

# BCA Assessment Report

Oakdale East Industrial Estate – Precinct 2

**Prepared for:**

Goodman Property Services  
(Aust) Pty Ltd

**Revision 2**

24 March 2025

Reference: S240313



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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. D3D14 – D3D22	Detailed plans of all stairways, balustrades and handrails within the proposed development must be provided for review at CC application stage.
3. 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.
4. D4D5	Details of any proposed Clause D4D5 exemptions to be provided, including to the Warehouse areas or dock office.
5. E1D2/E1D3	Fire hydrant and fire hose reel locations to be nominated and coverage plants to be provided for review.
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. Section J	A Section J compliance report or JV3 report will be required at CC application stage for the buildings.

## B. Matters requiring fire safety engineered performance solutions:

+ BCA (DtS) Clause	+ Description
1. C3D4 / C3D5	Perimeter Vehicular Access is non-compliant with C3D5 for the proposed large-isolated buildings. Refer to mark up in the clause for locations.
2. D2D5, D2D6	The current plans indicate that exit travel distances, and distances between alternative exits within the building will not comply with D2D5 & D2D6. Refer to the clauses for further information.
3. E1D2	Design of Hydrant System per AS 2419.1-2021 Appendix C for the building's where the volume exceeds 108,000 m <sup>3</sup> . Note: There is potential for limited hydrant coverage to any automation areas in the warehouses.
4. E1D2	Where fire hydrants are located outside the buildings and not open to the sky (i.e. located under awnings), a Performance Solution will be required to treat the fire hydrants as external for the purposes of coverage.
5. E1D3	Confirmation is required if 50m fire hose reels are proposed to be used to serve the Class 7b areas.
6. E1D2 / E1D4	The location of the booster assemblies is to be provided noting they may need to be addressed under a Performance Solution.
7. Part E2	Rationalisation of the requirements associated with the automatic smoke exhaust systems (e.g. smoke reservoirs, smoke exhaust rates, sprinklers to initiate smoke exhaust in lieu of smoke detection).

## C. Other matters requiring performance solutions:

+ BCA (DtS) Clause	+ Description
1. Part D4	Potential access performance solutions – TBC when access report is provided.
2. D4D3	An accessway is not provided to each office from the main points of a pedestrian entry at the allotment boundary.
3. 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.
4. Section J	A JV3 Report may be required to be provided with the CC applications for the buildings.

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## + Report Status

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+ Date	21.10.2024
+ Revision	1
+ Status	For SSDA Submission
+ Author	Nini Quach
+ Reviewed	Dean Goldsmith

Prepared by:



Nini Quach  
Building Surveyor  
bm+g

Reviewed by:



Dean Goldsmith  
Director  
bm+g  
Building Surveyor-Unrestricted (NSW)  
BDC No.: 0141

## + Revision History

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+ Revision	0	+ Date	21.10.2024
+ Status	Preliminary Assessment – For Client & Consultant Review		
+ Revision	1	+ Date	31.10.2024
+ Status	For SSDA Submission		
+ Revision	2	+ Date	24.03.2025
+ Status	For SSDA Submission – Updated Drawing Register		

## 1.0 Description of Project

### 1.1 Proposal

bm+g have been commissioned by Goodman Property Services to undertake an assessment of the proposed Precinct 2 industrial development at the Oakdale East Estate, Kemps Creek against the relevant provisions of the Building Code of Australia 2022 (BCA).



*Figure 1- Artist Impression (Drawing DA000 Rev D by 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
- + Dean Goldsmith – Peer Review | Director (Building Surveyor – Unrestricted)

## 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)
- + The Guide to the Building Code of Australia 2022
- + Architectural Plans prepared by SBA Architects numbered:

+ Drawing No.	+ Revision	+ Date	+ Drawing No.	+ Revision	+ Date
DA000	D	12.11.2024	DA206	A	12.11.2024
DA010	A	16.10.2024	DA300	C	16.10.2024
DA011	A	16.10.2024	DA301	C	12.11.2024
DA050	J	12.11.2024	DA302	B	16.10.2024
DA100	B	12.11.2024	DA310	B	16.10.2024
DA200	D	23.10.2024	DA311	B	16.10.2024
DA201	E	23.10.2024	DA312	B	16.10.2024
DA202	C	16.10.2024	DA313	B	16.10.2024
DA203	D	23.10.2024	DA400	A	16.10.2024
DA204	C	16.10.2024	DA500	A	30.10.2024
DA205	A	12.11.2024			

