

BCA Assessment Report

Building 2A

Precinct 2 - Oakdale East Industrial Estate

SSDA-120888992

Prepared for:

Goodman Property Services
(Aust) Pty Ltd

Revision 4

02 July 2026



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Executive Summary

The following comprises a summary of the key compliance issues identified under the assessment in this report that will be required to be addressed prior to the Certification Applications for the project.

A. Matters requiring redesign or additional information at CC:

+ BCA (DtS) Clause	+ Description
1. C3D13 / C3D14	Details of any proposed Fire Separation of Equipment & Electrical infrastructure to be provided at CC Application stage.
2. D3D9	The cupboard located under the stair is required to have enclosing walls and ceilings achieving an FRL of 60 minutes and the doorway will need to be fitted with a self-closing -/60/30 fire door.
3. D3D14 – D3D22	Detailed plans of all stairways, balustrades and handrails within the proposed development must be provided for review.
4. Part D4, F4D4	A separate report will be required from an Access Consultant to outline the applicable requirements for the building. Specific details regarding the possible application of D4D5 to the various Class 7b portions of the building will also be required.
5. D4D5	Consideration to an exemption to the Warehouse areas of each building may be appropriate. Confirmation from the building owner stating where this would be applied and the reasons why it would be inappropriate for access for people with disabilities within the facility to be provided at CC application stage.
6. E1D17 & E2D21	Where applicable, details of additional fire services & smoke hazard management requirements to address additional hazard resulting from any proposed dangerous goods storage/use are to be provided at CC Application stage.
7. F6D6	Provide details of the proposed method of compliant ventilation to the warehouse portions of the buildings is to be provided at C Application stage.
8. Section J	A Section J Compliance Report or JV3 Report will be required to be provided with the CC application.

B. Matters requiring fire safety engineered performance solutions:

+ BCA (DtS) Clause	+ Description
1. C3D4 / C3D5	A Performance Solution is required to address the Perimeter Vehicular Access non-compliances to the building.
2. Spec. 5	The external columns to the awning on the northern elevation of the building are less than 3m to the boundary and as such are required to achieve an FRL per Table S5C24b.

+ BCA (DtS) Clause		+ Description
		Any proposal to reduce the FRLs of building elements that are required to be fire rated must be addressed as a Performance Solution from the Fire Engineer.
3.	D2D5, D2D6	The current plans indicate that exit travel distances, and distances between alternative exits within the building will not comply with D2D5 & D2D6.
4.	E1D2	Design of fire hydrant systems per AS 2419.1-2021 Appendix C as the volume of the building is >108,000m ³ .
5.	E1D2/4	Further design development is required with respect to the location of the hydrant & sprinkler booster assemblies in order to determine whether a Fire Engineered Performance Solution is required.

C. Other matters requiring performance solutions:

+ BCA (DtS) Clause		+ Description
1.	Part D4	DDA/Access Performance Solution Report requirement - TBC
2.	F3P1	A Performance Solution report is to be provided by the Architect / Façade Engineer to demonstrate how the external walls are designed to prevent the penetration of water into the building.
3.	Section J	A JV3 Report may be required to be provided with the CC application.

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+ Status	Final Report - Updated to include Client Comments		
+ Revision	3	+ Date	25.05.2026
+ Status	Final Report - Updated to include Client Comments (Updated Drawings)		

1.0 Description of Project

1.1 Proposal

bm+g have been commissioned by Goodman Property Services (Aust) Pty Ltd to undertake an assessment of the proposed development at Precinct 2, Oakdale East Industrial Estate against the relevant provisions of the Building Code of Australia 2022 Amendment 2 (BCA). This report has been prepared to address the following Development Applications:

- + **Concept Plan Amendments (Mod 6):** Amendments to State Significant Development Application 37486043 (as modified) in accordance with Section 4.24 of the *Environmental Planning & Assessment Act 1979*
- + **Detailed Application (Proposed Works):** State Significant Development Application (SSDA) No. [SSDA number 120888992] based on Industry-specific Secretary's Environmental Assessment Requirements (SEARs) received dated 8 May 2026.

The proposed development is being undertaken by Goodman Property Services (Aust) Pty Ltd (Applicant) on behalf of BGMG 14 Pty Ltd (ACN 661 888 884) as trustee of BGMG 1 Oakdale East Trust No.2 (Owner). The development is located at 2-10 Old Wallgrove Road, Horsley Park (the Site). The folio identifier number is Lot 109 of Deposited Plan 1293112.

The below further outlines the respective works the Development Applications seek approval for.

Concept Plan approval Amendments | State Significant Development Application [37486043] (Mod 6)

As part of the proposed works under SSD 120888992, the following amendments are proposed to the Concept Plan and Stage 1 Infrastructure works approved under SSDA 37486043:

- Amendment to approved Masterplan and Subdivision plan to accommodate revised Precinct 2-5 layout which will consolidate Precincts 2, 4 and 5, resulting in a total of three (3) precincts. (Precinct 1, 2 & 3).
- Amendment of Stage 2 infrastructure scope to accommodate revised and consolidated Precinct 2-5 layout
- Amendment of Development Controls, including those prescribed under Condition A9 & A10 of the consent, specifically:
 - o Building Height from 15m and To 25m (excluding rooftop plant, roof access stairs and solar)
 - o Maximum GLA from 317,867 sqm and to 316,962 sqm
- Increase maximum permissible vehicle from a 30 m super B-double to a 36.5m B-triple (Condition D14)

This application, inclusive of the amendments to the Concept Plan under SSD 37486043, seeks to facilitate the development of Building 2A, 2B & Lot 2C and associated Internal infrastructure changes.

Detailed Application | State Significant Development Application [120888992]

The SSDA seeks approval for the construction, fit-out, operation and use of 2 warehouse buildings and associated internal site infrastructure works to accommodate the proposed building layouts. Specifically, this includes:

- + **Warehouses and Distribution Building – Building 2A**

- 24/7 warehouse and distribution use
- Construction, operation, fit-out (warehouse racking and office fit-out) and use of approximately 18,110 sqm warehouse with ancillary office GLA. Proposed ridge height of 14.6m (excluding rooftop plant and solar).
- Includes hardstand, dock offices, loading bays, landscaping, electric vehicle charging, solar panels and signage.

+ Warehouses and Distribution Building – Building 2B & Lot 2C

- 24/7 warehouse and distribution use for an automated mail and parcel processing and sorting.
- Construction, operation, fit-out (office and warehouse) and use of approximately 142,157 sqm of warehouse and office GLA across two levels spanning a proposed ridge height of 25.0m (excluding rooftop plant, roof access stairs and solar).
- Warehouse fit-out includes automation and sortation equipment along with associated mezzanine structures.
 - Building 2B will include hardstand, heavy rigid parking, guardhouses, dock offices, loading bays, landscaping, electric vehicle charging, goods collection lockers, solar panels, six lithium-ion battery energy storage systems (BESS) external to the main warehouse building and fleet workshop, weighbridges, fleet workshop, dock temperature control with external units, emergency generators, refuelling bay, truck wash and signage.
 - Dangerous goods (DGs) are proposed to be stored at the site, which are below the threshold quantities under Chapter 3 of the *State Environmental Planning Policy (Resilience and Hazard) 2021*.
- Ground Improvements to Warehouse 2B building footprint (i.e Pilling), including a 200mm thick layer of Cement Treated Fine Crushed Rock (CTFCR) placed under the entire warehouse footprint.

Internal Estate Infrastructure

- Bulk Earthworks to Precinct 2 (formally Precinct 2, 4 & 5)
 - Approx. 550,000m³ fill importation required as either Virgin excavated natural material (VENM), Excavated Natural Material (ENM) or Resource Recovery Order under S 286A of the PoEO Act 1997
 - Importation proposed to be 24 hours, 7 days a week during the Fill Importation program
 - Export any unsuitable material (i.e Topsoil and Clay)
- Retaining Walls (including importation of Engineered backfill)
- Stormwater Basin D (including fit-out)
- Construction and associated Easement to Drain of Stage 1 stormwater discharge line through Building 2B to Basin C
- Stage 1 road and servicing amendments to reflect revised Precinct 2, 4 & 5 building layout
- Noise barriers
- Lead-in services including additional 11kv feeder via the extension of HV feeders from existing Endeavour Energy switching stations within Roberts Road and Capicure Drive

+ Other

- Expansion and on-going management of DA 347.1/2021 Containment Cell
- Subdivision of Precinct 2, 4 & 5 to suit revised precinct plan and ultimate lot layout

Related Applications/Activities

Fairfield City Council Development Application DA 347.1/2021 (as modified) – Rehabilitation Works

A Fairfield City Council Development Application DA 347.1/2021 (as modified) has previously been approved over the site facilitating Bulk Earthworks and Rehabilitation (including an initial Containment Cell) Works at the Site to provide relative levels suitable for future industrial development.

These levels are:

- - Precinct 2 (western portion): BE 77.5
- - Precinct 2 (eastern portion): BE 71.5
- - Precinct 3: BE 77.0
- - Precinct 4: BE 70.0

Proposed SSD 120888992 assumes these levels and works in respect of assessment of environmental impacts previously assessed in accordance with Clause 4.63 (a) Environmental Planning & Assessment Act 1979. Further re-assessment is therefore not required.

DA 347.1/2021 assessed the Environmental Impacts associated with the required rehabilitation to achieve the above Bulk Earthworks levels.

