.	E1D15	E1P6
14	Solar panel installation and Electric Vehicle provisions are typically deemed by Fire and Rescue NSW as requiring fire engineering assessment.	E2D17, E2D21	C1P2, C1P6, C1P8
Miscellaneous Items			
15	Weatherproofing of External Walls If the external walls are proposed to be constructed of a material not nominated in F3D5, a performance solution is to be provided by the façade engineer/registered architect demonstrating that the external walls comply with the requirements of Performance Requirement F3P1.	F3D5	F3P1

The feasibility of, and any requirements applicable to a performance solution will need to be confirmed by the professional preparing the solution, who must be capable of demonstrating they are suitably qualified/accredited to develop such design proposals.

Fire Safety Services

The following key fire safety services and essential fire safety measures are required to meet the minimum DTS provisions.

1.	Access panels, doors and hoppers to fire-resisting shafts.
2.	Automatic fail-safe devices.
3.	Automatic fire suppression system (sprinkler system).
4.	Automatic fire detection and alarm system.
5.	Emergency lifts.
6.	Emergency lighting.
7.	Emergency Warning and Intercom System (EWIS).
8.	Exit signs throughout, including illuminated exit signs in non-residential levels and illuminated directional exit signs.
9.	Fire control centres and rooms.
10.	Fire dampers.
11.	Fire doors.
12.	Fire hose reels throughout the car park basement, retail, gym areas.
13.	Fire hydrant system throughout.
14.	Fire precautions during construction (to be achieved by the contractor during the construction phase).
15.	Fire seals protecting openings in fire-resisting components of the building (fire stopping).
16.	Lightweight construction.
17.	Mechanical air handling system (automatic air pressurisation throughout the fire isolated exits).
18.	Mechanical air handling system (automatic shutdown of any air-handling system (other than miscellaneous exhaust air systems installed in accordance with S.5 & 6 of AS 1668.1) not forming part of a smoke hazard management system).
19.	Mechanical air handling system (car park ventilation systems must comply with Clause 5.5 of AS/NZS 1668.1-2015 except that fans with metal blades suitable for operation at normal temperature may be used and the electrical power and control cabling need not be fire rated).
20.	Portable fire extinguishers throughout.
21.	Smoke dampers, should there be mechanical air handling systems serving multiple smoke/ fire compartments.
22.	Smoke detectors and heat detectors.
23.	Smoke doors.
24.	Wall-wetting sprinkler and drencher systems.
25.	Warning and operational signs.

Refer to parts 9 and 10 of this report for further details regarding the required services and equipment.

Any fire engineered solution will need to be approved after consultation with FRNSW as part of the Construction Certificate process.

Further Assessment

The assessment of the schematic design documentation has also revealed that the following additional information is required in order to complete the assessment, and/or the following areas need to be further reviewed.

No.	Further Information / Review Required
1.	Details of any e-vehicle charging points and storage (e.g., e-bikes and e-cars) are to be provided. Fire and Rescue NSW (FRNSW) consider such vehicles a significant fire safety hazard and request information is provided for their review. It is recommended details are included within a Fire Engineering Brief Questionnaire (FEBQ).
2.	Details of AS 2890.6 design compliance for the accessible car bay. This requires a shared space adjacent to the car space which may affect the current parking layout.
3.	AS 3000 design requirements are not covered within the BCA, though this standard is mandated in NSW. The main switchboard room (MSB) design requires electrical design engineer input, noting that the MSB may require two exits to achieve AS 3000 compliance.
4.	Fire Stair 4 and 5 appear to be designed in a scissor stair configuration. Stair separation details are expected to be further detailed as the design progresses.
5.	Fire Indicator Panel (FIP) location to be illustrated. This is to be within the main entrance lobby of the building and form part of a fire control centre, designed to Specification 19 design requirements.
6.	Further details to illustrate the connection of the Communal Open Space on Level 1 with the road and the available egress paths to calculate travel distances achieved.
7.	Further details of the Aldi warehouse arrangements, including any fire separation and/ or compartmentation of this area being a BCA class 7b storage use, from the adjacent areas.
8.	Door and window schedule to be provided. Window details should demonstrate the aggregate light transmitting area is min 10% of the floor area of the habitable rooms they serve. Window cleaning design details are required for upper levels. Fire rating, protection of openings and associated hardware details, signage details are to be provided.
9.	Stair details and any other internal or external changes in level are required to be detailed.
10.	Detailed sections and elevations illustrating the finished ground level to ascertain the correct effective height of the building. It is noted that this appears to be >50m in effective height.
11.	Acoustic report and details of (inter alia) discontinuous construction.
12.	Section J report, noting that in NSW, non-class 2 areas are subject to Section J.
13.	Compartmentation plans outlining the Fire Resistance Levels (FRLs) and separation achieved.
14.	Full architectural, services, structural 'For Construction' issue regulated design documentation and design compliance declarations are required at the Construction Certificate stage by each regulated designer. This is to accord to the <i>Design and Building Practitioners Act 2020</i>. Reference is made to the Design Practitioner's Handbook: https://www.fairtrading.nsw.gov.au/data/assets/pdf_file/0006/1188816/Design-practitioners-handbook-final.pdf

	Regulated designers include: • Architectural / building design • Structural • Façade • Geotechnical • Vertical transportation • Mechanical • Mechanical or fire systems – mechanical smoke control • Fire safety engineer • Fire safety systems • Drainage • Electrical.
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Documentation to enable assessment and demonstrate compliance will be required to address the above items prior to approval.

The application for a Construction Certificate (CC) shall be assessed in accordance with the *Environmental Planning & Assessment Act 1979* (as amended) and the *Environmental Planning & Assessment (Development Certification and Fire Safety) Regulation 2021*.

2. Introduction

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The proposed development responds to the amended KLEP 2015 and, in addition, seeks to utilise the floor space ratio and height incentives available under Chapter 2, Part 2, Division 1 of the State Environmental Planning Policy (Housing) 2021.

This report is based upon the review of the design documentation listed in Appendix A of this report.

The report is intended as an overview of the relevant DTS provisions of the BCA, with a detailed assessment to be undertaken upon receipt of detailed design documentation.

The applicable legislation governing the design of buildings is the *Environmental Planning and Assessment Act 1979*. This Act requires that all new building works must be designed to comply with the BCA.

The version of the BCA applicable to the development, is version that in place at the time of the application to the Registered Certifier for the CC. For the purposes of this report, BCA 2022 has been utilised.

3. Compliance with the Building Code of Australia

The NCC is a performance based document, whereby compliance is achieved by satisfying the mandatory Governing Requirements and Performance Requirements.

Performance Requirements are satisfied by one of the following:

- 1) A Performance Solution
- 2) A Deemed-to-Satisfy Solution
- 3) A combination of (1) and (2)

4. Documentation of Performance Solutions

A Performance Solution must demonstrate compliance with all relevant Performance Requirements, or the solution must be at least equivalent to the Deemed-to-Satisfy (DTS) provisions.

Compliance with the Performance Requirements is to be demonstrated through one or a combination of the following:

- a) Evidence of suitability in accordance with Part A5 of the BCA that shows the use of a material, product, plumbing and drainage product, form of construction or design meets the relevant Performance Requirements.
- b) A Verification Method including the following:
 - i. The Verification Methods provided in the NCC.
 - ii. Other Verification Methods, accepted by the appropriate authority that show compliance with the relevant Performance Requirements
- c) Expert Judgement
- d) Comparison with the DTS provisions

Where a Performance Solution is proposed as the method to achieve compliance, the following steps must be undertaken:

- a) Prepare a performance-based design brief in consultation with relevant stakeholders
- b) Carry out analysis, using one or more of the assessment methods nominated above, as proposed by the performance-based design brief.
- c) Evaluate results from (b) against the acceptance criteria in the performance-based design brief
- d) Prepare a final report that includes:
 - i. All Performance Requirements and/or DTS provisions identified as applicable
 - ii. Identification of all assessment methods used
 - iii. Details of required steps above
 - iv. Confirmation that the Performance Requirement has been met; and
 - v. Details of conditions or limitations, if an exist, regarding the Performance Solution.

5. Preliminaries

Building Assessment Data

Summary of construction requirements:

Part of Project	Sydney Kensington Development
Building Classification	2 (residential SOUs), 6 (retail), 7a (car park), 7b (storage), 9b (gym)
Number of Storeys Contained	35
Rise in Storeys	28 (measured from Basement Level 1 to Level 26 floor slab)
Type of Construction	A
Effective Height (m)	>50m

Note: The effective height of the project includes all stories included in the rise in storeys of the project.

Development Consent

A development consent will be required from the relevant planning approval authority for the development. A copy of the development consent conditions and approved drawings will be required prior to the issuing of the Construction Certificate for that component of works.

The proposed development must be consistent with the development consent's endorsed drawings and relevant conditions, which may require additional information to demonstrate the Construction Certificate documentation

achieves this. All conditions required to be satisfied prior to commencement of works must be met prior to the issue of a Construction Certificate.

6. Structure

Structural Provisions (BCA B1):

New structural works are to comply with the applicable requirements of BCA Part B1, including AS/NZS 1170.0-2002, AS/NZS 1170-1-2002, AS/NZS 1170.2-2021 and AS 1170.4-2007.

The non structural elements of the building, including partitions (and non-structural fire walls), ceilings, services and racking/shelving may be required to comply with the seismic restraint requirements of AS 1170.4-2007. Where this is required, certification will be required confirming that the design of the seismic restraints comply with AS 1170.4-2002. This may be provided by a specialist seismic consultant or by the architect and services design engineers.

The building has been determined as an Importance Level 3 building.

The facade designer is to ensure the design of any curtain walls considers compliance with AS 1170.4-2002 section 8.

Glazing is to comply with AS 1288-2021, and AS 2047-2014.

Prior to the issue of the Construction Certificate, structural certification is required to be provided by a Professional Engineer registered on the National Engineering Register and registered under the *Design and Building Practitioners Act 2020*.

7. Fire Protection

Fire Compartmentation (BCA C2D2)

The BCA's prescriptive DTS provisions categorise buildings into three separate levels (or 'types') of fire-resistant construction, which is based upon the rise in storeys and classification of the building.

Based upon the rise in storeys and use of the building, it is required to be constructed in accordance with the requirements of type A Construction, in accordance with Tables S5C11a-g of BCA Specification 5 (refer to Appendix B for Table S5 extracts).

The maximum floor area and volume limitations for a fire compartment are set as per BCA Table C3D3. Fire compartmentation of a building is achieved through the construction of horizontal and vertical plane fire walls achieving the Fire Resistance Level (FRL) specified in BCA Specification 5 relevant to building class and type. Where a fire wall is proposed, it is to achieve a structural fire rating regardless of whether it is loadbearing or not.