## 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.

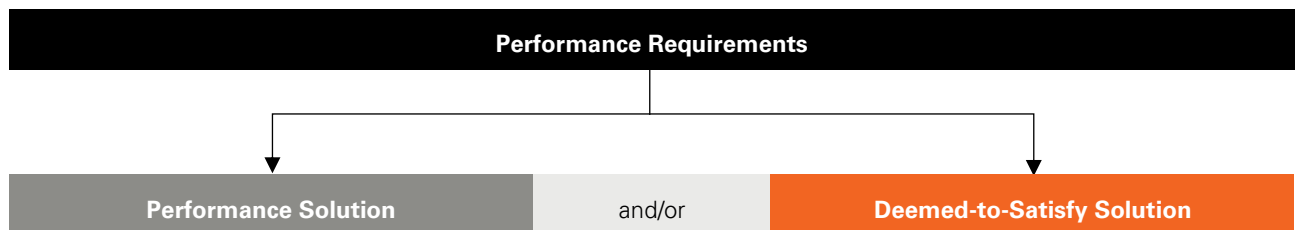
## 1.6 Relevant Version of the NCC Building Code of Australia

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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, with the next revision of the BCA coming into effect 1 May 2025. As the Construction Certificate application will be lodged after 1 May 2023, this report assesses the design against compliance with the requirements of BCA 2022.

## 1.7 Compliance with the National Construction Code

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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

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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

**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.*

**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.

**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.

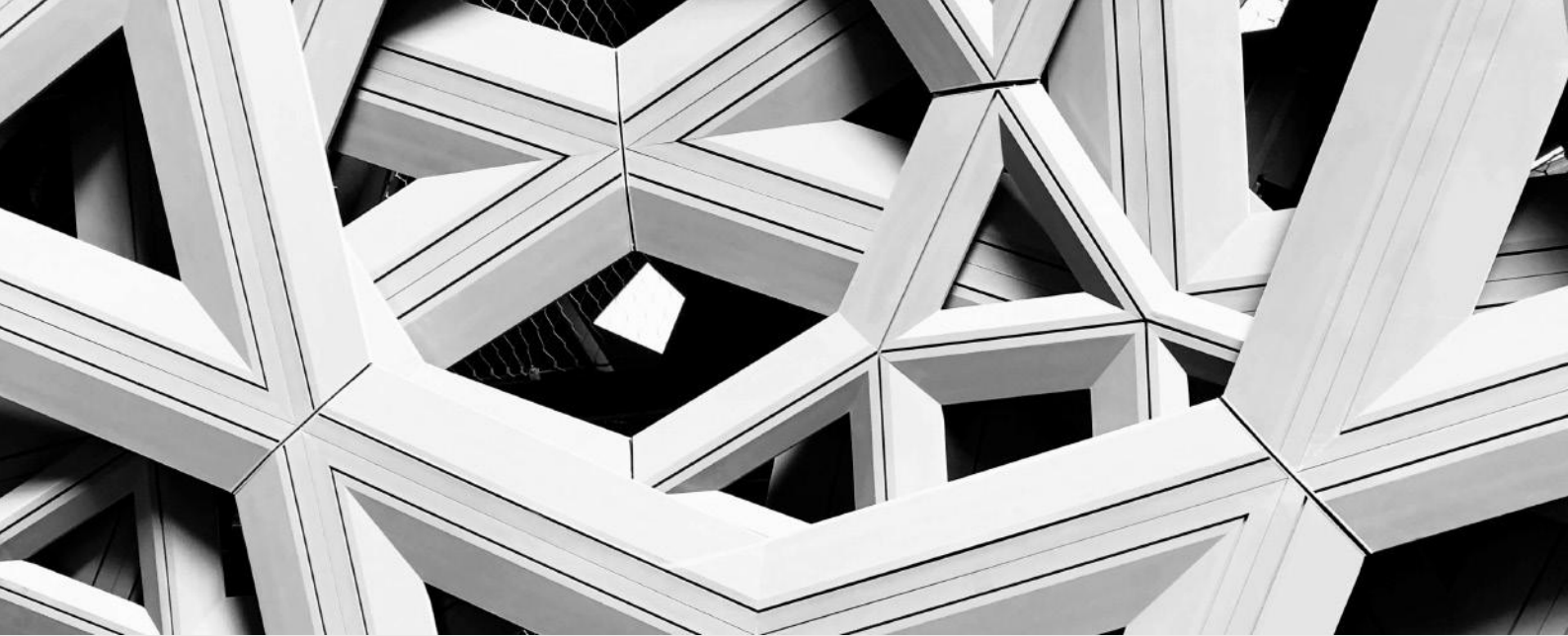
**Performance-Based Design Brief** – Means the process and the associated report that defines the scope of work for the performance-based analysis, the technical basis for analysis, and the criteria for acceptance of any relevant Performance Solution as agreed by stakeholders.