Notwithstanding, DA 347.1/2021 (as modified) is currently unable to be fulfilled as the consent approves a shortfall of:

- Fill importation required to achieve the above FCC approved rehab levels
- Contamination cell size required to fulfill rehabilitation obligations under the Fairfield City Council consent and associated Rehabilitation Action Plan.

SSD 120888992 assess and seeks approval to address these shortfalls as part of the Environmental Impact Assessment.



Figure 1 – 3D View Perspectives (Source: SBA Architects)

1.2 Aim

The aim of this report is to:

- + Undertake an assessment of the proposed development against the deemed-to-satisfy provisions of the BCA.
- + Identify matters that require plan amendments in order to achieve compliance with the BCA.
- + Identify matters that are to be required to be addressed by Performance Solutions.
- + Enable the certifying authority to satisfy its statutory obligations under Clause 19(1) of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.

1.3 Project Team

The following **bm+g** team members have contributed to this Report:

- + **Nini Quach** – Report Preparation (Building Surveyor) | Building Surveyor
- + **Dean Goldsmith** – Peer Review (Director) | Building Surveyor-Unrestricted
- + **Michael Potts** – Access Consultant

1.4 Referenced Documentation

The following documentation has been reviewed, referenced and/or relied upon in the preparation of this report:

- + Building Code of Australia 2022 (BCA) Amendment 2
- + The Guide to the Building Code of Australia 2019 (Amendment 1)
- + Architectural Plans prepared by SBA Architects numbered:

+ Drawing No.	+ Revision	+ Date
DA50.00	A	21.05.2026
DA51.00	A	21.05.2026
DA52.00	A	21.05.2026
DA52.01	A	21.05.2026
DA52.02	A	21.05.2026

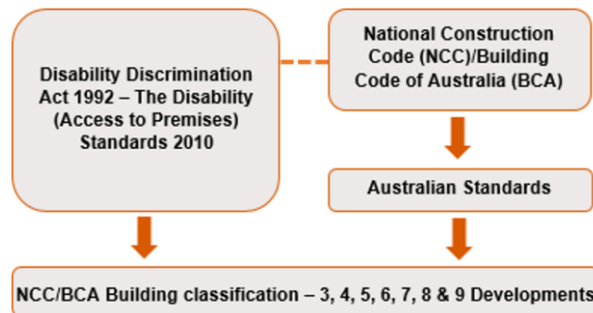
+ Drawing No.	+ Revision	+ Date
DA52.03	A	21.05.2026
DA53.00	A	21.05.2026
DA53.01	A	21.05.2026
DA54.00	A	21.05.2026

1.5 Regulatory Framework

- + Pursuant to Section 19(1) of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 all new building work must comply with the current BCA however the existing features of an existing building need not comply with the BCA unless upgrade is required by other clauses of the legislation.

- + The assessment has been undertaken in accordance with Clause 24 and 25 of the Building and Development Certifiers Regulation 2020. **bm+g** are the proposed Registered Certifier and the advice provided in this Report is limited to whether submitted documentation complies with the Building Code of Australia or a legislative requirement.

The below figure represents the statutory framework addressing accessibility as noted in the below Act, Code and Standards.



The Disability Discrimination Act 1992 (DDA) is Commonwealth legislation enacted in 1993 that seeks to ensure that all new building infrastructure, refurbishments, services and transport projects provide independent and equitable access. The DDA is a complaints based legislation administered by the Australian Human Rights Commission (AHRC).

Subordinate to the DDA are the Disability Standards, which include; Disability (Access to Premises – Buildings) Standards 2010, Disability Standards for Education 2005, and the Disability Standards for Accessible Public Transport 2002. These Disability standards refer back to the AS 1428 suite of standards and Building Code of Australia.

Since 2011, the Building Code of Australia has adopted the key accessibility provisions of the Disability (Access to Premises – Buildings) Standards 2010, with compliance with AS 1428.1 – 2021, AS 1428.4.1 – 2009, and AS 2890.6 – 2009 becoming mandatory. As such, compliance with the relevant sections of the BCA ensures compliance with the Disability (Access to Premises – Buildings) Standards 2010 and vicariously the DDA.

With respect to existing works, there are statutory upgrade requirements within the Disability (Access to Premises – Buildings) Standards 2010 that apply to all building works which require consent (including Crown building work). This relates to the upgrade of any 'affected part' of the building, which includes;

- + The principal pedestrian entry (i.e. entry door and ramp), and
- + The pathway / corridor / lift / ramp which form an accessible path of travel to any area of new work (note: only one accessible path of travel is required to any new part under this requirement).

Section 23 of the Disability Discrimination Act DDA 1992 states;

It is unlawful for a person to discriminate against another person on the ground of the other person's disability:

- By refusing to allow the other person access to, or the use of, any premises that the public or a section of the public is entitled or allowed to enter or use (whether for payment or not); or
- In the terms or conditions on which the first-mentioned person is prepared to allow the other person access to, or the use of, any such premises; or
- In relation to the provision of means of access to such premises.

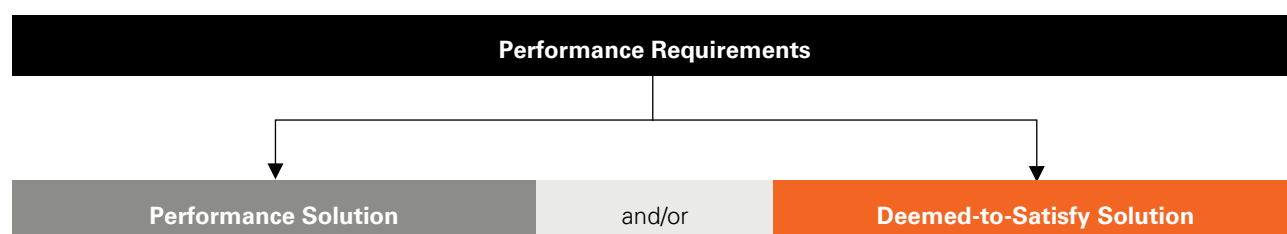
The DDA Act 1992 is a complaints-based legislation whilst compliance with The Disability (Access to Premises) Standards 2010 affords some certainty regarding the minimum compliance requirements it does not prevent a claim being made under the DDA Act 1992. Whilst implementing the minimum compliance requirements under the Disability (Access to Premises) Standards 2010 and BCA will satisfy the minimum compliance requirements there is nothing preventing a greater degree of access than those minimum requirements specified.

- + Note: The below report also includes recommendations for best practice/non mandatory items for consideration by the project team stakeholders and as applicable have been identified in the below report in *italics*.

1.6 Relevant Version of the NCC Building Code of Australia

Pursuant to Section 19 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 the proposed building is subject to compliance with the relevant requirements of the BCA as in force at the day on which the application for the Construction Certificate is made. The current version of the BCA is BCA 2022 Amendment 2, with the next revision of the BCA (2025) coming into effect in May 2027.

1.7 Compliance with the National Construction Code



Compliance with the NCC is achieved by complying with:

- + the Governing Requirements of the NCC; and
- + the Performance Requirements.

Performance Requirements are satisfied by one of the following, as shown in the Figure below:

- + A Performance Solution.
- + A Deemed-to-Satisfy Solution.
- + A combination of the above two options.

1.8 Limitations and Exclusions

The limitations and exclusions of this report are as follows:

- + This report is prepared in accordance with the Conflicts of Interest provisions of Part 4 of the Building and Development Certifiers Regulation 2020. **bm+g** confirm that this report is prepared specifically to address the requirements of Clause 25(5) and (9) of the Regulation with respect to the role of the Registered Certifier.

This assessment report is not to be construed as extending any further into providing design advice, which would be contrary to the aims of this legislation.

- + No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner needs be satisfied that their obligations under the DDA have been addressed.

- + Please note that whilst the BCA specifies a minimum standard of compliance with AS1428 (Parts 1-3) and Part D4 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the DDA 1992. The DDA is a complaint based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the building owner should be satisfied that their obligations under the DDA have been addressed.
- + No assessment has been undertaken with respect to SEPP (Housing) 2021. It is understood that suitably qualified consultants will be engaged to determine the relevance of any Council planning requirements or SEPP requirements and provided detailed assessment reports where applicable.

Where relevant to this development, it is assumed that these assessments will be undertaken by others.
- + This report does not consider BCA Part G5 (Volume 1) which makes provision for construction of buildings in bushfire-prone areas, therefore no assessment has been undertaken in consideration of RFS, Planning for Bushfire Protection and AS 3959. Where Part G is applicable to the site, then it is required that assessment / due diligence is undertaken by a specialist consultant to verify compliance.
- + This report does not constitute a detailed assessment of the architectural documentation against the requirements of Section J. It is understood that a suitably qualified consultant will be engaged to determine compliance in this regard.
- + **bm+g** has not undertaken an assessment of any Performance Solution Reports at the time of the preparation of this report.
- + The Report does not address matters in relation to the following Local Government Act and Regulations:
 - Work Health and Safety Act and Regulations.
 - Work Cover Authority requirements.
 - Water, drainage, gas, telecommunications and electricity supply authority requirements.
 - Disability Discrimination Act 1992.
- + **bm+g** cannot guarantee acceptance of this report by Local Council, Fire & Rescue NSW or other approval authorities.
- + No part of this document may be reproduced in any form or by any means without written permission from **bm+g**. This report is based solely on client instructions, and therefore should not be used by any third party without prior knowledge of such instructions.