The maximum floor area and volume limitations of a fire compartment of each type of construction for each class is as follows:

Classification		Type of Construction
		A
5, 9b or 9c aged care building	max floor area—	8 000 m ²
	max volume—	48 000 m ³
6, 7, 8 or 9a (except for patient care areas)	max floor area—	5 000 m ²
	max volume—	30 000 m ³

Note: The above floor area limitations do not apply to

- Car park compartments protected with a Specification 17 sprinkler system (other than a FPAA101D or FPAA101H system),
- Open-deck car parks,
- Class 2, 3, 4 fire compartments.

The building has been assessed based on fire compartmentation within the development being achieved through construction of building elements achieving the below Fire Resistance Levels (FRLs), as listed in Specification 5:

- Fire compartmentation between the Basement levels (car park) and Loading Dock level of 120 minutes,
- Fire compartmentation between Loading Dock level (mixed use including Aldi Warehouse) and Ground level of 240 minutes,
- Fire compartmentation between Ground storey level (mixed use including Aldi Warehouse) and Level 1 storey of 240 minutes,
- Fire compartmentation between Level 1 storey (mixed use including gym) and Level 2 storey of 120 minutes,
- Fire compartmentation between each residential level (e.g., between Level 2 and above) of 90 minutes.

The FRLs are to be determined in accordance with BCA Specification 1. This requires:

- Calculation by a structural engineer for steel, composite, concrete, timber, masonry construction,
- Designing to the listed building elements within the Tables of S1Ca-S1Cn,
- Designing building elements that are identical with a prototype that has undergone AS 1530.4 testing to achieve the required FRL in accordance with S1C2(b),
- Designing building elements that differ to a minor degree with a prototype that has undergone AS 1530.4 testing to achieve the required FRL in accordance with S1C2(b), and an Accredited Testing Laboratory (NATA accredited, or mutually recognised (if from overseas)) has assessed and certified the building element as achieving the required FRL,
- Calculation by a structural engineer for a prototype as reported in accordance with S1C3,
- For fire protected timber, the building element complies with BCA Specification 10 where applicable.

Evidence is required to demonstrate how each building achieves an FRL, and this information should be included within the Construction Certificate application.

Fire Resistance (BCA C2D2)

Additional to the fire compartmentation of the building, the BCA's DTS provisions also require separation of certain areas through fire rated construction due to their sensitive nature:

- Lift Motor Rooms,
- MSBs sustaining power to emergency equipment,
- Electrical substations within a building,
- Batteries with a total voltage of 12 volts or more and a storage capacity of 200 kWh or more,

The above areas are to be separated from the remainder of the building by elements achieving a FRL of 120/120/120min.

Residential SOUs are required to be fire separated from each other and any other areas through bounding construction requirements of BCA Specification 5:

- 90/90/90min FRL for loadbearing internal walls,
- -/60/60min FRL for non-loadbearing internal walls.

Fire isolated stairs, passageways, ramps, lifts and shafts (apart from shafts used for the discharge of hot products of combustion) are also required to be fire rated.

The garbage chute that is illustrated within this development and any other shafts will require documentation to demonstrate the relevant FRL is achieved.

External walls of the development are to be fire rated according to the set back distance from a 'fire source feature', which is defined under the BCA as:

Any one or more of the following:

- *The far boundary of a road, river, lake or the like adjoining the allotment.*
- *A side or rear boundary of the allotment.*
- *An external wall of another building on the allotment which is not a Class 10 building.*

Refer to Appendix B for Table 5 extracts.

Non-Combustible Building Elements and Ancillary Elements (BCA C2D10 and C2D14)

External Wall Cladding

Since the building is of type A construction, the following components are required to be completely non-combustible:

- External walls and common walls, including façade coverings, framing, insulation;
- Flooring and floor framing of lift pits;
- Non-loadbearing internal walls required to have an FRL;
- All non-loadbearing shafts;
- All loadbearing internal walls and loadbearing fire walls, including those that are part of loadbearing shafts.

For materials and assemblies that are required to be non-combustible, details of testing in accordance with AS 1530.1-1994 are to be provided.

Combustible Materials

The following materials, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required:

- a) Plasterboard.
- b) Perforated gypsum lath with a normal paper finish.
- c) Fibrous-plaster sheet.
- d) Fibre-reinforced cement sheeting.
- e) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.
- f) Sarking type materials that do not exceed 1mm in thickness and have a Flammability Index not greater than 5.
- g) Bonded laminated materials where -
 - (i) each laminate is non-combustible; and
 - (ii) each adhesive layer does not exceed 1 mm in thickness; and
 - (iii) the total thickness of the adhesive layers does not exceed 2 mm; and
 - (iv) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole does not exceed 0 and 3 respectively.

The following are also exempted from combustibility criteria:

- a) glazing, fixings, packers, paints, sealants to joints, adhesives and the like.
- b) concrete, steel, masonry, aluminium, autoclaved aerated concrete, iron, terracotta, porcelain, ceramic, natural stone, copper, zinc, lead, bronze, brass.

Any Aluminium Composite Panels (ACP) must be labelled in accordance with SA TS 5344.

The BCA nominates that ancillary elements may not be fixed to an external wall that is required to be non-combustible unless they comprise of the following:

- a) An ancillary element that is non-combustible.
- b) A gutter, downpipe or other plumbing fixture or fitting.
- c) A flashing.
- d) A grate or grille not more than 2 m² in area associated with a building service.
- e) An electrical switch, socket-outlet, cover plate or the like.
- f) A light fitting.
- g) A required sign.
- h) A sign other than one provided under (a) or (g) that—
 - i) achieves a group number of 1 or 2; and
 - ii) does not extend beyond one storey; and
 - iii) does not extend beyond one fire compartment; and
 - iv) is separated vertically from other signs permitted under (h) by at least 2 storeys.
- i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that—
 - i) meets the relevant requirements of Table S7C7 as for an internal element; and
 - ii) serves a storey—
 - A. at ground level; or
 - B. immediately above a storey at ground level; and
 - iii) does not serve an exit, where it would render the exit unusable in a fire.
- j) A part of a security, intercom or announcement system.
- k) Wiring.
- l) Waterproofing material installed in accordance with AS 4654.2 and applied to an adjacent floor surface, including vertical upturn, or a roof surface.
- m) Collars, sleeves and insulation associated with service installations.
- n) Screens applied to vents, weepholes and gaps complying with AS 3959.
- o) Wiper and brush seals associated with doors, windows or other openings.
- p) A gasket, caulking, sealant or adhesive directly associated with (a) to (o)

Please provide fire hazard properties reports for any proposed signs and confirm their extent i.e., not spanning more than one storey or fire compartment.

Details of systems used in external wall and façade system to be provided to evidence non-combustibility with application for construction certificate.

Fire Hazard Properties (BCA C2D11)

The fire hazard properties of fixed surface linings and mechanical ductwork will also need to be addressed within the detailed documentation phase pursuant to BCA Specification 7. The following requirements apply:

Sprinkler Protected Areas

Floor Coverings – Critical radiant Flux not less than the below:

Class of building	Building not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17	Building fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17	Fire-isolated exits and fire control rooms
Class 2, 3, 5, 6, 7, 8 or 9.	2.2 kW/m ²	1.2 kW/m ²	2.2 kW/m ²

Wall and Ceiling Linings – Material group numbers not less than below:

Class of building	Fire-isolated exits and fire control rooms	Public corridors	Specific areas	Other areas
Class 2 or 3 unsprinklered	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 2 or 3 sprinklered	Walls: 1	Walls: 1, 2, 3	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 5, 6, 7 unsprinklered	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2	Ceilings: 1, 2, 3
Class 5, 6, 7 sprinklered	Walls: 1	Walls: 1, 2, 3	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 9b unsprinklered	Walls: 1	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3
Class 9b sprinklered	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3

Table Notes

- (1) 'Sprinklered' means a building fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17.
- (2) 'Specific areas' means within—
 - (i) for Class 2 and 3 buildings, a *sole-occupancy unit*; and
 - (ii) for Class 5 buildings, open plan offices with a minimum floor dimension/floor to ceiling height ratio > 5; and
 - (iii) for Class 6 buildings, shops or other building with a minimum floor dimension/floor to ceiling height ratio > 5; and

(iv) for Class 9b theatres and halls, etc., an auditorium.

Materials and assemblies not included in S7C3, S7C4, S7C5 or S7C6 must not exceed the indices set out in Table S7C7.

Material or assembly location	Flammability Index	Spread-of-Flame Index	Smoke-Developed Index
Fire control rooms subject to Specification 19 and fire-isolated <i>exits</i> , other than a <i>sarking-type material</i> used in a ceiling or used as an attachment or part of an attachment to a building element. ^{Note 1}	N/A	0	2
Class 9b buildings used as a theatre, public hall or the like: Any part of fixed seating in the audience area or auditorium.	N/A	0	5
<i>Sarking-type materials</i> : In a fire control room subject to Specification 19 or a fire-isolated <i>exit</i> or fire control room used in the form of an exposed wall or ceiling.	0	N/A	N/A
<i>Sarking-type materials</i> : In other locations. ^{Note 2}	5	N/A	N/A
Other materials or locations and insulation materials other than <i>sarking-type material</i> . ^{Notes 2 and 3}	N/A	9	8 if the <i>Spread-of-Flame Index</i> is more than 5

Table Notes

- (1) In a fire control room or *fire-isolated stairway*, a material used as an attachment or part of an attachment to a building element must, if *combustible*, be attached directly to a *non-combustible* substrate and not exceed 1 mm finished thickness.
- (2) A material, other than one located within a fire-isolated *exit* or fire control room, may be covered on all faces by concrete or masonry not less than 50 mm thick, as an alternative to meeting the specified indices.
- (3) In the case of a composite member or assembly, the member or assembly must be constructed so that when assembled as proposed in a building—
 - (a) any material which does not comply with this Table is protected on all sides and edges from exposure to the air; and
 - (b) the member or assembly, when tested in accordance with Specification 3, has *Spread-of-Flame Index* and *Smoke-Developed Index* not exceeding those prescribed in this Table; and
 - (c) the member or assembly retains the protection in position so that it prevents ignition of the material and continues to screen it from access to free air for a period of not less than 10 minutes.

Rigid and flexible air handling ductwork must comply with AS 4254.1-2021 and AS 4254.2-2012.

Floor linings and floor coverings used in lift cars must have a critical radiant flux not less than 2.2, and wall and ceiling linings must be a Material Group No. 1 or 2.

Material details are required as the design progresses and fire test details should be provided with the Construction Certificate application.

Public Corridors: Class 2 and 3 Buildings (BCA C3D15)

Public corridors exceeding 40m in length are required to be divided into intervals of not more than 40m by smoke proof walls complying with S11C2 and have smoke doors installed to BCA Specification 12.

Residential levels appear to exceed 40m aggregate corridor lengths; smoke walls and doors are required, or a performance solution is required to be developed by a Registered Certifier-fire safety.