**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.



## 2.0 Building Characteristics

### 2.1 Proposed Development

The proposed development consists of the construction of four (4) new warehouses containing offices over two (2) levels with associated parking, external awnings, hardstands, and light duty pavements.

The proposed buildings can be collectively classified as follows:

+ <b>BCA Classifications:</b>	Class 5 (Office) Class 7b (Warehouse)
+ <b>Rise in storeys:</b>	Two (2) – All Buildings
+ <b>Storeys Contained:</b>	Two (2) – All Buildings
+ <b>Type of Construction:</b>	Type C Construction
+ <b>Importance Level (Structural)</b>	2 – All Buildings (TBC by Structural Engineer)
+ <b>Sprinkler Protected Throughout</b>	Yes – All Buildings
+ <b>Effective Height</b>	<12m (TBC) – All Buildings
+ <b>Floor Area</b>	All buildings – >18,000m <sup>2</sup>
+ <b>Volume</b>	All Buildings – >108,000m <sup>3</sup> Note: Warehouse 2B-1 & 2 have been assumed to contain average internal heights greater than 9m.
+ <b>Largest Fire Compartment Size</b>	Type C Construction All Buildings – 2,000m <sup>2</sup> & 12,000m <sup>3</sup> (Class 7b) and 3,000m <sup>2</sup> & 18,000m <sup>3</sup> (Class 5) Refer to Large Isolated Building provisions below.
+ <b>Climate Zone</b>	Zone 6

## 2.2 Fire Compartment Floor Area Limitations

Maximum size of fire compartment/atria is:

+ Classification		+ Type A	+ Type B	+ Type C
7	Max. floor area	5,000m <sup>2</sup>	3,500m <sup>2</sup>	2,000m <sup>2</sup>
	Max. volume	30,000m <sup>3</sup>	21,000m <sup>3</sup>	12,000m <sup>3</sup>
5	Max. floor area	8,000m <sup>2</sup>	5,500m <sup>2</sup>	3,000m <sup>2</sup>
	Max. volume	48,000m <sup>3</sup>	33,000m <sup>3</sup>	18,000m <sup>3</sup>

Note: The above provisions of Table C3D3 are 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.

### Warehouse 2A-1

+ Elevation	+ Fire Source Feature	+ Distance
North	Far side of Estate Road 2	>3m
East	Building on same allotment	>3m
West	Far side of Estate Road 1	>3m
South	Building on same allotment	>3m

### Warehouse 2A-2

+ Elevation	+ Fire Source Feature	+ Distance
North	Building on same allotment	>3m
East	Building 2B-2	>3m
West	Side or rear boundary	>3m
South	Side or rear boundary	>3m

### Warehouse 2B-1/2B-2

+ Elevation	+ Fire Source Feature	+ Distance
North	Far side of Estate Road 2	>3m
East	Side or rear boundary	>3m
West	Building on same allotment	>3m
South	Side or rear boundary	>3m

**Note:** 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.

## 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.

**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 3 of Appendix 1 for the FRL requirements of Type C Construction.

	<p><b>Type C Construction:</b></p> <ul style="list-style-type: none"> <li>+ External walls (and columns incorporated within) need not achieve an FRL if &gt;3m from a boundary or separate building.</li> <li>+ Floors need not achieve an FRL, subject to Cl. S5C3.</li> <li>+ Roofs need not achieve an FRL.</li> <li>+ Internal columns need not achieve an FRL.</li> </ul> <p><b>Comment:</b> Type C Construction applies to all buildings. See Specification 5 for applicable FRLs. Any deviations from these will require a fire engineered performance solution.</p>
<p><b>C2D3</b></p>	<p><b>Calculation of Rise in Storeys:</b> 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.</p> <p><b>Comment:</b> The proposed buildings each have a rise in storeys of two (2).</p>
<p><b>C2D11 &amp; Spec. 7</b></p>	<p><b>Fire Hazard Properties:</b> 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:</p> <ul style="list-style-type: none"> <li>+ Minimum Group Numbers apply to wall and ceiling linings. AS 5637 test reports must be provided to determine compliance.</li> <li>+ Minimum Critical Radiant Flux values apply to floor linings. AS ISO 9239.1 test reports must be provided to determine compliance</li> </ul> <p>Refer to Table 2 and 3 in Appendix 1 below for the required fire hazard properties.</p> <p><b>Comment:</b> Design certification will be required at CC application stage and installation certification required at OC stage.</p>
<p><b>C3D3</b></p>	<p><b>General Floor Area and Volume Limitations:</b> The building is to achieve fire compartment sizes not in excess of the DtS requirements of this clause.</p> <p><b>Comment:</b> The proposed buildings are a Class 5,7b Large Isolated Building and as such the provisions for maximum fire compartment size under Table C3D3 do not apply. Refer to comments under C3D4 &amp; C3D5 below in relation to the Large Isolated Building provisions applicable to the proposed development.</p>
<p><b>C3D4</b></p>	<p><b>Large Isolated Buildings:</b> A Large Isolated Building that contains Class 5, 6, 7, 8 or 9 parts, is required to be—</p> <ul style="list-style-type: none"> <li>+ Protected throughout with a sprinkler system complying with Specification 17; and</li> <li>+ Provided with a perimeter vehicular access complying with C3D5(2).</li> </ul> <p><b>Comment:</b> All proposed buildings are required to be sprinkler protected and provided with a 6m wide perimeter vehicular accessway in accordance with Clause C3D5(2) throughout.</p> <p><b>Note 1:</b> 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.</p> <p><b>Note 2:</b> 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.</p> <p><b>Note 3:</b> 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.</p>
<p><b>C3D5</b></p>	<p><b>Requirements for Open Spaces and Vehicular Access:</b> Open space and vehicular access required by C3D4 must comply with the requirements of sub-clauses (a) &amp; (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.</p> <p><b>Comment:</b> The proposed warehouse building complies with the provisions of C3D5 except for the areas shown in red on the mark-up below. These non-compliances will be required to be</p>