1.9 Report Terminology

Access for People with Disabilities - Access to a building which is planned to minimise obstacles or hazard to disabled persons.

Accessible – Means having features to permit use by people with disabilities

Accessway – Means a continuous accessible path of travel to or within a building suitable for people with disabilities as defined in AS 1428.1

Braille – A system of touch reading for the blind, which employs raised dots that are evenly arranged in quadrangular letter spaces or cells.

Building Code of Australia – Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

Climatic Zone – Means an area defined in Figure 2 and in Table 2 (of BCA Schedule 3) for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Construction Certificate – Building Approval issued by the Certifying Authority pursuant to Part 6 of the EP&A Act 1979.

Construction Type – The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C2D2 and Specification 5, except as allowed for:

- + certain Class 2, 3 or 9c buildings in C2D6; and
- + a Class 4 part of a building located on the top storey in C2D4(2); and
- + open spectator stands and indoor sports stadiums in C2D8.

***Note:** Type A construction is the most fire-resistant and Type C the least fire-resistant of the types of construction.*

Dedicated Parking Space – a parking space set aside exclusively for the parking of a single vehicle for a person with a disability.

Deemed-to-Satisfy (DtS) Provisions of the BCA – Means the prescriptive provisions of the BCA which are deemed to satisfy the performance requirements.

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

Exit – Any, or any combination of the following if they provide egress to a road or open space:

- + An internal or external stairway.
- + A ramp.
- + A fire-isolated passageway.
- + A doorway opening to a road or open space.

Fire Compartment – The total space of the building; or when referred to in

- + The Performance Requirements – any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or
- + The Deemed-to-Satisfy Provisions – any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of construction and where all openings in the separating construction are protected in accordance with the Deemed-to-Satisfy Provisions of the relevant part.

Fire Resistance Level (FRL) – The grading periods in minutes for the following criteria:

- + structural adequacy; and
- + integrity; and
- + insulation.

and expressed in that order.

Fire Source Feature (FSF) – The far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

Hearing Augmentation – The communication of information for people who are deaf or hearing impaired by using a combination of audio, visual, and tactile means

Luminance Contrast - The light reflected from one surface or component, compared to the light reflected from another surface or component.

National Construction Code Series (NCC) – The NCC was introduced 1 May 2011 by the Council of Australian Governments (COAG). The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

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

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

Occupation Certificate (OC) – Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 6 of the EPA Act 1979.

Open Space – Means a space on the allotment, or a roof or other part of the building suitably protected from fire, open to the sky and connected directly with a public road.

People with Ambulant Disabilities - People who have a mobility disability but are able to walk.

Performance-Based Design Brief – Means the process and the associated report that defines the scope of work for the performance-based analysis, the technical basis for analysis, and the criteria for

acceptance of any relevant Performance Solution as agreed by stakeholders.

Performance Requirements of the BCA – A Building Solution will comply with the BCA if it satisfies the Performance Requirements. A Performance requirement states the level of performance that a Building Solution must meet.

Compliance with the Performance Requirements can only be achieved by-

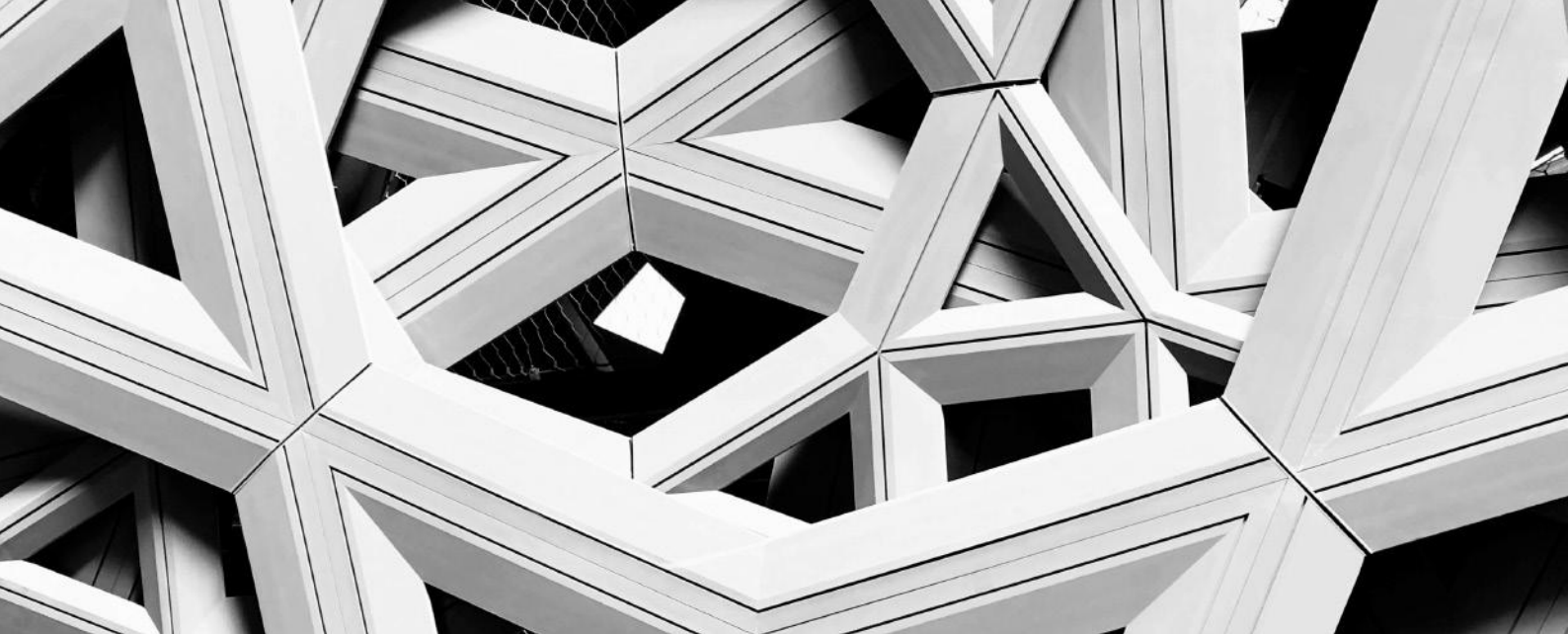
- + complying with the Deemed-to-Satisfy Provisions; or
- + formulating an Performance Solution which-
 - complies with the Performance Requirements; or
 - is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or
- + a combination of (a) and (b).

Performance Solution – Means a method of complying with the performance requirements other than by a Deemed-To-Satisfy Solution.

Sensory Impairment - Any significant loss of hearing or vision.

Shared Area (for carparking) – An area adjacent to a dedicated space provided for access or egress to or from a parked vehicle and which may be shared with any other purpose that does not involve other than transitory obstruction of the area, e.g. a walkway, a vehicular aisle, dual use with another adjacent dedicated space.

Slip Resistant – A property of a surface having a frictional force-opposing movement of an object across a surface.



2.0 Building Characteristics

2.1 Proposed Development

The proposed development consists of the construction of a warehouse with an ancillary office, carparking, hardstand and landscaping.

The building is classified as follows:

+ BCA Classifications:	Class 5 (Office) Class 7b (Warehouse)
+ Rise in storeys:	Two (2)
+ Type of Construction:	Type C Construction
+ Importance Level (Structural)	Level 2 (Structural Engineer to Confirm)
+ Sprinkler Protected Throughout	Yes
+ Effective Height	Less than 12m
+ Largest Fire Compartment Size	Less than 18,000m ² & Greater than 108,000m ² *
+ Climate Zone	Zone 6

**Refer to C3D3 – As the building has been designated as a Large Isolated Building, the maximum fire compartment sizes under Table C3D3 do not apply.*

2.2 Fire Compartment Floor Area Limitations

Maximum size of fire compartment/atria permissible in Table C3D3 is:

+ Classification		+ Type A	+ Type B	+ Type C
6, 7, 8 or 9a	Max. floor area	5,000m ²	3,500m ²	2,000m ²
	Max. volume	30,000m ³	21,000m ³	12,000m ³
5, 9b or 9c	Max. floor area	8,000m ²	5,500m ²	3,000m ²
	Max. volume	48,000m ³	33,000m ³	18,000m ³

Note: Table C3D3 is not applicable to a Large Isolated Building.

2.3 Distance to Fire Source Features

Based upon a review of the plans, it is noted that each elevation of the building is located within the following distances from fire source features on the site.

+ Elevation	+ Fire Source Feature	+ Distance
North	Side or rear boundary	>3m
East	Side or rear boundary	>3m
West	Side or rear boundary	>3m
South	Side or rear boundary	>3m

3.0 BCA Assessment

We note the following BCA compliance matters with relation to proposed building works are capable of complying with the BCA. Please note that this is not a full list of BCA clauses, they are the key requirements that relate to the proposed work and the below should be read in conjunction with the BCA.