Protection of Openings in External Walls (BCA C4D3, C4D4, C4D5)

The prescriptive DTS provisions of the BCA stipulate that any external wall opening within 3m of a neighbouring lot boundary, within 6m of the far boundary of a road, river, lake or the like that adjoins the lot, or within 6m of another building on the lot that is not BCA class 10 requires protection. Such protection can be achieved through the methods stated under C4D5 and if drenchers are used, these are to be externally located.

Details of any openings within the external walls where within 3m of a neighbouring boundary are to be provided as the design progresses.

Protection of Openings in Fire Rated Building Elements (BCA C4D6, C4D10, C4D11, C4D15)

The prescriptive DTS provisions of the BCA stipulate that openings within building elements required to have an FRL shall be protected as follows:

- a) Penetrations through fire rated floors to be protected either by a tested prototype (e.g. fire collar, fire damper, etc) or be installed within a fire rated shaft achieving an FRL the same as the FRL of the floor it is passing through;
- b) Any penetration through a wall or room required to have an FRL (e.g. substation, boiler room, apartment separating wall etc) is to be protected either by a tested prototype (e.g. fire collar, fire damper, etc) or be installed within a shaft achieving an FRL the same as the FRL of the floor it is passing through; (or 120/120/120 where it is a room such as a substation);
- c) Self-closing -/60/30 fire doors to doors opening leading into fire isolated stairs and passageways (note that this also includes the access doors to the condenser units on the plant platforms).

Note that where fire dampers, fire collars, etc. are utilised, allowance needs to be made for access hatches to be provided within the walls / ceilings to ensure that maintenance access is provided.

As the design develops, details will need to be included in relation to sealing of penetrations/ construction of fire rated shafts.

8. Access and Egress

Provision for Escape (BCA D2)

The egress provisions for the proposed building are provided by the following:

- Fire isolated stairways
- External doors.

Detailing issues that will need to be addressed as the design develops include:

- Door hardware including door latching mechanism
- Stair construction
- Handrail and balustrade construction
- Details of separation of rising and descending stairs
- Discharge from fire isolated exits
- Details of the egress provisions to the road.
- Door swing direction.

Travel via Fire Isolated Exits (BCA D2D12)

The BCA requires each fire isolated stairway to provide independent egress from each storey served and discharge directly, or by way of its own fire isolated passageway to:

- A road or open space; or
- To a point in a storey within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter, and an unimpeded path of travel not more than 20m to a road or open space; or
- A covered area that adjoins a road or open space, is open for at least 1/3 of its perimeter, has an unobstructed clear height throughout of not less than 3m, and provides an unimpeded path of travel to a road or open space of not less than 6m.

FS 4 and FS 5 discharge adjacent to the residential entry. Any openings within 6m of the travel path from the fire stair discharge point to the road require protection (e.g., drenchers).

Further details are required as the design progresses.

Fire Stair Re-Entry (BCA D3D27)

The doors of a fire isolated exit must not be locked from the inside so as to allow provision for fire stair re-entry within fire isolated exits serving any storey above any effective height of 25m.

The requirement for doors to remain unlocked do not apply to a door fitted with a fail-safe device that automatically unlocks the door upon activation of a fire alarm and –

- a) On at least every fourth storey the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or
- b) An intercommunication system, or an audible or visual alarm system operated from within the enclosure is provided, and a sign is fixed adjacent to such doors explaining its purpose and method of operation.

Details are to be provided within the Construction Certificate application.

Separation of Rising and Descending Stair Flights (BCA D3D5)

A required fire isolated stair must be constructed so that there is no direct connection between a flight rising from a storey below the lowest level of access to a road or open space and a flight descending from a storey above that level.

Any construction that separates or is common to the rising and descending flights must be:

- i. Non-combustible; and
- ii. Smoke proof in accordance with BCA S11C2.

Details are to be provided within the Construction Certificate application.

Exit Travel Distances and Distances Between Alternative Exits (BCA D2D5, D2D6)

The locations of the proposed exits would appear to indicate that the deemed to satisfy requirements in terms of travel distances, distances between alternative exits would not be satisfied.

The travel distances to exits should not exceed:

Class 5 to 9

- no point on the floor must be more than 20m to a single exit or point of choice and where two exits are provided, a maximum of 40m to one of those exits; and
- exits shall be located to not be more than 60m apart and not closer than 9m

Class 2 & 3

- 6m from an exit or from a point of choice from the entrance doorway of a sole occupancy unit
- 20m from a single exit at the level of egress to a road or open space
- Alternate exits not more than 45m apart

The locations of the proposed exits indicate that the travel distances within the building are as follows:

Travel distances on residential levels exceed prescriptive limitations:

- Aldi lobby is >20m from a single exit, noting that egress cannot be considered as available from this area to the warehouse portion of the tenancy due to the roller shutter that divides lobby from warehouse.
- Level 2 to Level 26 are served by FS 4 and FS 5 which appear to be within 9m of each other.
- Aldi Lower Warehouse includes a distance between alternative exits of 64m in lieu of the prescribed 60m.
- Aldi closest exit is ~44m in lieu of the prescribed 40m.
- Level 1 to Level 14 appear to have an extended travel distance from residential front entry door to the closest exit of ~14m in lieu of the prescribed 6m.
- Level 2 appears to have a travel distance of ~35m in lieu of the prescribed 20m to an exit from an occupiable outdoor area.
- Level 15 to Level 23 appear to have an extended travel distance from residential front entry door to the closest exit of ~9m in lieu of the prescribed 6m.
- Level 24 appears to have a travel distance of ~30m in lieu of the prescribed 20m to a point of choice to travel to two different exits located in two alternative directions.
- Level 25 appears to have a travel distance of ~9m in lieu of the prescribed 6m in lieu of the prescribed 6m.

Either redesign to reduce travel distances to within DTS limitations, or a performance solution is required to be developed by a Registered Certifier-fire safety.

Dimensions of Exits (BCA D2D7, D2D8, D2D9, D2D10, D2D11)

Minimum dimensions of 1m (width) and 2m (height) to be provided within the paths of travel to exits, to permit a population up to 100 people.

Doorways are permitted to contain a clear opening width of the required width of the exit minus 250mm, with a height of 1,980mm as part of egress requirements. Access for persons with disabilities however requires a clear doorway opening width of 850mm (i.e. minimum 920 mm doors).

Egress path widths appear to be <1m within the hydrant/ sprinkler room. It is noted that ladders within plant areas are permitted to be <1m where designed to AS 1657.

Balustrades and Handrails (BCA D3D17, D3D18, D3D19, D3D20, D3D22, D3D29)

Generally

Balustrading to a minimum height of 1m with a maximum opening of 124mm in any direction should be provided adjacent to balconies, landings, corridors etc where located adjacent to a change in level exceeding 1m, or where it is possible to fall through an openable window located more than 4m above the surface beneath.

Where it is possible to fall more than 4m to the surface below, the balustrade shall not contain any horizontal or near horizontal members that facilitate climbing between 150 – 760mm above the floor. It is noted that these provisions also apply to any building elements, including AC covers and the like, that are within 1m of the required balustrade.

Where a required barrier is fixed to the vertical face forming an edge of a landing, balcony, deck, stairway or the like, the opening formed between the barrier and the face must not exceed 40 mm.

Handrails should generally be provided at a minimum height of 865mm alongside of all ramps and stairs.

The public stairs and ramps located along an accessible path of travel should be designed in accordance with the requirements of AS 1428.1 for persons with disabilities. This requires a handrail on each side of the stair and ramp and for the handrail to extend approximately 550mm – 600mm past the last tread / end of ramp.

Fire Isolated Stairways & Class 7b/8 Buildings

Balustrades in the fire isolated stairways are permitted to contain a 3 rail system, with a bottom rail situated at not more than 150mm above the nosings. The distance between the rails shall not exceed 460mm.

Handrails are required on both sides of all stairways except for fire isolated stairways used only for emergency egress purposes.

Note: in a required exit serving an area required to be accessible, handrails must be designed and constructed to comply with Clause 12 of AS 1428.1-2021.

Openable Windows in Bedrooms & Early Childhood Centres

In bedrooms of Class 2 and 3 buildings, and Class 9b early childhood centres, where the distance from the floor level to the level below exceeds 2m, window openings shall be provided with protection.

Where the lowest part of the window opening is less than 1.7m above a floor, the window opening must be:

- a) Fitted with a device to restrict the opening; or
- b) Fitted with a screen with secure fittings

The device or screen required must –

- a) Not permit a 125mm sphere to pass through it; and
- b) Resist an outward horizontal action of 250N; and
- c) Have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.

Further review will be undertaken to ensure compliance as the design develops.

Slip Resistance (BCA D3D15)

Slip resistance of stairway treads and ramp surfaces are to comply with the following requirements:

Table D3D15 (prev. Table D2.14) SLIP-RESISTANCE CLASSIFICATION

Application	Surface conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

Details are to be provided within the Construction Certificate application.

9. Services and Equipment

The following section of this report contains information relating to essential fire safety measures and the minimum standard of performance for those measures as set by the relevant BCA DTS provisions.

It is noted that the provisions below also apply to occupiable outdoor areas.

Fire Hydrants (BCA E1D2)

A fire hydrant system is required to be provided in accordance with BCA Clause E1D2 (prev. E1.3) and AS 2419.1-2021.

Pressure and flow information will be required to confirm the required pressures and flow to the system, depending on the type of hydrant to be utilised.

The building will be required to be provided with a booster assembly as part of the fire hydrant requirements. The booster is required to be located attached to the building at the main entry. If remote from the building, the booster is to be located at the main vehicle entry or with sight of the main entry of the building within 8m of a hardstand area.

A fire ring main is required.

The fire services engineer is to confirm the following via drawings, calculations, and schematics:

- The proposed system design (combined system or separate system);
- The fire hydrant coverage to the building;
- The proposed method of covering external occupiable areas (apart from ground floor);
- The required flow rates for the development;
- The required tank capacity if a fire service tank is proposed;
- Confirmation proposed pump duties are suitable for the system design;
- The clearance requirements for pumps and tanks being met;
- Pressure zoning and valving to vertical ring mains.

Details are to be provided within the Construction Certificate application.

Fire Hose Reels (BCA E1D3)

Fire hose reels are required to BCA Clause E1D3 and AS 2441-2005.

The system is required to provide coverage to the car park, retail and assembly (gym) areas.

Fire hose reels are to be located within 4m of exits and provide coverage within the building based on a 36m hose length and 4m of water spray. Where required, additional fire hose reels shall be located internally as required to provide coverage. These hose reels are to be located adjacent to internal hydrants.

Fire hose reel cupboards must not contain any other services such as water meters, etc., and doors to fire hose reel cupboards are not to impede the path of egress unless a performance solution is developed under BCA Performance Requirement E1P1.

Details are to be provided within the Construction Certificate application.