3.1 Section B – Structure

Part B1

- + New building works are to comply with the structural provisions of the BCA 2022 and the following referenced standards including:
 - o AS 1170.0 – 2002 General Principles
 - o AS 1170.1 – 2002, including certification for balustrades (dead and live loads)
 - o AS 1170.2 – 2021, Wind loads
 - o AS 1170.4 – 2007, Earthquake loads
 - o AS 3700 – 2018, Masonry Structures
 - o AS 3600 – 2018, Concrete Structures
 - o AS 4100 – 1998, Steel Structures and/or
 - o AS 4600 – 2018, Cold formed steel Structures
 - o AS 2159 – 2009, Piling Design & Installation
 - o AS 1720 – 2010, Design of Timber Structure
 - o AS/NZS 1664.1 & 2 – 1997, Aluminium Structures
 - o AS 2047 – 2014, Windows and External Glazed Doors in buildings
 - o AS 1288 – 2006, Glass in buildings
 - o AS 3660.1 – 2014, Termite control (or confirmation no primary building elements are timber).
- + Design certification will also be required from the Architect and Services Consultants to confirm compliance with Section 8 of AS1170.4-2007 with regard to the design of non-structural parts and components and their fastenings for horizontal and vertical earthquake forces and inter-storey drift.
- + In accordance with B1D3(a)(iv) a notional additional load of not less than 0.15kPa to support the addition of solar photovoltaic panels is to be applied to the roof structure.
- + The Importance Level provisions of BCA (Section B) are to be acknowledged by the Structural Engineer and addressed to the degree necessary.
- + New building works to the existing building must be compliant with earthquake provisions of AS1170.4 – Earthquake Actions in Australia.

Comment: Structural design details and certification will be required at CC application stage

3.2 Section C – Fire Resistance

C2D2 & Spec 5

Type of Construction Required: The building is required to comply with the requirements of Type C Construction as stated within Specification 5. The table below provides an overview of the requirements of each. Refer to Table 4 of Appendix 1 for the FRL requirements of Type C Construction.

	Type C Construction: + External walls (and columns incorporated within) need not achieve an FRL if >3m from a boundary or separate building. Where required, external walls of Type C Construction only require an FRL from the outside and not in both directions. + Floors need not achieve an FRL, subject to Cl. S5C3. + Roofs need not achieve an FRL. + Internal columns need not achieve an FRL. Comment: The proposed building will be subject to compliance with the Type C Construction provisions of tables S5C24a to S5C24e.
C2D3	Calculation of Rise in Storeys: The rise in storeys of a building is the sum of the greatest number of storeys at any part of the external walls of the building and any storeys within the roof space calculated in accordance with the requirements set out in this clause. Comment: The proposed building has a rise in storeys of 2.
C2D11 & Spec. 7	Fire Hazard Properties: A schedule of all wall, floor, and ceiling linings along with associated test reports are to be provided for review to ensure compliance with the fire hazard property requirements of the BCA. Noting: + Minimum Group Numbers apply to wall and ceiling linings. AS 5637 test reports must be provided to determine compliance. + Minimum Critical Radiant Flux values apply to floor linings. AS ISO 9239.1 test reports must be provided to determine compliance Refer to Table 2 and 3 in Appendix 1 below for the required fire hazard properties. Comment: Design certification will be required at CC application stage and installation certification (including relevant test reports confirming the critical radiant flux of floor linings and group number of wall and ceiling linings) required at OC stage.
C2D12	Performance of External Walls in Fire: Concrete, pre-cast/tilt-up wall panels in buildings with a rise in storeys of 1 or 2 are required to comply with the requirements of Spec. 8. Comment: Certification to be provided by the Structural Engineer confirming compliance, where pre-cast/tilt-up wall panels are proposed.
C3D3	General Floor Area and Volume Limitations: The building is to achieve fire compartment sizes not in excess of the DtS requirements of this clause. Comment: The proposed building has been designated as a Class 7b Large Isolated Buildings and as such the provisions for maximum fire compartment size under Table C3D3 do not apply. Refer to comments under C3D4 & C3D5 below in relation to the Large Isolated Building provisions applicable to the proposed development.
C3D4	Large Isolated Buildings: A Large Isolated Building that contains Class 5, 6, 7, 8 or 9 parts, is required to be— + Protected throughout with a sprinkler system complying with Specification 17; and + Provided with a perimeter vehicular access complying with C3D5(2). Comment: The proposed building is required to be sprinkler protected and provided with a 6m wide perimeter vehicular accessway in accordance with Clause C3D5(2) throughout (see notes below). Note 1: Any proposed gates are to achieve no less than 6m unobstructed width or the reduced width will need to be included in the above Performance Solution. Note 2: The driveways providing vehicular perimeter access must be designed with adequate loading capacities, gradients and swept paths to accommodate a fire truck, having regard to the FRNSW Fire Safety Guideline – Access for Fire Brigade Vehicles and Firefighters. Note 3: The Trial Design for the Fire Engineered Performance Solution must take into consideration and detail the proposed security access to the site and how this may impact on FRNSW vehicular access.

C3D5

Requirements for Open Spaces and Vehicular Access: Open space and vehicular access required by C3D4 must comply with the requirements of sub-clauses (a) & (b) of this Part whereby they must be 6m wide within 18m of the external walls of the building and of a suitable bearing capacity and unobstructed height to permit the operation and passage of FRNSW vehicles.

Comment: The building does not comply with the provisions of C3D5 and thus the following non-compliances are to be addressed as a Performance Solution by the fire engineer to demonstrate compliance with Performance Requirement CP9.

- + Perimeter Vehicular Access is less than 6m on the northern side of the building along the hardstand
- + Perimeter Vehicular Access is greater than 18m from the building along the western elevation of the site.
- + Perimeter Vehicular Access requires travel under the lightweight awning structure on the northern side of the building.

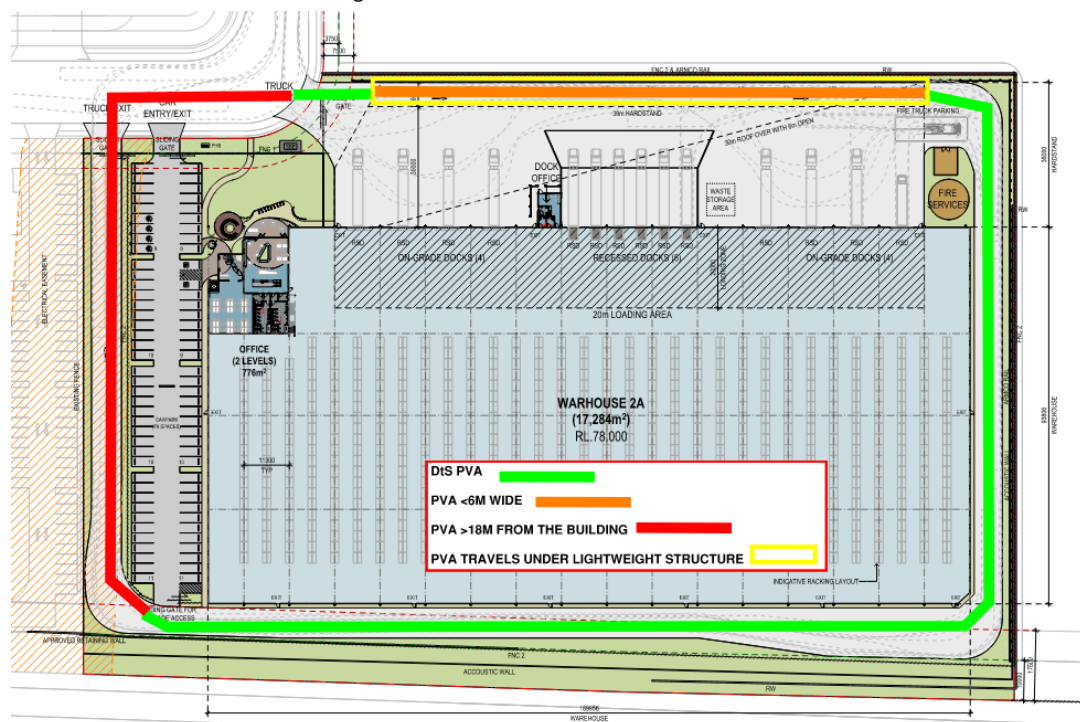


Figure 2 – Perimeter Vehicular Access Non-Compliances

C3D9 & C3D10

Separation of Classifications: Separate classifications will either need to be separated by a fire wall achieving the higher FRL requirement between the two classes, or alternatively the higher FRL must apply to both areas subject to Spec 5.

Note: Refer to C3D8 comments above in regards to structural elements crossing a fire wall at roof level.

Comment: The provisions of C3D9(1)(a) can be applied to the Warehouse and Office parts on Ground Floor as the different classifications have the same FRL requirements under Spec. 5.

C3D13

Separation of Equipment: Equipment as listed below must be separated from the remainder of the building with construction that achieves an FRL of 120/120/120 (or that required by Spec. 5, whichever is greater) and doorways being self-closing -/120/30 fire doors:

- + Lift motors and lift control panels; or
- + Emergency generators used to sustain emergency equipment operating in emergency mode; or
- + Central smoke control plant; or
- + Boilers; or

	+ A battery or battery system installed in the building that has a voltage of 12 volts or more and a storage capacity of 200kWh or more. Confirmation is required as to whether any of the above will be applicable to this development. Comment: Where appropriate, details demonstrating compliance are to be included in the CC Application plans.
C3D14	Electricity Supply System: An electricity substation, electrical conductors & main switchboards which sustain 'emergency equipment' operating in the emergency mode, located within a building must— + Be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and + Having any doorway in that construction protected with a self-closing fire door having an FRL of not less than -/120/30 - Electrical conductors which supply a substation or main switchboard sustaining emergency equipment operating in the emergency mode – + Have a classification in accordance with AS/NZS 3013 of not less than— - o If located in a position that could be subject to damage by motor vehicles — WS53W; or - o Otherwise — WS52W; or + Be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120. Where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment switchgear must be separated from the non-emergency equipment switchgear by metal partitions designed to minimise the spread of fault from the non-emergency equipment switchgear. Note: For the purpose of this clause, 'emergency equipment' includes (but is not limited to) fire pumps, air handling systems for smoke control, emergency lifts, control & indicating equipment, EWIS. Comment: Where appropriate, details demonstrating compliance are to be included in the CC Application plans. This is particularly relevant to the main electrical switch rooms in warehouse that are required to be fire separated in accordance with the above requirements.
C4D13	Openings in Floors and Ceilings for Services: This clause applies to the floors and ceilings in buildings of Types A, B & C Construction and sets out the methods required to limit the spread of fire through openings in these building elements, required to resist the spread of fire. Comment: Note – see C3D14 & C3D15. Certification and appropriate test reports will be required for assessment at OC Application stage.
C4D15	Openings for Services Installations: All opening for services installations in building elements required to be fire-resisting with respect to integrity and insulation must be protected in accordance with the provisions of Spec. 13. Comment: Note – see C3D14 & C3D15. Certification and appropriate test reports will be required for assessment at OC Application stage.
Spec. 5	Fire Resisting Construction: The new building works are required to comply with the requirements detailed under Specification 5. The below details the FRL requirements for building elements for each proposed warehouse. Comment: The proposed development will be subject to compliance with the Type C Construction provisions of tables S5C21a to S5C21g as summarised below: + All external walls & loadbearing elements incorporated in or attached to an external wall are to achieve the required FRL per Table S5C24a. + All loadbearing external columns are to achieve the required FRL per Table S5C24b. + Any Fire Walls that are proposed to separate different classifications per C3D9 above are to achieve the required FRL per Table S5C24c.

	+ All internal stair shaft walls and walls bounding SOUs, as well as any associated columns, walls, beams and trusses throughout are to achieve the required FRL per Table S5C21d. Comment: The external columns to the awning on the northern elevation of the building are less than 3m to the boundary and as such are required to achieve an FRL per Table S5C24b. Any proposal to reduce the FRLs of building elements that are required to be fire rated must be addressed as a Performance Solution from the Fire Engineer.
Spec. 7	Fire Hazard Properties: As noted above, this Specification sets out the requirements in relation to the fire hazard properties of linings, materials and assemblies in Class 2 to 9 buildings. Table S7C2 outlines the applicable requirements of Spec. 7 to the different types of Linings, Materials and Assemblies. Comment: Certification will be required to be provided at both CC and OC application stages.
Spec. 8	Performance of External Walls in Fire: This specification contains measures to minimise in the event of fire the likelihood of external walls collapsing outwards as complete panels and the likelihood of panels separating from supporting members. Comment: Structural Design certification and details demonstrating compliance are required to be provided at CC Application Stage for the proposed warehouses.

3.3 Section D – Access and Egress

D2D3	Number of Exits Required: The building is required to be provided with 1 exits to each storey. Comment: The number of exits provided to the building achieve compliance with the requirements of this clause.
D2D5	Exit Travel Distances: This clause specifies the permitted travel distances allowable from Class 2 to Class 9 buildings. Sub-clauses (1) to (6) specify the maximum distances to be taken into account for the various uses in each Class of building. In a Class 5, 6, 7, 8 & 9 Buildings no point on a floor must be more than 20m for a single exit or to a point of choice to alternative exits; and no point on a floor must be more than 40m to an exit where 2 or more alternative exits are available for egress. Comment: A final travel distance assessment is to be conducted upon provision of the racking layouts for both warehouses. The exit travel distances in the proposed Warehouse building are non-compliant with the requirements of clause D2D5. In this regard the following non-compliance issues will be required to be addressed as a Performance Solution by the fire safety engineer to demonstrate compliance with Performance Requirements D1P4 & E2P2. + Up to 75m to an exit from the central parts of the warehouse.
D2D6	Distance Between Alternative Exits: Exits required as alternative exits must be – + Distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and + not less than 9m apart; and + not more than – 60m apart. + Located so that the alternative paths of travel do not converge such that they become less than 6m apart. Comment: A final travel distance assessment is to be conducted upon provision of the racking layouts for both warehouses. The distance between alternative exits are non-compliant within the warehouse and office. In this regard the following non-compliance issues will be required to be addressed as Performance

	Solutions by the Fire Safety Engineer to demonstrate compliance with Performance Requirements D1P4 & E2P2. + Up to 145m between alternative exits within the warehouses.																		
D2D7 – D2D11	Dimensions of Paths of Travel to an Exit: The minimum clear height through all egress paths is required to be no less than 2m, and a minimum of 1m wide (this width dimension is measured clear of any obstructions such as handrails and joinery). Aggregate exit widths must be achieved which are driven by occupancy numbers of each floor. Comment: Population numbers for the building are detailed under D2D18 below and based on these numbers compliance with D2D8 is readily achievable. Final details showing compliant dimensions of all exits (including minimum 1m wide clearances and min. clear height of 2.1m) from each building are to be confirmed on the CC Application plans.																		
D2D14	Travel Via Non Fire Isolated Required Stairways: A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. The distance from any point on the floor to a point of road or open space must not exceed 80m. The stair must discharge at a point not more than 20m to a point of road or open space, or from a fire-isolated passage, or 40m from one of two such points. Comment: The proposed exit stairs are capable of compliance with the discharge distances of D2D14.																		
D2D18	Number of Persons Accommodated: Clause D2D18 and Table D2D18 are used to calculate the anticipated number of people in particular types of buildings so that minimum exit widths and the required number of sanitary and other facilities can be calculated. This clause and table are not to be used for non-BCA purposes. Comment: The following population numbers have been calculated in accordance with Table D2D18 based on 10m² person in the office areas; and 30m² per person for the warehouse with 75% of the warehouse being allocated to circulation space. <table><tr><th colspan="6">Population Numbers as per Table D2D18</th></tr><tr><th>Unit/Area</th><th colspan="5"></th></tr><tr><td>Warehouse</td><td>144 persons</td><td>Office</td><td>77 persons</td><td>Dock Office</td><td>5 persons</td></tr></table> Note: The above population numbers may be considered excessive and as such more accurate numbers may be provided by Goodman/The tenant for assessment	Population Numbers as per Table D2D18						Unit/Area						Warehouse	144 persons	Office	77 persons	Dock Office	5 persons
Population Numbers as per Table D2D18																			
Unit/Area																			
Warehouse	144 persons	Office	77 persons	Dock Office	5 persons														
D3D4	Non-Fire Isolated Stairways and Ramps: In a building with a rise in storeys of more than 2, required non-fire-isolated stairways and ramps must be either constructed of + Reinforced or prestressed concrete; or + Steel at least 6mm thick at all points; or + Timber that has a finished thickness of at least 44mm, has an average density of at least 800 kg/m³ at a moisture content of 12% and has not been joined by means of glue unless it has been laminated and glued with resorcinol/phenol formaldehyde; or + Non-combustible materials, and such that if there is a structural failure it will not cause damage to or impair the fire-resistance of the shaft in which the stair is located. Comment: The requirements of D3D4 apply to the proposed stairs within each building. Details are to be provided of the stair design at CC application stage.																		
D3D8	Installations in Exits and Paths of Travel: This clause restricts the installation of certain services in fire-isolated exits, non-fire-isolated exits and certain paths of travel to exits. Sub-clauses (1) to (6) prescribe which services shall not be installed as well as the circumstances in which certain services may be installed in fire-isolated and non-fire-isolated exits. Comment: This requirement applies to all cupboards containing electrical distribution boards or comms. equipment that are located in a path of travel to an exit. In this regard, such cupboards are to be enclosed in non-combustible materials and are to be suitably sealed against the spread of smoke.																		

D3D9	Enclosure of Space under Stairs and Ramps: The space below a required, non-fire isolated stairway/ramp must not be enclosed to form a cupboard or other enclosed space, unless the cupboard is bound by construction achieving an FRL of at least 60/60/60, with a self-closing -/60/30 door. Comment: The cupboard located under the stair is required to have enclosing walls and ceilings achieving an FRL of 60 minutes and the doorway will need to be fitted with a self-closing -/60/30 fire door.
D3D14 – D3D16	Stairways, Landings, and Thresholds: + Stairway dimensions must comply with Table D3D14. + A stairway must have no more than 18, nor less than 2, risers in each flight. + Landings must be not less than 750mm in length. + Slip Resistance of stair nosings and landings must comply with Table D3D15. + A step is not permitted on either side of a doorway, closer than the width of the door swing. Doorways leading to external areas are exempted if the step down is $\leq 190\text{mm}$, though an accessible threshold ramp is required in accessible areas (refer to Part D4). Comment: All stairs are to have dimensions that comply with Table D3D14, have solid risers, and are to have contrasting nosings and slip resistant surfaces throughout in accordance with clause 11 of AS 1428.1-2009. (See diagram in Part D4 below). Architect to note, details demonstrating compliance will be required to be included in the CC plans.
D3D17 – D3D21	Balustrades or Other Barriers: These clauses detail where balustrades are required to be provided and sets out in specific detail the construction requirements. Typically, the following will apply to this class of building: + Balustrades are required where the fall to the level below is more than 1m in height. The minimum height of a balustrade is 1m above the floor of the landing, walkway or the like; and 865mm above the floor of a stairway or a ramp. + For a fall of more than 4m to the surface level below, a window sill must be a minimum of 865mm in height above the height of the floor surface. + Where the floor is more than 4m above the surface beneath the balustrade any horizontal or near horizontal members between 150mm and 760mm above the floor must not facilitate climbing. + Balustrades must be constructed so as to not permit a sphere of 125mm diameter to pass through. The exception to this is within fire isolated exits within the building, or internal stairs within a Class 7b or 8 building, where the rails can be positioned a maximum of 460mm apart, so long as a bottom rail is located so a sphere of 150mm cannot pass through the opening between the nosing of the stair treads and the rail or between the floor of the landing, balcony or the like. + Note: any wire barriers must be complaint with D3D21 and tables D3D21(a) to D3D21(c). Comment: Details demonstrating compliance are to be submitted with the CC Application drawings for assessment against the above criteria.
D2D22	Handrails: This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings. Comment: Architect to note, details demonstrating compliance will be required to be included in the CC plans. Handrails serving all stairs and ramps both internally and externally to the building are required to comply with the accessibility requirements of Clause D4D4 and AS 1428.1-2009.
D3D24	Doorways and Doors: This clause applies to all doorways that form an exit and refers to the types of doors that cannot be used in buildings of prescribed uses, the use of power operated doors and the force required to operate sliding doors. If an exit door is power operated, it must be opened manually under a force of not more than 110N if there is a malfunction or failure to the power source; and it must open automatically if there is a power failure to the door and upon the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.