Fire Extinguishers (BCA E1D14)

The provision of portable fire extinguishers is required to BCA Clause E1D14 and AS 2444 - 2001 to provide coverage to the residential and commercial (office) areas.

The below details when portable fire extinguishers are required:

Occupancy Class	Risk Class (as defined in AS 2444)
General provisions – Class 2 to 9 buildings (except within sole-occupancy units of a Class 9c building)	a) To cover Class AE or E fire risks associated with emergency services switchboards. (Note 1) b) To cover Class F fire risks involving cooking oils and fats in kitchens. c) To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (not excluding that held in fuel tanks of vehicles). d) To cover Class A fire risks in normally occupied fire compartments less than 500m² not provided with fire hose reels (excluding open deck carparks). e) To cover Class A fire risks in classrooms and associated schools not provided with fire hose reels. f) To cover Class A fire risks associated with Class 2 or 3 building or class 4 part of building.
Specific provisions (in addition to general provisions) – a) Class 9a health care building b) Class 3 parts of detention and correctional occupancies c) Class 3 accommodation for children, aged persons and people with disabilities d) Class 9c building	To cover class A and E fire risks. (Note 2)

Extinguishers are to be provided to the class 3 portions of the building in accordance with the below:

- an ABE type fire extinguisher is to be installed with a minimum size of 2.5 kg; and
- extinguishers are to be distributed outside a sole-occupancy unit:
 - a) to serve only the storey at which they are located; and
 - b) so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10 m.

Fire extinguishers are to be located in accordance with AS 2444 - 2001, often collocated with fire hydrants and/or fire hose reels.

Further details are required and should be provided with the Construction Certificate application.

Automatic Sprinkler Protection (BCA E1D4 – E1D13)

Automatic sprinkler protection is required to BCA Specification 17 and AS 2118.1-2017 to the following areas:

- Throughout the entire building where the effective height exceeds 25m.

Further details are required and should be provided with the Construction Certificate application.

Smoke Hazard Management (BCA E2D3 – E2D20)

Smoke hazard management shall be provided throughout the building by means of the following systems:

- Automatic Smoke Detection/Alarm System in accordance with the requirements of BCA Spec 20 Clause 3, 4, 5 including AS 3786 and/or AS 1670.1-2018 as applicable.
- Mechanical air handling system (automatic air pressurisation throughout the fire isolated exits).
- Mechanical air handling system (automatic shutdown of any air-handling system (other than miscellaneous exhaust air systems installed in accordance with S.5 & 6 of AS 1668.1) not forming part of a smoke hazard management system within the class 9 tenancy).
- Mechanical air handling system (carpark ventilation systems must comply with Clause 5.5 of AS/NZS 1668.1-2015 except that fans with metal blades suitable for operation at normal temperature may be used and the electrical power and control cabling need not be fire rated).

A fire indicator panel is required as part of the detection system. This panel is to be located within 4m of the main entry and should be incorporated within the fire control centre.

Lift Services (BCA E3D3, E3D4, E3D5, E3D9, E3D10, E3D11E3.4 and BCA E3.6)

The passenger lifts to be installed are to be:

- Fitted with warning signs, fire service controls in accordance with Clauses E3D4, Figure E3D4, E3D9, E3D11, and E3D12 of the BCA.
- Stretcher facilities are to be provided within the lifts with minimum dimensions of 600mm wide, 2000mm long and 1400mm high;
- At least two emergency lifts with stretcher facilities in accordance with Clause E3D5 of the BCA. Where passenger lifts are located in different shafts, at least one emergency lift per shaft is required. These lifts are to serve all storeys that are served by passenger lifts.
- Be provided with the following in order to satisfy accessibility requirements:
 - A handrail in accordance with AS1735.12-1999,
 - Minimum internal floor dimensions of 1400 x 1600mm for lifts which travel more than 12m, or 1100 x 1400mm for lifts which travel not more than 12m,
 - Fitted with a series of door opening sensory devices which will detect a 75mm diameter or across the door opening between 50mm and 1550mm above floor level,
 - Have a set of buttons for operating the lift located at heights above level complying with AS1735.12 - 1999
 - For lifts serving more than 2 levels, automatic audible information within the lift car identifying the level each time the car stops, and audible and visual indication at each lift landing to indicate the arrival of a car

Exit Signs and Emergency Lighting (BCA E4D2, E4D4, E4D5, E4D6 and E4D8)

Emergency lighting and exit signs indicating exit location paths of travel to exits to be provided in accordance with BCA Part E4 and AS/NZS 2293.1-2018, including the potential use of photo luminescent exit signs.

Details are required to be provided for review.

Emergency Warning and Intercom Systems for Emergency Purposes (BCA E4D9)

An Emergency Warning and Intercom System is required in accordance with AS 1670.4-2018 and BCA Clause E4D9.

Details are to be provided for review within the Construction Certificate application.

Fire Control Centre (BCA E1D15)

The fire control room does not appear to have a door from the front entrance and another direct from a public place or a fire isolated passageway connected to a public place.

Details are to be provided for review within the Construction Certificate application.

Fire Precautions During Construction (BCA E1D16)

In a building under construction not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit.

After the building has reached an effective height of 12m, the following fire services are required to be operational:

- Booster connections installed;
- Required fire hydrants and fire hose reels on every storey covered by the roof/floor structure (except the 2 uppermost storeys); and
- Once the building reaches a height requiring pumps to achieve compliant hydrant system flows (or 25m in effective height), they must be installed; and
- Once the building reaches a height requiring fire service tanks (or 25m in effective height) it must be installed.

The builder/ fire service contractor should supply details of the method of achieving compliance with E1D16 during construction.

10. Health and Amenity

Stormwater Drainage (BCA Clause F1D3)

Stormwater drainage systems serving the building are to comply with AS 3500.3 - 2018.

Details are to be provided for review within the Construction Certificate application.

Surface Water Management (BCA Part F1)

Exposed Joints

Exposed joints in the drainage surface on a roof, balcony, podium or similar horizontal surface part of a building must not be located beneath or run through a planter box, water feature or similar part of the building.

Joints are to be protected in accordance with Section 2.9 of AS 4654.2.

External Waterproofing Membranes

All external above ground areas (roof slabs, balconies etc.) shall be protected by a waterproofing system in accordance with AS 4654 Parts 1 and 2 – 2012.

Details are to be provided for review within the Construction Certificate application.

Floor Wastes (BCA Clause F2D4)

Floor wastes to be provided within bathrooms and laundries where located above another sole occupancy unit. The floor shall be sloped towards these wastes.

Floor wastes are required to be provided where wall hung urinals are provided and the floor shall be sloped towards these wastes.

Details are to be provided for review within the Construction Certificate application.

Roof & Wall Cladding (BCA Part F3)

DTS provisions relating to the waterproofing of external walls apply as follows:

- Masonry, including masonry veneer, unreinforced and reinforced masonry is to comply with AS 3700
- Autoclaved aerated concrete is to comply with AS 5146.3
- Metal wall cladding is to comply with AS 1562.1.

Where the installation is not proposed to comply with the above, or a different material is proposed to be used, a performance solution can be utilised to demonstrate compliance.

Details are to be provided for review within the Construction Certificate application.

Wet Areas & Overflow Protection (BCA Part F2)

Internal wet areas throughout the development (e.g. bathrooms, laundries) shall be waterproofed in accordance with AS 3740 - 2021 requirements.

Further review will be undertaken as the design develops with respect to the specification of waterproofing membrane, provision of water-stops at doorways etc.

Details are to be provided for review within the Construction Certificate application.

Sanitary Facilities (BCA F4D2, F4D3, F4D4, F4D5, F4D6)

Retail

Separate sanitary facilities are required to be provided for male & female employees. In relation to the public, sanitary facilities are required to be provided either where more than 600 persons can be accommodated (standard shops) or for café / restaurant where there are more than 20 seats.

Apartments

Each apartment is required to be provided with the following:

- A kitchen sink and facilities for the preparation and cooking of food; and
- A bath or shower; and
- A closet pan and wash basin; and
- Clothes washing facilities comprising at least one wash tub and space for a washing machine; and
- Clothes line of at least 7.5m, or space for one heat operated drying device within the same space as the clothes washing.

The design submitted indicates that each apartment should satisfy the above requirements.

Offices

Separate sanitary facilities are required to be provided for male & female employees.

The following table summarises the sanitary facilities provided:

Sanitary Facilities Provided			
	WC	Urinals	Basins
Male	0	0	0
Female	0	0	0
Accessible	1		1
The above facilities are adequate for 10 staff members			

Detailed designs will need to be developed as to the layout, dimensions, etc of the sanitary facilities.

Note: The Unisex facilities provided for people with disabilities may be counted once for each sex. These facilities are to be provided in accordance with AS 1428.1-2021.

Bathroom Construction

Where bathrooms or rooms containing water closets have the WC within 1200mm of the doorway, the door shall be either sliding, open outwards, or be provided with removable hinges.

Further details are to be provided for review within the Construction Certificate application to demonstrate the staff facilities for all non-residential areas are suitably designed.

Additionally, details of the accessible End of Trip facility are required to be provided.

Light and Ventilation (BCA Part F6)

Class 3

Natural light and ventilation is to be provided to all habitable rooms at a rate of 10% and 5% of the floor area of the rooms respectively.

A required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or wall that is the greater of:

- (i) generally — 1 m; and
- (ii) 50% of the square root of the exterior height of the wall in which the window is located, measured in metres from its sill.

Class 5, 6, 7, 8 & 9

Natural Ventilation is required to be provided to rooms at a rate of 5% of the floor area in openings. Alternatively, mechanical ventilation is required in accordance with AS1668.2-2012

Artificial lighting complying with AS/NZS 1680.0-2009 is to be incorporated with the final detailed design to be developed to confirm this.

These provisions also apply to areas considered as occupiable outdoor areas.

Sound Transmission and Insulation (BCA Part F7)

Building elements within Class 3 areas should provide the following sound insulation levels.

Location	Notes	Sound Insulation Requirement
Walls separating habitable rooms		$R_w + C_{tr} \geq 50$
Walls separating habitable room and kitchen or bathroom	Wall must be of Discontinuous Construction	$R_w + C_{tr} \geq 50$
Floor separating habitable rooms	Impact isolation required	$R_w + C_{tr} \geq 50$ $L_{n,w} + C_i \leq 62$
Duct, soil, waste or water supply pipe, including pipes that is located in a floor or wall cavity, serves or passes through more than one room	Adjacent habitable room or Adjacent non-habitable room	$R_w + C_{tr} \geq 40$ or $R_w + C_{tr} \geq 25$
Door to habitable room		$R_w \geq 30$

Please note for walls requiring impact resistance an air gap between leafs of the wall construction is required to be provided.

Please provide a report from the acoustic engineer verifying design compliance with the provisions of Part F7 of the BCA.