	Comment: Architect to note – compliance readily achievable.
D3D25 & D3D26	Doors and Latching: All egress doorways must swing in the direction of egress and must be readily openable without a key from the side that faces a person seeking egress, by a single handed downward or pushing action on a single device which is located between 900mm and 1100mm from the floor. Comment: The proposed egress doors from the building are required to swing in the direction of egress in accordance with D3D25(1)(a). The current architectural plans indicate that compliance is achieved.
D4D2 & D4D3	General Building Access Requirements: The extent of access required depends on the classification of the building. Buildings and parts of building must be accessible as set out in sub-clauses (1)-(10) unless exempted by Clause D4D5. Access is required to and within all areas normally used by the occupants, for Class 5, 6, 7b & 9b buildings and any levels in a Class 7a building containing accessible carparking spaces. Comment: Compliant access is required from the allotment boundary to the main entry of the building and from accessible parking spaces to each building (in accordance with AS 1428.1-2009). Refer to D4D4 and D4D5 below. Compliance with D4D3 is readily achievable – details of grades of the accessways into the building is to be provided with the CC application.
D4D4	Parts of the Building to be Accessible: This clause specifies the requirements for accessways within buildings which must be accessible. In accordance with Clause D4D4; ramps & stairways must comply with Clause 10 & 11 of AS 1428.1-2009 (respectively), whilst fire isolated stairs must comply with Clauses 11.1(f) & (g) of AS 1428.1-2009 only. In addition, any storey with a floor area more than 200m² must be served by a passenger lift that is designed to comply with Part E3, and all accessways must include passing & turning spaces per AS 1428.1-2009. Clause D4D4(g) and (h) requires that the pile height or pile thickness shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm. Moreover, the carpet pile height or pile thickness dimension shall not exceed 11mm, the carpet backing thickness dimension shall not exceed 4mm and their combined dimension shall not exceed 15mm. Comment: As indicated above, the proposed building is required to be accessible throughout in accordance with AS1428.1-2009 – Refer to Access Consultant Report for further details.
D4D5	Exemptions: This clause provides details on buildings or parts of buildings not required to be accessible under the BCA where providing access would be inappropriate because of the nature of the area/use or the tasks undertaken. Comment: Consideration to an exemption to the Warehouse areas may be appropriate on this project. Confirmation from Goodman/the tenant will be required at the CC Application stage that includes a request for concession, where this would be applied and the reasons why it would be inappropriate for access for people with disabilities within the facility.
D4D6	Accessible Parking: This clause provides details of the number of accessible carparking spaces required in a carpark depending on the classification of the building. Comment: In the case of the Class 5 & 7b buildings 1 compliant accessible space is required for every 100 parking spaces or part thereof. In this regard, it is noted that there are currently 2 (two) accessible parking spaces detailed on the most current plans, hence achieving compliance.
D4D7	Signage: Braille and tactile signage must be provided to required accessible sanitary facilities, spaces with hearing augmentation, ambulant sanitary facilities, pedestrian entrances that are not accessible, and to each door required by Clause E4D5 to be provided with an exit sign. The latter is to state EXIT and state the level e.g. LEVEL 1. Comment: Signage will be required to identify exits, accessible facilities, an ambulant accessible facility, and the paths to accessible pedestrian entries (where required) – Refer to Access Consultant Report.
D4D9	Tactile Indicators: This clause provides for the installation of tactile indicators in buildings required to be accessible and must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway, escalator, passenger conveyor, ramp, overhead obstruction or an accessway meeting a vehicular way, except for areas exempted by D4D5.

	Comment: Subject to D4D5 above, stairways and ramps serving the proposed building, any overhead projections less than 2m in height and any paths leading directly to a driveway or roadway without a kerb will need to be provided with Tactile Ground Surface Indicators in accordance with AS1428.4. Details and design certification demonstrating compliance will be required to be included in the CDC plans.
D4D12	Ramps: Ramps may be used as part of an accessway where there is a change of level and must comply with the requirements set out in AS1428.1. Comment: Architect to note, details and design certification demonstrating compliance will be required to be included in the CC plans – Refer to Access Consultants Report.
D4D13	Glazing on an Accessway: This part requires the provision of a contrasting strip, chair rail, handrail or transom across all frameless or fully glazed doorways and surrounding glazing capable of being mistaken for an opening. Comment: Glazing capable of being mistaken for an opening as listed above must be clearly marked for their full width with a solid, non-transparent contrasting line being not less than 75mm wide and the lower edge must be located between 900mm and 1000mm above the plane of the finished floor level.

3.4 Section E – Services and Equipment

E1D2	Fire Hydrants: + E1D2(1) – A fire hydrant system must be provided to serve a building having a total floor area greater than 500m² and where a fire brigade is available to attend a building fire. + E1D2(2) – Requires that the fire hydrant system must be installed in accordance with the provisions of AS2419.1-2021 and details where internal hydrants must be located. + E1D2(3) – details concessions to AS 2419.1-2021 compliance associated with Class 8 Electricity Network Substations, and Hydrant Booster assembly locations where buildings are sprinkler protected. + E1D2(4) – states that internal fire hydrants must serve the level in which they are installed. Comment: The building must be served by a compliant hydrant system which is designed in accordance with AS 2419.1-2021 Appendix C. Detailed plans showing the location of the hydrants (and booster assembly) providing coverage to all areas of the building and a design Performance Solution is to be provided with the CC application. <i>Note: Where a LIB exceeds 108,000m³ or includes an automated racking system, a Performance Solution is required for the design of the Hydrant System per Appendix of AS 2419.1-2021.</i>
E1D3	Fire Hose Reels: A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m². This clause requires that the fire hose reel system must be installed in accordance with AS 2441 and sets out the detail for location and uses of fire hose reels. Comment: The Class 7b warehouse areas must be provided with fire hose reels in accordance with this clause. Plans shall be provided with the CC documentation together with a design certificate to AS2441-2005 that details the coverage provided by the fire hose reels on each level. It is noted that a Performance Solution by the Fire Engineer may be necessary if hose reels are to be deleted from the Class 7b portions of the building. <i>Note: The Class 5 Office areas are subject to the concession in E1D3(1) and are not required to be provided with fire hose reel coverage</i>
NSW E1D4, E1D12 & E1D13	Sprinklers: A sprinkler system must be installed in a building or part of a building when required by Clauses E1D5 to E1D13 and comply with Specification 17 or 18.

	Specification 17 sets out requirements for the design and installation of sprinkler systems in Class 2-9 Buildings, and details the required design standards, including AS 2118.1-2017 and AS 2118.6-2012. Comment: As the building is designated as a Large Isolated Building, it is required to be sprinkler protected throughout per Spe. 17. Details demonstrating compliance are required to be submitted with the CC application. Note: In accordance with Clause 4.14.1 of AS2118.1-2017, sprinkler boosters are required to comply with the requirements of AS2419.1-2021 for a hydrant booster.
E1D14	Portable Fire Extinguishers: To be provided and designed in accordance with Sections 1, 2 and 3 of AS 2444-2001. Comment: Fire extinguishers will be required to be installed in the proposed building in accordance with sub-clauses (1), (3) & (5) and AS 2444-2001 in the class 5 office areas.
E1D15	Fire Control Centre: A fire control centre is to be provided based on the total building floor area comprising more than 18,000m². A fire control centre must: + Be located in a building so that egress from any part of its floor to a public road or open space does not involve changes in level which in aggregate exceed 300mm. + Provide an area from which fire-fighting operations or other emergency procedures can be controlled. Must not be used for any other purpose. Comment: As the building does not exceed 18,000m², a Fire Control Centre is not required.
E1D17	Provisions for Special Hazards: Suitable additional provisions must be made for fire-fighting if unique problems could arise due to; + The nature or quantity of materials stored, displayed or used in a building on the allotment; or + The location of the building in relation to a water supply for firefighting purposed. Comment: It is noted that if Dangerous Goods (or other materials that would otherwise increase the fire load of the building) are proposed to be stored/utilised in significant quantities, details will be required from both the sprinkler system designer and the Fire Engineer, confirming that the proposed firefighting systems have the required capability to address the additional hazard.
E2D3	General Requirements: Class 2 to 9 buildings must comply with the provisions of this Clause to remove smoke during a fire, to control the operation of air handling systems and to prevent the spread of smoke between compartments. Buildings must comply with the provisions of E2D4, as applicable to Class 2 to 9 buildings. It deals with the design and construction of air handling systems that are part of a smoke hazard management system and air handling system that are not part of a smoke hazard management system. The details relating to the installation and operation of the systems are set out in Specifications 20, 21, & 22. Comment: Refer to E2D10 below.
E2D10	Buildings <25m Effective Height – Large Isolated Buildings: This clause sets out the requirements for smoke hazard management systems for large isolated buildings with an effective height of less than 25m. Comment: As the volume of the proposed Large Isolated Building exceeds 108,000m³ an automatic smoke exhaust system (incorporating a smoke detection system) is required to be provided, complying with Spec. 21. Consideration to a Performance Solution addressing the rationalisation of the required smoke hazard management system may be appropriate for the building. Such a Performance Solution will need to be prepared by the Fire Engineer, to demonstrate compliance with Performance Requirement E2P2. In addition, any air handling system which does not form part of a smoke hazard management system and which recycles air from one fire compartment to another fire compartment or operates in a way that may spread smoke between compartments must be designed to operate as a smoke control system in accordance with AS 1668.1-2015. Alternately this system may incorporate smoke dampers where the ducts penetrate separating elements in the fire compartments and the

	mechanical system shutdown and the smoke dampers activate to close automatically by smoke detectors complying with Clause 7.5 of AS 1670.1-2018.
E2D21	Provisions for Special Hazards: Additional smoke hazard management measures may be necessary due to the— + Special characteristics of the building; or + Special function or use of the building; or + Special type or quantity of material stored, displayed or used in a building; or + Special mix of classifications within a building or fire compartment, which are not addressed in E2D4 to E2D20. Comment: It is noted that if Dangerous Goods (or other materials that would otherwise increase the fire load of the building) are proposed to be stored/utilised within the building in significant quantities, details will be required from both the mechanical system designer and the fire engineer confirming that the proposed smoke hazard management systems have the required capability to address the additional hazard resulting from the Lithium-Ion battery storage in the buildings.
E3D4	Warning Against use of Lifts in Fire: Warning signs required be provided must be displayed where they can be readily seen and must comply with the details and dimensions of Figure E3D4. Comment: Lift Contractor to note.
E3D6	Landings: Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Parts D2 & D3. Comment: Lift Contractor to note.
E3D7	Passenger Lift Types and Their Limitations: In an accessible building, every passenger lift must be one of the types identified in sub-clause (1) and not rely on a constant pressure device for its operation if the lift car is fully enclosed. Comment: Lift Contractor to note.
E4D2 – E4D8	Emergency Lighting and Exits Signs: Emergency lighting and exit signage to be provided in accordance with E4D2 - E4D5 complying with AS 2293.1 – 2018.
E4D4	Design & Operation of Emergency Lighting: Every required emergency lighting system must comply with AS 2293.1-2018. Comment: Electrical Consultant to note.
E4D5	Exit Signs: An exit sign must be clearly visible to persons approaching the exit and must be installed on, above or adjacent to each door providing egress from a building. Sub-clauses (a) to (d) set out the situations where exit signs are required to be installed. Comment: Electrical Consultant to note.
E4D6	Direction Signs: If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit. Comment: Electrical Consultant to note, details demonstrating compliance will be required to be included in the CC plans.

3.5 Section F – Health and Amenity

F1D3	Stormwater Drainage: A roof balcony, podium or similar must have a system of stormwater drainage and the structural substrate must be graded with a minimum fall of 1:80 to a drainage outlet.
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	Comment: Details of stormwater disposal are required to be prepared by a suitably qualified consultant and submitted with documentation for the CC Application.
F1D6	Damp-Proofing: + This sub-clause requires that moisture from the ground must be prevented from reaching certain parts of buildings as listed. + This sub-clause requires that all damp-proofing materials and termite shields used as damp-proofing must comply with AS/NZS 2904 and AS 3660.1. + This sub-clause lists the buildings and parts of a building that do not need to comply with (a). Comment: Note.
F1D7	Damp Proofing of Floors on the Ground: If the floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870. Damp-proofing need not be provided if weatherproofing is not required or the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means. Comment: Note.
F2D3 & F2D4	Wet Area Construction: These clauses set out the construction requirements for wet areas in Class 2-9 Building, in relation to floor and wall materials, surface grading, floor wastes and drainage. Comment: Note – Design Certification will be required to be provided at CC Application stage.
F2D4	Floor Wastes: Where a floor waste is provided, the fall of the floor plane to the floor waste is required to be between 1:80–1:50. Comment: Note – Applies to all floor wastes internally and externally.
F3D2	Roof Coverings: This clause details the materials and appropriate standards, with which roofs must be covered with. The roofing requirements are set out in sub-clauses (a) to (g) which identifies the types of materials that may be used and the adopted Australian Standards that apply to their quality and installation. Comment: Note – Design Certification required at CC Application Stage.
F3D3	Sarking: Sarking-type materials used for weatherproofing of roofs must comply with AS/NZS 4200 parts 1 and 2 Comment: Note.
F3D4	Glazed Assemblies: Glazed assemblies in an external wall must comply with AS2047 requirements for resistance to water penetration for windows, sliding doors with a frame, adjustable louvres, shop fronts and windows with one-piece framing Comment: Note.
F3D5	Wall Cladding: The following wall cladding materials are deemed to satisfy Performance Requirement F3P1: + Masonry, including masonry veneer, unreinforced and reinforced masonry, complying with AS 3700, + Autoclaved aerated concrete, complying with AS 5146.3, + Metal wall cladding, complying with AS 1562.1. Comment: Details are to be provided with the F3P1 Performance Solution Report, demonstrating compliance, prior to the issue of the CC.
F3P1 & F3D5	Performance Requirement F3P1: A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause + Unhealthy or dangerous conditions, or loss of amenity for occupants; and + Undue dampness or deterioration of building elements.

Note 1: There are limited Deemed-to-Satisfy provisions for this Performance Requirement in respect to External Walls. DtS wall types include; masonry; autoclaved aerated concrete; and metal wall cladding only.

Note 2: Refer to Clause F3D2 for roof coverings.

Comment: A Performance Solution Report will be required to address the above, noting that the proposed design does not comprise of wholly DtS materials.

F4D4

Facilities in Class 3 to 9 Buildings: This clause provides the requirements for sanitary facilities to be installed in Class 3-9 buildings in accordance with Tables F4D4a – F4D4l. The requirements and variations are set out in sub-clauses (1)-(11).

Comment: Based on the population numbers calculated under D2D18, the required sanitary facilities for the proposed development have been calculated as per Tables F4D4a and F4D4b and are as follows.

+ Warehouse 2A Population Numbers

Occupancy Class as per F4D4

Area		Closet Pans		Urinals		Washbasins		Complies
		Required	Proposed	Required	Proposed	Required	Proposed	Yes/No
Ware-house	72 Males	4	5	3	3	4	4	Yes
	72 Females	5	6	-	-	4	5	Yes
Office	39 Males	2	3	2	2	2	3	Yes
	39 Females	3	4	-	-	2	4	Yes
Dock Office	39 Males	1	1	0	0	1	1	Yes
	39 Females	1	1	-	-	1	1	Yes

Note 1: Where sanitary compartments are noted as Unisex on the floor plans they are required to be allocated as either Male or Female per Clause F2D4(1).

Note 2: Where individual stand-alone sanitary compartments are they must be allocated for use by Males or Females only unless they are designed as a unisex accessible compartment per Clause F2D4(1).

Note 3: As mentioned under D2D18 above, these population numbers may be considered excessive for the development and hence more accurate population numbers may be provided by Goodman/the tenant.

F4D5

Accessible Sanitary Facilities: Accessible unisex sanitary compartments must be provided, in accordance with F4D6 and unisex showers must be provided in accordance with Table F4D7, in buildings or parts that are required to be accessible. The details for the provision of disable facilities and the standard, AS 1428.1, are set out in sub-clauses (a) to (i).

Comments: The proposed accessible toilet facilities and ambulant sanitary facilities in the building are required to achieve compliance with the provisions of F4D5 and F4D6. Details demonstrating that the design of each facility complies with AS 1428.1 are to be provided at the CC application stage, however, compliance is readily achievable.

F4D8

Construction of Sanitary Compartments: Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend:

- + From floor level to the ceiling in the case of a unisex facility; or
- + A height of not less than 1.5m above the floor if primary school children are the principal users; or
- + 1.8m above the floor in all other cases.

The door to a fully enclosed sanitary compartment must open outwards; or slide: or be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least

	1.2m, measured in accordance with Figure F4D8 between the closet pan within the sanitary compartment and the doorway. Comment: The plans appear to comply with this clause.
F5D2	Height of Rooms and Other Spaces: The ceiling heights in Class 2 to 9 buildings must not be less than required in sub-clauses (1) to (8) of this clause. The minimum ceiling heights for a Class 5, 6 & 7 building are as follows: + Corridor or Passage, Bathroom, Storeroom, etc. – 2.1m + Remainder – 2.4m. The minimum ceiling heights for a <u>Class 9b building</u> are as follows: + A part (including a corridor serving the part) that accommodates not more than 100 persons – 2.4m; A part (including a corridor serving the part) that accommodates more than 100 persons – 2.7m. Comment: Architect to ensure compliance. Ceiling heights are to be reviewed at the Construction Certificate stage with the detailed section drawings.
F6D5	Artificial Lighting: Artificial lighting is required where it is necessary to minimise the hazard to occupants during an emergency evacuation. Sub-clauses (1) - (3) sets out the places where artificial lighting is always required in all classes of buildings and the standard to which it must be installed. Comment: Design certification to be submitted at CC Application.
F6D6	Ventilation of Rooms: A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation complying with F6D7 or a mechanical or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1. Comment: Design certification to be submitted at CC Application.
F6D8	Ventilation Borrowed from Adjoining Room: Natural ventilation must consist of openings, windows, doors or other devices which can be opened— with a ventilating area not less than 5% of the floor area of the room required to be ventilated. Additionally, open to a suitably sized space open to the sky or an adjoining room in accordance with F6D8. Comment: Design certification to be submitted at CC Application.