Condensation Mitigation (BCA Part F8)

External Wall Construction

Pliable building membranes installed to an external wall must:

- achieve compliance with AS 4200.1, and
- be installed in accordance with AS4200.2, and
- be located on the exterior side of the primary insulation layer or the wall assembly and except for the single skin mason and single skin concrete be separated from water sensitive materials.

Where a pliable building membrane, sarking-type material or insulation layer is installed on the exterior side of the primary insulation layer, it must have a vapour permeance of not less than: 0.143µg/N.s in climate zones 4 and 5, and not less than 1.14µg/N.s in climate zones 6,7 and 8.

Exhaust Systems

Exhaust systems must achieve a minimum flow rate of 25L/s for bathrooms and sanitary compartments and 40L/s for kitchens and laundries. These exhaust systems must all discharge directly or via a shaft/duct to outdoor air.

An exhaust system that is not run continuously and is serving a bathroom or sanitary compartment that is not ventilated in accordance with F6D7 is to be:

- Interlocked with the rooms light switch; and
- Include a run on timer so that the exhaust system continues to operate for 10 minutes after the light switch is turned off.

11. Energy Efficiency

Section J is applicable to the building.

SECTION J (JP1 Energy Efficiency)

Efficient energy use must be achieved appropriate to the function and use of the building, level of human comfort, solar radiation, energy source of the services and sealing of the building envelope. To achieve this JV1, JV2, JV3, JV4 and JV5 verification methods have been introduced as options available to achieve compliance.

It is noted that a deemed to satisfy pathway is still available.

The proposed site will be located in a climate zone 5

Certification from an appropriately qualified engineer should be provided for either option with a report/ computations outlining how compliance is achieved.

Verification Methods

The Verification Methods available to demonstrate compliance with the BCA on a performance basis are as follows:

J1V1 NABERS Energy for Offices

- To achieve compliance with J1P1 a class 5 building must achieve a minimum of 5.5 NABERS Energy for Offices Base Building Commitment Agreement.
- The energy model demonstrates the base buildings greenhouse gas emissions are not more than 67% of the 5.5 star level when excluding:
 - Tenant supplementary heating and cooling systems
 - External lighting; and
 - Car park services.
 - A thermal comfort level between predicted mean vote of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of annual hours of operation.
- The building also need to comply with additional requirements of Spec 33.

The calculation method must comply with ANSI/ASHRAE Standard 140

J1V1 NABERS Energy for Class 2 (Other than Sole Occupancy Units)

For a Class 2 building, other than sole-occupancy units, compliance with J1P1 is verified when—

- a) a minimum 4-star NABERS Energy for Apartment Buildings Commitment Agreement is obtained; and
- b) air-conditioning, which operates not less than 18 hours per day, is provided to all enclosed common lift lobbies and corridors; and
- c) the energy model required for (a) demonstrates—
 - i. the greenhouse gas emissions of the services are less than 90% of the 5-star level; and
 - ii. a thermal comfort level of between a Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of the air-conditioned common area occupied zones, excluding indoor swimming pool chambers, for not less than 98% of the annual hours of operation of the building; and
 - iii. the space temperature in any indoor swimming pool chamber is maintained at 2°C above the pool temperature during occupied hours of not less than 12 hours per day; and
- d) the building complies with the additional requirements in BCA Specification 33.

The calculation method must comply with ANSI/ASHRAE Standard 140

J1V2 Green Star

To achieve compliance with J1P1 for Class 3,4,5,6, 7, 8, 9 and common area of Class 2 buildings Green Star can be used as a verification method when the calculation method complies with ANSI/ASHRAE Standard 140, BCA Specification 34 and when:

- The building complies with simulation requirements and is registered for a Green Star – Design & As-Built rating; and
- The annual greenhouse gas emissions of the proposed building are less than 90% of the annual greenhouse gas emissions of the reference building; and
- In the proposed building, a thermal comfort level of between predicted mean vote of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation of the building; and

J1V3 Verification Using a Reference Building

To achieve compliance with JP1 for Class 3, 4, 5, 6, 7, 8, 9 and common area of Class 2 buildings verification using a reference building can be used when the calculation method complies with ANSI/ASHRAE Standard, BCA Specification 34 and when:

- It is determined that the annual greenhouse gas emissions of the proposed building are not more than the annual greenhouse gas emissions of a reference building when
 - the proposed building is modelled with the proposed services; and
 - the proposed building is modelled with the same services as the reference building.
- The proposed building thermal comfort level is to be between predicted mean vote of -1 to +1 across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation; and
- The building achieves the additional requirements in BCA Specification 33 Spec JVa); and
- The greenhouse gas emissions of the proposed building may be offset by renewable energy generated and use on site and another process such as reclaimed energy used on site.

J1V4 Building Envelope Sealing

Compliance with J1P1(e) and J1P2 is verified for building envelope sealing when the envelope is sealed at an air

- permeability rate, tested in accordance with Method 1 of AS/NZS ISO 9972, of not more than—For a class 2 building or a class 4 part of a building, $10\text{m}^3/\text{hr.m}^2$ at 50 Pa reference pressure; or
- For a class 5, 6, 8, 9a or 9b building other than a ward area in climate zones 1, 7 and 8, $5\text{m}^3/\text{hr.m}^2$ at 50 Pa reference pressure; or
- For class 3 or 9c building, or a class 9a ward area in climate zones 1, 3, 4, 6, 7 and 8 $5\text{m}^3/\text{hr.m}^2$ at 50 Pa reference pressure.

Part J3 and performance solution that uses one of the other NCC assessment Methods which verifies that compliance with JP1 (e) will be achieved can also be used as verification methods.

In a sole-occupancy unit of a Class 2 building or a Class 4 part of a building, where an air permeability rate of not more than $5\text{m}^3/\text{hr.m}^2$ at 50 Pa reference pressure is achieved—

- a) a mechanical ventilation system must be provided that—
 - i. can be manually overridden; and
 - ii. provides outdoor air, either—
 - A. continuously; or
 - B. intermittently, where the system has controls that enable operation for not less than 25 per cent of each 4 hour segment; and
 - iii. provides a flow rate not less than that achieved with the following formula:

$$Q = (0.05 \times A + 3.5 \times (N + 1)) / p$$
 (refer J1V4 for full articulation of equation.)
- b) any space with a solid-fuel burning combustion appliance must be ventilated with permanent openings directly to outside with a free area of not less than half of the cross-sectional area of the appliance's flue; and
- c) any space with a gas-fueled combustion appliance must be ventilated in accordance with—
 - i. clause 6.4 of AS/NZS 5601.1; and

- ii. clause 6.4.5 of AS/NZS 5601.1.

The volume of the space is considered to be 1 m³ for determining ventilation requirements.

Building Fabric (Part J4)

Roof and Ceiling Construction (Part J4D4)

For a deemed-to-satisfy solution roofs and or ceilings are to be constructed to provide a total R-Value greater than or equal to-

- (i) in climate zones 1, 2, 3, 4 and 5, R3.7 for a downward direction of heat flow; and
- (ii) in climate zone 6, R3.2 for a downward direction of heat floor; and
- (iii) in climate zone 7, R3.7 for an upward direction of heat flow; and
- (iv) in climate zone 8, R4.8 for an upward direction of heat flow;

In climate zones 1, 2, 3, 4, 5, 6 and 7, the solar absorptance of the upper surface of a roof must be not more than 0.45.

Where the layer of insulation is penetrated by the percentages as tabled below, additional upgrading of the remainder of the insulation level is required.

To achieve compliance with J0.2 (c) a roof that has a metal sheet roofing fixed to metal purlins, metal rafters or metal battens and does not have a ceiling lining or has a ceiling lining fixed directly to those metal purlins, metal rafters or metal battens must have a thermal break. The thermal break to be consisting of a material with a R-Value of not less than R0.2, installed at all points of contact between the metal sheet roofing and its supporting metal purlins, metal rafters or metal battens.

Roof lights (Part J4D5)

Where roof lights are installed they must have:-

- (a) a total area of not more than 5% of the floor area of the room or space served; and
- (b) transparent and translucent elements, including any imperforate ceiling diffuser, with a combined performance of:-
 - (i) for Total system SHGC, in accordance with the below table; and
 - (ii) for Total system U-value, not more than U3.9;

Roof light shaft index (see Note 1)	Total area of roof lights up to 3.5% of the floor area of the room or space	Total area of roof lights more than 3.5% and up to 5% of the floor area of the room or space
Less than 1.0	Not more than 0.45	Not more than 0.29
1.0 to less than 2.5	Not more or equal to than 0.51	Not more than 0.33
Greater than 2.5	Not more than or equal to 0.76	Not more than 0.49

External Walls and Glazing (Part J4D6)

For walls and glazing construction the total system U-value must not be greater than-

- (i) for a Class 2 common area, a Class 5, 6, 7, 8 or 9b building other than a ward area, U2.0; and
- (ii) for a Class 3 or 9c building or a Class 9a ward area –

- (a) in climate zones 1, 3, 4, 6 or 7, U1.1; or
- (b) in climate zones 2 or 5, U2.0; or
- (c) in climate zones 8, U0.9;

The total system U-value of wall-glazing construction should be calculated in accordance with BCA Specification 37.

Wall components of the wall-glazing construction must achieve a minimum total R-Value of R1.0 where the wall is less 80% if the area and reflect the value specified in Table J4D6a where the wall is *0% or more of the area.

There are further design parameters for display glazing and solar admittances for wall-glazing construction, both of which should comply with the relevant provisions of J4D6.

Floors (Part J4D7)

Floors are to achieve an R rating of 2,0 downwards heat flow or in a floor with in-slab heating/ cooling 3.25.

Building sealing (Part J5)

Windows and Doors (Part J5D5)

- a) A door, openable window or the alike must be sealed –
 - (i) When forming part of the envelope; or
 - (ii) In climate zones 4,5,6,7 or 8
- b) The requirements of (a) do not apply to –
 - (i) A window complying with AS2047; or
 - (ii) A fire door or smoke door; or
 - (iii) A roller shutter door, roller shutter grille or other security door or device installed only for out of house security
- c) A seal to restrict air infiltration –
 - (i) For the bottom edge of a door, must be draft protection device; and
 - (ii) For the other edged of a door or the edges of an openable window or other such opening, may be a foam or rubber compression strip, fibrous seal or the like.
- d) An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, rapid roller door, revolving door or the like, other than –
 - (i) When the conditioned space has a floor area of not more than 50m²; or
 - (ii) Where a café, restaurant, open front shop or the like has –
 - (A) A 3m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and
 - (B) At all other entrances to the café, restaurant, open front shop or the like, self-closing doors.
 - (iii) A loading dock entrance, if leading to a conditioned space, must be fitted with a rapid roller door or the like

Exhaust fans (Part J5D6)

An exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving a conditioned space or a habitable room in climate zones 4, 5, 6, 7, or 8.