3.6 Section J – Energy Efficiency

Part J4	Building Fabric: The provision of insulation of the building envelope will be required in the proposed Building, in accordance with Clauses J4D3 to J4D7, and the Tables therein, including Thermal Construction General, Roof and Ceiling Construction, Rooflights, Walls, and Floors. Design details and/or certification of design will be required to be provided in this regard. Comment: This section applies to the building envelope of any air-conditioned spaces proposed within the Warehouse buildings. Design details and/or certification of building envelope design will be required to be submitted with the application for a Construction Certificate.
Part J5	Building Sealing: The provision of a compliant building sealing is required to all chimneys & flues, roof lights, windows & doors, Exhaust Fans, Ceilings Walls, & floors in accordance with Clauses J5D3 to J5D7. Comment: This section applies to any air-conditioned spaces proposed within the building. Design details and/or certification of building envelope design will be required to be submitted with the application for a Construction Certificate.
Part J6	Airconditioning & Ventilation Systems: Details and/or design certification which confirm that any proposed air-conditioning system or unit within the proposed building achieves compliance

	with the relevant requirements of Part J6 will be required to be provided from the mechanical engineer. Comment: Details or certification demonstrating compliance will need to be submitted with the application for a Construction Certificate.
Part J7	Artificial Light & Power: Details and/or design certification which confirm that all artificial lighting, power control, and boiling/chilled water units within the proposed building achieves compliance with the relevant requirements of Part J7 will be required to be provided from the electrical engineer Comment: Consultant certification required at CC Application Stage.
Part J8	Hot Water Supply, & Swimming Pool & Spa Pool Plant: Details and/or design certification which confirm that any proposed hot water supply system within the proposed building achieves compliance with the relevant requirements of Part J8 (Section 8 of AS 3500.4) will be required to be provided from the hydraulic engineer. Comment: Details and certification demonstrating compliance will need to be submitted with the application for a Construction Certificate.
Part J9	Facilities for Energy Monitoring: Provision for monitoring of energy consumption must be provided to a building where the floor area exceeds 500m², and must be capable of recording the consumption of gas and electricity. In addition, where the floor area of the building exceeds 2,500m² the energy monitoring facilities must be capable of individually recording air-conditioning, lighting, appliance power, central hot water supply, lifts/escalators, and other ancillary plant and being connected to a single interface monitoring system. Comment: Details or certification demonstrating compliance with J9D3 for energy monitoring, J9D4 for provision for EV charging stations, and J9D5 for solar, will need to be submitted with the application for a Construction Certificate.



4.0 Conclusion

This report contains an assessment of the referenced architectural documentation for the proposed Building 2A at Oakdale East Industrial Estate against the Deemed-to-Satisfy provisions of the Building Code of Australia 2022.

Arising from the assessment, key compliance issues have been identified that require further resolution, either by way of fire engineered Performance Solutions or plan amendments prior to the Construction Certificate stage.

Notwithstanding the above, it is considered that the proposed development can readily achieve compliance with the BCA subject to resolution of the matters identified in this report.



Appendices

+ Appendix 1 – References Tables

Table 1: Non-Combustibility Requirements

+ Building Element	+ Type C Construction
External wall	Non-combustible
Common wall	Non-combustible
Floor and floor framing of lift pit	Non-combustible
All loadbearing internal walls (including those of shafts)	Concrete, masonry or fire-protected timber
Loadbearing fire walls	Concrete, masonry or fire-protected timber
Non-loadbearing internal walls required to be fire-resistant	Non-combustible
Non-loadbearing lift, ventilating, pipe, garbage and the like shafts which do not discharge hot products of combustion.	Non-combustible (subject to conditions outlined in C2D10)

Table 2: Fire Hazard Properties Requirements – Floor Linings

+ Table S7C3 of Specification 7 Critical Radiant Flux of Floor Linings and Floor Coverings			
+ Class of Building	Building Not Fitted with a Sprinkler System	Building Fitted with a Sprinkler System (other than a FPAA101D or FPAA10H System)	Fire-isolated Exits and Fire Control Rooms
Class 2, 3, 5, 6, 7, 8 or 9b, excluding: + Class 3 accommodation for the aged; and + Class 9b	2.2 kW/m ²	1.2 kW/m ²	2.2 kW/m ²

Table 3: Fire Hazard Properties Requirements – Wall and Ceiling Linings

+ Table S7C4 of Specification 7 – Wall and Ceiling Lining Materials (Materials Groups Permitted)				
Class of Building	Fire-isolated Exits and Fire Control Rooms	Public Corridors	Special Areas	Other Areas
Class 5, 6, 7, 8 or 9b schools, Sprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3

Table 4: Fire-Resisting Construction – Type Construction

+ Building Element	+ Class of Building - FRL: (in minutes) Structural adequacy/integrity/insulation			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL – (Including any column and other building element incorporated within it) or other external building element, where the distance from any fire-source feature to which it is exposed is:				
For loadbearing parts:				
Less than 1.5m	90/90/90	90/90/90	90/90/90	90/90/90
1.5 to less than 3m	-/-/-	60/60/60	60/60/60	60/60/60
3m or more	-/-/-	-/-/-	-/-/-	-/-/-
EXTERNAL COLUMN - Not incorporated in an external wall				
Less than 1.5m	90/-/-	90/-/-	90/-/-	90/-/-
1.5 to less than 3m	-/-/-	60/-/-	60/-/-	60/-/-
3m or more	-/-/-	-/-/-	-/-/-	-/-/-
COMMON WALLS and FIRE WALLS	90/90/90	90/90/90	90/90/90	90/90/90
INTERNAL WALLS				
Bounding public corridors, public lobbies and the like:	60/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy units:	60/60/60	-/-/-	-/-/-	-/-/-
Bounding a stair if required to be rated:	60/60/60	60/60/60	60/60/60	60/60/60
ROOFS	-/-/-	-/-/-	-/-/-	-/-/-

Notes:

1. New external walls that are located 1.5m or more from an allotment boundary/fire source feature require no FRLs.
2. Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must typically achieve the same FRL. Where that part is also required to be non-combustible, the supporting part must also be non-combustible.
3. An external wall required to have an FRL is only required from the outside.
4. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification 6.
5. The method of attaching or installing a finish, lining, ancillary element, or service installation to a building must not reduce the fire-resistance of that element to below that required.
6. No structural elements are permitted to pass through fire-rated walls.

+ Appendix 2 – Fire Safety Schedule

The following table is a list of the required fire safety measures within the building. These measures may be subject to further change pending the outcomes of the final Fire Safety Engineering Review to confirm the works are permissible.

Table 7: Fire Safety Schedule

+ Statutory Fire Safety Measure	+ Design/Installation Standard	+ Proposed
Alarm Signalling Equipment	AS 1670.3 – 2018	✓
Automatic Fire Detection System	BCA 2022 Spec. 20 AS 1670.1 – 2018	✓
Automatic Fire Suppression Systems	BCA 2022 Spec. 17 AS 2118.1 – 2017 or AS 2118.4, 6 – 2012	✓
Building Occupant Warning System activated by the Sprinkler System	BCA 2022 Spec. 17 Clause 8 and / or Clause 3.22 of AS 1670.1 – 2018	✓
Emergency Lighting	BCA 2022 Clause E4D2 & E4D4 AS 2293.1 – 2018	✓
Exit Signs	BCA 2022 Clauses E4D5, NSW E4D6 & E4D8 AS 2293.1 – 2018	✓
Fire Doors (TBC)	BCA 2022 Clauses C3D13, C3D14 AS 1905.1 – 2015 and Manufacturer's Specification	✓
Fire Seals (TBC)	BCA 2022 Clause C4D15, AS 1530.4 – 2014 & AS 4072.1 – 2014 and Manufacturer's Specification	✓
Fire Hose Reels	BCA 2022 Clause E1D3 AS 2441 – 2005	✓
Fire Hydrant Systems	BCA 2022 Clause E1D2 AS 2419.1 – 2021 Appendix C	✓
Lightweight Fire Rated Construction (TBC)	BCA 2022 Clause C2D9 AS 1530.4 – 2014 and Manufacturer's Specification	✓
Perimeter Vehicular Access	BCA 2022 Clause C3D5	✓
Portable Fire Extinguishers	BCA 2022 Clause E1D14 AS 2444 – 2001	✓
Smoke Hazard Management Systems (Smoke Exhaust)	BCA Part E2 AS/NZS 1668.1 – 2015	✓
Warning & Operational Signs	BCA 2022 Clause D4D7, & E4D4. AS 1905.1 – 2015	✓
Fire Engineered Performance Solutions: TBC	TBC	✓