Construction of ceilings, walls and floors (Part J5D7)

A seal to restrict air infiltration must be fitted to each edge of the external doors and openable windows. The seals may be foam or compressible strip, fibrous seal or the like. The main entry doors must have either an airlock, or self-closing doors, or a revolving door.

Ceilings, walls, floors and any openings such as a window frame, door frame, roof light frame or the like must be constructed to minimise air leakage in accordance with the below when forming part of –

- (i) The envelope; or
- (ii) In climate zones 4, 5, 6, 7 or 8

Construction required by above must be –

- (iii) Enclosed by internal lining systems that are close fittings at ceiling, wall and floor junctions; or
- (iv) Sealed at junctions and penetrations with –
 - (A) Close fitting architrave, skirting or cornice; or
 - (B) Expanding foam, rubber compressible strip, caulking or the like

The above does not apply to openings, grilles or the like required for smoke hazard management.

Evaporative coolers (Part J5D8)

An evaporative cooler must be fitted with a self-closing damper or the like –

- (a) When serving a heated space; or
- (b) In climate zones 4,5,6,7 or 8.

Air Conditioning and Ventilation systems (Part J6)

Air conditioning and ventilation systems must be designed to comply with the following provisions:

- Be capable of being deactivated when the building or part of a building being served by that system is not occupied
- Where motorised dampers are in place, they should close when the system is deactivated
- Where serving a sole-occupancy unit in a Class 3 building, must not operate when any external door of the sole-occupancy unit that opens to a balcony or the like, is open for more than one minute
- Time switches should be provided to control an air-conditioning system of more than 2kW_r and a heater of more than 1kW_{heating} used for air-conditioning and be capable of switching electric power on and off at variable pre-programmed times on variable pre-programmed days.
- Ductwork and fittings in an air-conditioning system should have insulation complying with AS/NZS 4859.1 and have an insulation R-Value greater than or equal to:
 - for flexible ductwork R1.0; or
 - for cushion boxes, that of the connecting ductwork; or
 - That specified in Table J6D6

Table J6D6

Location of ductwork and fittings	Climate zone 1, 2, 3, 4, 5, 6 or 7	Climate zone 8
Within a conditioned space	1, 2	2.0
Where exposed to direct sunlight	3.0	3.0
All other locations	2.0	3.0

Mechanical:

- Be capable of being deactivated where the building or part of the building served by that system is not occupied

- Time switches must be provided to a mechanical ventilation system with an air flow rate of more than 1,000 L/s, capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days.

Heaters

A heater used for air-conditioning or as part of an air-conditioning system must be either a solar heater, gas heater, heat pump heaters, a heater using reclaimed heat or an electric heater.

A gas water heater, that is used as part of an air-conditioning system must:

- if rated to consume 500 MJ/hour of gas or less, achieve a minimum gross thermal efficiency of 86%; or
- If rated to consume more than 500 MJ/hour of gas, achieve a minimum gross thermal efficiency of 90%

Refrigerant chillers

An air-conditioning system refrigerant chiller must comply with MEPS and the full load operation energy efficiency ratio and integrated part load energy efficiency ratio laid out under clause J5.10 of the BCA when determined in accordance with AHRI 551/591

Unitary air-conditioning equipment

Unitary air-conditioning equipment including packaged air-conditioners, split systems, and variable refrigerant flow systems must comply with MEPS and for a capacity greater than or equal to 65 kW_r –

- Where water cooled, have a minimum energy efficiency ratio of $4.0 W_r / W_{input\ power}$ for cooling when tested in accordance with AS/NZS 3823.1.2 at test condition T1, where input power includes both compressor and fan input power; or
- Where air cooled, have a minimum energy efficiency ratio of $2.9 W_r / W_{input\ power}$ for cooling when tested in accordance with AS/NZS 3823.1.2 at test condition T1, where input power includes both compressor and fan input power.

Artificial Lighting and Power (Part J7)

Interior Artificial Lighting and Power Control (Part J7D3 & J7D4)

In a building other than a sole-occupancy unit of a Class 2 building or a Class 4 building for artificial lighting, the aggregate design illumination power load must not exceed the sum of the allowances obtained by multiplying the area of each space by the maximum illumination power density below:

The maximum illumination power density;

Common rooms, spaces and corridors in a Class 2 building	4.5W/m ²
Stairways, including fire-isolated stairways	2W/m ²
Toilet, locker room, staff room, rest room or the like	3W/m ²
Lift cars	3W/m ²
Service area, cleaner's room and the like	3W/m ²
Control room, switch room or the like	
(A) intermittent monitoring	3W/m ²
(B) Constant monitoring	4.5W/m ²
Plant room:	
(A) Where an average of 160 lx vertical illuminance is required on a vertical panel such as in switch rooms	4W/m ²
(B) With a horizontal illuminance target of 80 lx	2W/m ²

Library:	
(A) Stack & shelving area	2.5W/m ²
(B) Reading room & general areas	4.5W/m ²
Office:	
(A) Artificially lit to an ambient level of 200 lx or more	4.5W/m ²
(B) Artificially lit to an ambient level of less than 200 lx	2.5W/m ²
Museum & gallery	2.5W/m ²
Retail:	14W/m ²
Corridors:	5W/m ²
Common rooms, spaces & corridors in a Class 2 building	4.5W/m ²
Lounge area for communal use in a Class 3 or 9c building	4.5W/m ²
Dormitory of Class 3 building:	
(A) Used for sleeping only	3W/m ²
(B) Used for sleeping & study	4W/m ²
Storage	1.5W/m ²
School:	4.5W/m ²
Health Care:	
(A) Infants & children's wards & ED	4W/m ²
(B) Exam room	4.5W/m ²
(C) Exam room in intensive care & high dependency ward	6W/m ²
(D) All other patient care areas inc wards & corridors	2.5W/m ²
Kitchen and food preparation area:	4W/m ²
Car parks:	
(A) General	2W/m ²
(B) Entry zone (first 15m of travel during the daytime)	11.5W/m ²
(C) Entry zone (next 4m of travel) during the day	2.5W/m ²
(D) Entry zone (first 20m of travel) during nighttime	2.5W/m ²
Auditoriums, church and public hall :	8W/m ²
Restaurant, café, bar:	14W/m ²

Artificial Lighting must be controlled by a time switch, other control device or a combination of both.

Each light control in a building must not operate lights within an area of more than:

- 250m² if in a Class 6 building or Class 8 laboratory
- Not operate lighting for an area more than -
 - a) 250m² for a space of not more than 2000m²;
 - b) 1000m² for a space of more than 2000m²
 if in a Class 3, 6, 7, 8 (other than a laboratory) or 9 building;
- 1000m² for a space of more than 2000m²

Interior decorative and display lighting

Interior decorative and display lighting, such as for a foyer mural or art display, must be controlled -

- Separately from other artificial lighting; and
- By a manual switch for each area other than when operating times of the displays are the same in a number of areas (e.g. where in a museum) in which case they may be combined; and
- By a time switch in accordance with BCA Specification 40 where the display lighting exceeds 1 kW

Window display must be controlled separately from other display lighting exceeds 1kW.

Exterior artificial lighting

Artificial lighting attached to or directed at the façade of the building if it exceeds a total of 100W must:

- Use LED luminaires for 90% of the total lighting load; or
- Be controlled by a motion detector in accordance with BCA Specification 40;
- When used for decorative purposes, such as façade lighting or signage lighting, have a separate switch in accordance with BCA Specification 40.

Lifts (Part J7D8)

Lifts must be configured to ensure artificial lighting and ventilation in the car are turned off when it is unused for 15 minutes and achieve the idle and standby energy performance level required, and the energy efficiency class under J7D8 of the BCA.

Escalators and moving walks (Part J7D9)

Escalators and moving walkways must have the ability to slow to between 0.2 m/s and 0.05 m/s when unused for more than 15 minutes.

Heated Water Supply and Swimming Pool and Spa Pool Plant (Part J8)

Heated water supply (Part J8D2)

A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.

Swimming Pool & Spa Pool Heating and Pumping (J8D3 & J8D4)

J8D3(2) Where some or all of the heating required by (a) is by a gas heater or a heat pump, the swimming pool must have a cover with a minimum R-Value of 0.50 and in time switch to control the operation of the heater.

J8D4(2) Where some or all of the heating required by (a) is by a gas heater or heat pump, the spa pool must have a cover with a minimum R- Value of 0.50 and a push button and a time switch to control the operation of the heater.

Energy Monitoring and On-Site Distributed Energy Resources (Part J9)

Facilities for Energy Monitoring (J9D3)

A building or sole-occupancy unit with a floor area of more than 500 m² must have energy meters configured to record the time-of-use consumption of gas and electricity.

A building with a floor area of more than 2 500 m² must have energy meters configured to enable individual time-of-use energy data recording, in accordance with the below, of—

- a) artificial lighting; and
- b) appliance power; and
- c) central hot water supply; and

- d) internal transport devices including lifts, escalators and moving walkways where there is more than one serving the building; and
- e) on-site renewable energy equipment; and
- f) on-site electric vehicle charging equipment; and
- g) on-site battery systems; and
- h) other ancillary plant.

Energy meters required by the above must be interlinked by a communication system that collates the time-of-use energy data to a single interface monitoring system where it can be stored, analysed and reviewed.

These provisions do not apply to energy meters serving—

- a) a Class 2 building where the total floor area of the common areas is less than 500 m²; or
- b) individual sole-occupancy units with a floor area of less than 2 500 m

Facilities for Electric Vehicle Charging Equipment (Clause J9D4)

A carpark associated with a Class 2, 3, 5, 6, 7b, 8 or 9 building must be provided with electrical distribution boards dedicated to electric vehicle charging in accordance with Table J9D4 in each storey of the carpark and labelled to indicate use for electric vehicle charging equipment.

Electrical distribution boards dedicated to serving electric vehicle charging in a carpark must—

- a) be fitted with a charging control system with the ability to manage and schedule charging of electric vehicles in response to total building demand; and
- b) when associated with a Class 2 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 11:00 pm to 7:00 am daily; and
- c) when associated with a Class 5 to 9 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 9:00 am to 5:00 pm daily; and
- d) when associated with a Class 3 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 48 kWh from 11:00 pm to 7:00 am daily; and
- e) be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in—
 - i. 100% of the car parking spaces associated with a Class 2 building; or
 - ii. 10% of car parking spaces associated with a Class 5 or 6 building; or
 - iii. 20% of car parking spaces associated with a Class 3, 7b, 8 or 9 building; and
- f) contain space of at least 36 mm width of DIN rail per outgoing circuit for individual sub-circuit electricity metering to record electricity use of electric vehicle charging equipment; and
- g) be labelled to indicate the use of the space required by (f) is for the future installation of metering equipment.

These provisions do not apply to a stand-alone Class 7a building.

Facilities for Solar Photovoltaic and Battery Systems

The main electrical switchboard of a building must—

- a) contain at least two empty three-phase circuit breaker slots and four DIN rail spaces labelled to indicate the use of each space for—
 - i. a solar photovoltaic system; and
 - ii. a battery system; and
- b) be sized to accommodate the installation of solar photovoltaic panels producing their maximum electrical output on at least 20% of the building roof area.

At least 20% of the roof area of a building must be left clear for the installation of solar photovoltaic panels, except for buildings—

- a) with installed solar photovoltaic panels on—
 - i. at least 20% of the roof area; or
 - ii. an equivalent generation capacity elsewhere on-site; or
- b) where 100% of the roof area is shaded for more than 70% of daylight hours; or

- c) with a roof area of not more than 55 m²; or
- d) where more than 50% of the roof area is used as a terrace, carpark, roof garden, roof light or the like.

The requirements do not apply to a building with solar photovoltaic panels installed on at least 20% of the roof area or to a building with battery systems installed.

12. Access for People with Disabilities

The development is required to comply with the accessibility provisions contained within:

- The National Construction Code 2022 Volume 1 - Building Code of Australia Class 2-9;
- Disability (Access to Premises – Buildings) Standards 2010;
- AS 1428.1-2021 General Requirements for Access – New Building Work;
- AS 1428.4.1 -2009 Tactile Ground Surface Indicators
- AS 2890.6-2009 Car Parking for People with Disabilities

Note: With the introduction of the Commonwealth *Disability Discrimination Act (DDA)* in 1992 (enacted in 1993), all organisations have a responsibility to provide equitable and dignified access to goods, services and premises used by occupants. Organisations and individuals since its introduction, are required to work to the objects of the Act which are to eliminate, as far as possible, discrimination against persons on the ground of disability in the **areas of work, accommodation, education, access to premises, clubs and sports, and the provision of goods, facilities, services and land, existing laws and the administration of Commonwealth laws and programs.**

This report assesses against the requirements contained with the Building Code of Australia (and documents referred to therein) and is not considered to be a full assessment against the Disability Discrimination Act.

General Building Access Requirements (BCA D4D2)

Access for people with disabilities shall be provided to and within the building in accordance with the requirements of Clause D4D3, D4D4 and D4D5 of the BCA 2022 Amendment 2 and AS 1428.1. Parts of the building required to be accessible shall comply with the requirements of:

- AS 1428.1-2021 General Requirements for Access – New Building Work;
- AS 1428.4.1 -2009 Tactile Ground Surface Indicators
- AS 2890.6-2009 Car Parking for People with Disabilities

Access for persons with a disability is to be provided as follows:

Short term holiday accommodation (Class 1b)

4 to 10 dwellings	To and within 1 dwelling
11 to 40 dwellings	To and within 2 dwellings
41 to 60 dwellings	To and within 3 dwellings
61 to 80 dwellings	To and within 4 dwellings
81 to 100 dwellings	To and within 5 dwellings
More than 100 dwellings	To and within 5 dwellings and 1 additional dwelling for each additional 30 dwellings or part thereof in excess of 100 dwellings

Boarding house, bed and breakfast, guest house, hostel (classed as 1b)

- To and within 1 bedroom and associated sanitary facility and not less than 1 of each type of common activity rooms, such as gyms, eating rooms, swimming pools etc.
- Where an AS1428.1 compliant lift is installed, to and within all rooms and spaces.

Apartment (Class 3 buildings)

- From the pedestrian entrance to at least 1 floor containing Sole Occupancy Units and to the entrance door of all Sole Occupancy Units on that floor, and to at least one type of each common facility, such as gyms, shops, laundries (shared), gaming rooms etc.
- Where an AS1428.1 compliant lift or ramp is provided in addition to the above and access is required to and within all spaces, and to the entrance of doors to single occupancy units on the levels, served by the lift or ramp.

Where individual Class 3 single occupancy units are provided:

1 to 10 single occupancy units	To and within 1 accessible sole occupancy units
11 to 40	To and within 2 accessible sole occupancy units
41 to 60	To and within 3 accessible sole occupancy units
61 to 80	To and within 4 sole occupancy units
81 to 100	To and within 5 sole occupancy units
101 to 200	To and within 5 sole occupancy units and 1 for every 25 sole occupancy units over 100
201 to 500 single occupancy units	To and within 9 accessible sole occupancy units, plus 1 for every 30 units in excess of 200 units
More than 500	To and within 19 accessible sole occupancy units, plus 1 for every 50 units in excess of 500 units

* Not more than 2 required accessible units may be located adjacent to each other; and

* Where more than 2 sole occupancy units are required to be accessible, they must be indicative of the range of units/rooms available.

Office/shops (Class 5/Class 6 buildings)

To and within all areas normally used by the occupants

Car parks (Class 7a buildings)

To and within any level containing accessible car parking spaces.

Warehouse and production/Manufacturing facilities

To and within all areas normally used by the occupants,

Where the uses of these areas could be deemed inappropriate, confirmation is required as the appropriateness of the areas in question by the owners or tenant. Where an exemption is sought from providing access under clause D4D5, this is to be applied for as part of the application for building work approval.

Hospitals

To and within all areas normally used by the occupants.

Schools and early childhood centres

To and within all areas normally used by the occupants.

Assembly Halls/Sporting venues

To all required wheelchair seating spaces and to all areas normally used by occupants except tiers or seating areas or platforms not containing accessible wheelchair seating areas.

Aged Care Facilities

From a pedestrian entrance required to be accessible, to at least 1 floor containing single occupancy units, and to the entrance doorway of single occupancy units located on that level, and to and within each type of common facility e.g. hairdressers, shops, laundries, TV rooms and public dining.

Where a ramp or a lift complying with AS1428.1 is provided, to and within all areas of the level served by the lift or ramp.

Where a group of sole occupant units or individual units are provided, the following ratio is required.

1 to 10 single occupancy units	To and within 1 accessible sole occupancy units
11 to 40	To and within 2 accessible sole occupancy units
41 to 60	To and within 3 accessible sole occupancy units
61 to 80	To and within 4 sole occupancy units
81 to 100	To and within 5 sole occupancy units
101 to 200	To and within 5 sole occupancy units and 1 for every 25 sole occupancy units over 100 or part thereof in excess of 100.
201 to 500 single occupancy units	To and within 9 accessible sole occupancy units, plus 1 for every 30 units in excess of 200 units or part thereof in excess of 200.
More than 500	To and within 19 accessible sole occupancy units plus 1 for every 50 units in excess of 500 units

Where more than 2 single occupancy units are required to be accessible they must be indicative of the range of units/rooms available.

Swimming Pools (Class 10b)

To and into swimming pools with a total perimeter greater than 40 m, associated with a Class 1b, 2, 3, 5, 6, 7, 8 or 9 building that is required to be accessible.

Provision for Access to Buildings (BCA Clause D4D3)

The BCA prescribes access to be provided to and within the building as follows:

- Via the principle pedestrian entry and at least 50% of all other entrances from the allotment boundary
- From designated car parking spaces for the use of occupants with a disability.
- From another accessible building connected by a pedestrian link.
- All areas used by the occupants.

In buildings over 500m² in floor area, a non-accessible entrance must not be located more than 50m from an accessible entrance.

Where a pedestrian entry contains multiple doors, the following is required;

- Entrance containing not more than 3 doors, at least one of the doorways must be accessible.
- Where an entrance contains more than 3 doors, not less than 50% of the doorways must be accessible.

A door is considered to be accessible if it is automatic (open and closing) or is more than 850mm in clear opening width and contains the required door circulation space.

Accessibility within Building (BCA Clause D4D4)

A building required to be accessible is required to be equipped with either a compliant lift or an AS 1428.1 compliant ramp, (but the maximum vertical rise of a ramp must not exceed 3.6m).

An exemption to not provide either a lift or ramp exists for class 5, 6, 7b, or 8 buildings, where a building contains;

- a) Less than 3 storeys; and
- b) Floor area of each storey (excluding the entrance level) is not more than 200m².

Within the building the following are required;

- Door circulation space as per AS1428.1 Clause 13.3;
- Doorways must have a clear opening of 850mm;
- Passing spaces (1.8m wide passages) must be provided at maximum of 20m intervals
- Within 2.0m of end access ways/corridors, turning areas spaces are required to be provided.
- Carpet pile height of not more than 11mm to an adjacent surface and backing <4mm
- Any glazing capable of being mistaken for a doorway or opening must be clearly marked (or contain chair rail, hand rail or transom as per AS 1288 requirements)

The design would generally comply with the prescriptive provisions of the BCA with additional ongoing review being undertaken as to door widths, circulation, etc. Further details are to be provided or access to these areas is to be assessed by an access consultant.

Car Parking (BCA Clause D4D6)

Accessible car parking spaces are required to comply with AS 2890.6-2009 at the rate of 1 per 100 car spaces to account for the office tenancy.

A 'shared zone' of minimum 5400mm x 2400mm is required adjacent to accessible car parking spaces, protected with a bollard.

Tactile Indicators (BCA Clause D4D9)

Tactile indicators are required to be provided to warn occupants of all stairs (except Fire Isolated stairs) and ramps regardless of public nature or private environment and where an overhead obstruction occurs less than 2.0m above the finished floor level.

Seating in Assembly Building (BCA Clause D4D10)

In a cinema wheelchair seating needs to be provided as follows:

Number of seats	Location of Spaces
Up to 300 seats	Must not be located in the front row

The location of wheelchair seats must cater for a representative range of seating provided.

In an assembly building, when fixed seating is provided, the wheelchair spaces to the following are required to be provided.

Number of fixed seats in a room or space	Number of wheelchair seating spaces	Grouping and location
Up to 150	3 spaces	1 single space; and 1 group of 2 spaces Not more than 2 spaces in any other group

Swimming Pools (BCA Clause D4D11)

Where pools exceed 40m in total perimeter, at least 1 means of accessible entry in the form of the following is required.

- Fixed or movable ramps (and an aquatic wheelchair) or
- Zero depth entry at a maximum gradient of 1:14 (and an aquatic wheel chair)
- Platform swimming pool lift (and an aquatic wheelchair) or
- A sling style swimming pool lift

Where the perimeter exceeds 70m in total, sling style lifts are not permitted.

Stairs (BCA Clause D4D4)

Stairs shall be constructed as follows:

- Where the intersection is at the property boundary, the stair shall be set back by a minimum of 900mm so that the handrail and TGSIs do not protrude into the transverse path of travel.
- Where the intersection is at an internal corridor, the stair shall be set back one tread width plus 300mm (nominally 700mm as per AS 1428.1-2021 Fig 26(b)), so the handrails do not protrude into transverse path of travel.
- Stairs shall have opaque risers.
- Stair nosing shall not project beyond the face of the riser and the riser may be vertical or have a splay backwards up to a maximum 25mm.
- Stair nosing profiles shall;
 - Have a sharp intersection;
 - Be rounded up to 5mm radius; or
 - Be chamfered up to 5mm x 5mm
- All stairs, including fire isolated stairs shall, at the nosing of each tread have a strip not less than 50mm and not more than 75mm deep across the full width of the path of travel. The strip may be set back a maximum of 15mm from the front of the nosing. The strip shall have a minimum luminance contrast of 30% to the background. Where the luminous contrasting strip is affixed to the surface of the tread, any change in level shall not exceed a difference of 5mm.

Accessible Sanitary Facilities (BCA Clause F4D5, F4D6, F4D7)

Unisex Accessible Sanitary Facilities

An accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only and provided in accordance with AS 1428.1-2021 and must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary products and as per following.

Building Type	Minimum accessible unisex sanitary compartments to be provided
Residential apartments	Where sanitary compartments are provided in common areas, not less than 1.
Office, industrial, assembly building, schools, health care except for within a ward area of a Class 9a health-care building	a) 1 on every storey containing sanitary compartments; and b) Where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.

Ambulant Facilities

At each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1-2021 must be provided for use by males and females.

Where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations.

An accessible unisex sanitary compartment or an accessible unisex shower need not be provided on a storey or level that is not provided with a passenger lift or ramp complying with AS 1428.1-2021

Accessible unisex showers

Accessible unisex showers must be provided in accordance with AS 1428.1 and at the following rates;

Building	Minimum accessible unisex showers to be provided
Residential apartments	Where showers are provided in common areas, not less than 1
Theatres, sporting venues or gyms	1 for every 10 showers or part thereof provided

Signage (BCA Clause D4D7)

As part of the detailed design package, specifications will need to be developed indicating:

- Sanitary Facility Identification Signs (note that they are to comply with BCA Specification 15 and include the use of Braille, Tactile, etc and be placed on the wall on the latch side of the facility);
- Directional / Way Finding signs to the Lifts, Sanitary Facilities, etc;
- Hearing Augmentation System;
- Identify each door required by BCA Clause E4D5 to be provided with an exit sign, stating 'EXIT' and 'Level' number
- Braille and tactile signs must be illuminated to ensure *luminance contrast* requirements are met at all times during which the sign is required to be read.

Hearing Augmentation (BCA Clause D4D8)

A hearing augmentation system shall be installed throughout the building in accordance with the requirements of Clause D4D8 of the BCA, where ever in a 9b building, auditorium conference room, meeting room etc. contain a PA system not used for emergency purposed or any ticket office or teller's booth or reception where the public is screened from the service provider.

Lifts (BCA Clause E3D7, E3D8)

Lifts compliant to BCA E3D7, E3D8, and E3D9 must be provided, where required to be provided, with a minimum size of 1400 x 1600mm or 1100mm x 1400mm (whichever is appropriate) in size – with appropriate handrails and auditory commands.

13. Appendix A - Reference Documentation

The following documentation was used in the assessment and preparation of this report:

Drawing No.	Title	Revision	Date	Prepared By
DA001	DA Plans Project Information	1	06/05/2026	3EM Architects
DA002	DA Plans Site Plan	1	06/05/2026	3EM Architects
DA100	DA Plans Basement 06	1	06/05/2026	3EM Architects
DA101	DA Plans Basement 05	1	06/05/2026	3EM Architects
DA102	DA Plans Basement 04	1	15/04/2026	3EM Architects
DA103	DA Plans Basement 03	1	15/04/2026	3EM Architects
DA104	DA Plans Basement 02	1	06/05/2026	3EM Architects
DA105	DA Plans Basement 01	1	06/05/2026	3EM Architects
DA106	DA Plans Loading Dock	1	06/05/2026	3EM Architects
DA107	DA Plans Level 00	1	06/05/2026	3EM Architects
DA108	DA Plans Level 01	1	06/05/2026	3EM Architects
DA109	DA Plans Level 02	1	06/05/2026	3EM Architects
DA110	DA Plans Level 03	1	15/04/2026	3EM Architects
DA111	DA Plans Level 04-06	1	15/04/2026	3EM Architects
DA112	DA Plans Level 07-14	1	15/04/2026	3EM Architects
DA113	DA Plans Level 15-20	1	15/04/2026	3EM Architects
DA114	DA Plans Level 21-22	1	15/04/2026	3EM Architects
DA115	DA Plans Level 23	1	15/04/2026	3EM Architects
DA116	DA Plans Level 24	1	15/04/2026	3EM Architects
DA117	DA Plans Level 25	1	15/04/2026	3EM Architects
DA118	DA Plans Level 26	1	15/04/2026	3EM Architects
DA119	DA Plans Level 27	1	15/04/2026	3EM Architects
DA120	DA Plans Level 28	1	15/04/2026	3EM Architects
DA200	Overall Elevations Elevation- North	1	15/04/2026	3EM Architects
DA201	Overall Elevations Elevation- South	1	06/05/2026	3EM Architects
DA202	Overall Elevations Elevation- East	1	06/05/2026	3EM Architects
DA203	Overall Elevations Elevation- West	1	15/04/2026	3EM Architects
DA300	Overall Sections Section Sheet 1	1	06/05/2026	3EM Architects

Drawing No.	Title	Revision	Date	Prepared By
DA301	Overall Sections Section Sheet 2	1	06/05/2026	3EM Architects
DA400	DA Plans Finishes Schedule	1	06/05/2026	3EM Architects
DA410	DA Plans Photo Montage	1	06/05/2026	3EM Architects
DA500	DA Plans GFA Diagram 1	1	06/05/2026	3EM Architects
DA501	DA Plans GFA Diagram 2	1	06/05/2026	3EM Architects
DA505	DA Plans Affordable Housing Plans	1	06/05/2026	3EM Architects
DA- DA510	DA Plans Communal Open Space and Landscape Diagram	1	06/05/2026	3EM Architects
DA- DA520	DA Plans Height Plane Diagram	1	06/05/2026	3EM Architects
DA-DA530	DA Plans Cross Ventilation	1	06/05/2026	3EM Architects
DA-DA540	DA Plans Shadow Diagram 1	1	06/05/2026	3EM Architects
DA-DA541	DA Plans Shadow Diagram 2	1	06/05/2026	3EM Architects
DA560	DA Plans Stratum Plan	1	06/05/2026	3EM Architects
DA2001	Perspectives External Views – Sheet 01	1	06/05/2026	3EM Architects
DA2002	Perspectives External Views – Sheet 02	1	06/05/2026	3EM Architects
DA2003	Perspectives External Views – Sheet 03	1	06/05/2026	3EM Architects
DA2004	Perspectives External Views – Sheet 04	1	06/05/2026	3EM Architects

14. Appendix B - Fire Resistance Levels

The table below represents the Fire resistance levels required in accordance with BCA 2022 Amendment 2:

Type A Construction

Table S5C11a: Type A Construction: FRL of loadbearing parts of external walls

Distance from a fire source feature	FRL (in minutes): Structural Adequacy/ Integrity/ Insulation			
	Class 2,3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Less than 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3m	90/60/30	120/90/90	180/180/120	240/240/180
3m or more	90/60/30	120/60/30	180/120/90	240/180/90

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

Distance from a fire source feature	FRL (in minutes): Structural Adequacy/ Integrity/ Insulation			
	Class 2,3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Less than 1.5m	-/90/90	-/120/120	-/180/180	-/240/240
1.5 to less than 3m	-/60/60	-/90/90	-/180/120	-/240/180
3m or more	-/-/-	-/-/-	-/-/-	-/-/-

Table S5C11c: Type A Construction: FRL of external columns non incorporated in an external wall

Column type	FRL (in minutes): Structural Adequacy/ Integrity/ Insulation			
	Class 2,3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing	90/-/-	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/-/-	-/-/-	-/-/-	-/-/-

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

Wall type	FRL (in minutes): Structural Adequacy/ Integrity/ Insulation			
	Class 2,3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing or non-loadbearing	90/90/90	120/120/120	180/180/180	240/240/240

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

Location	FRL (in minutes): Structural Adequacy/ Integrity/ Insulation			
	Class 2,3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair shafts	90/90/90	120/120/120	180/120/120	240/120/120
Bounding public corridors, public lobbies and the like	90/90/90	120/-/-	180/-/-	240/-/-

Between or bounding sole-occupancy units	90/90/90	120/-/-	180/-/-	240/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion	90/90/90	120/90/90	180/120/120	240/120/120

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

Location	FRL (in minutes): Structural Adequacy/ Integrity/ Insulation			
	Class 2,3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair shafts	-/90/90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like	-/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy units	-/60/60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion	-/90/90	-/90/90	-/120/120	-/120/120

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

Location	FRL (in minutes): Structural Adequacy/ Integrity/ Insulation			
	Class 2,3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Other loadbearing internal walls, internal beams, trusses and columns	90/-/-	120/-/-	180/-/-	240/-/-
Floors	90/90/90	120/120/120	180/180/180	240/240/240
Roofs	90/60/30	120/60/30	180/60/30	240/90/60

(3) Carparks

For building elements in a carpark as described in (1) and (2), the following minimum FRLs are applicable:

- a) External wall:
 - i. Less than 3 m from a fire-source feature to which it is exposed:
 - A. Loadbearing: 60/60/60.
 - B. Non-loadbearing: -/60/60.
 - ii. 3 m or more from a fire-source feature to which it is exposed: -/-/-.
- b) Internal wall:
 - i. Loadbearing, other than one supporting only the roof (not used for carparking): 60/-/-.
 - ii. Supporting only the roof (not used for carparking): -/-/-.
 - iii. Non-loadbearing: -/-/-.
- c) Fire wall:
 - i. From the direction used as a carpark: 60/60/60.
 - ii. From the direction not used as a carpark: as required by Tables S5C11a to S5C11g.

- d) Columns:
- i. Supporting only the roof (not used for carparking) and 3 m or more from a fire-source feature to which it is exposed: –/–/–.
 - ii. Steel column, other than one covered by (i) and one that does not support a part of a building that is not used as a carpark—
 - A. 60/–/–; or
 - B. an ESA/M of not greater than 26m²/tonne.
 - iii. Any other column not covered by (i) or (ii): 60/–/–.
- e) Beams:
- i. Steel floor beam in continuous contact with a concrete floor slab
 - A. 60/–/–; or
 - B. an ESA/M of not greater than 30m²/tonne.
 - ii. Any other beam: 60/–/–.
- f) Fire-resisting lift and stair shaft (within the carpark only): 60/60/60.
- g) Floor slab and vehicle ramp: 60/60/60.
- h) Roof (not used for carparking): –/–/–.
- (4) For the purposes of subclause (3):

a) ESA/M means the ratio of exposed surface area to mass per unit length.

Refer to Specification 17 for special requirements for a sprinkler system in a carpark complying with (3) and (b) located within a multi-classified building.