addressed as a Performance Solution by the Fire Safety Engineer to demonstrate compliance with C1P9:

Warehouse 2A-1

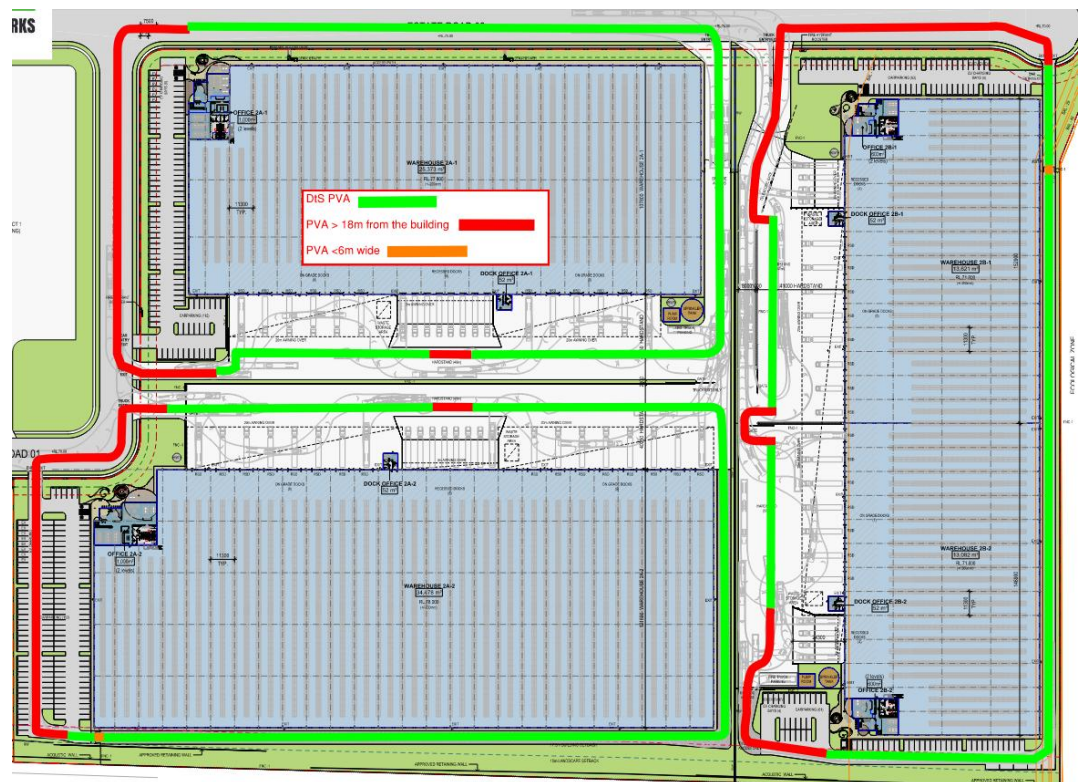
- The vehicular access is greater than 18m from the building around the western and south-western corner of the building along Estate Road 1.
- The vehicular access is greater than 18m from the building around the recessed dock.

Warehouse 2A-2

- The vehicular access is greater than 18m from the building around the western and north-western corner of the building along Estate Road 1 and along the carpark.
- The vehicular access is greater than 18m from the building around the recessed dock.
- The perimeter vehicular access is reduced to 5m at the eastern gates of Warehouse 2A-2.

Warehouse 2B-1/2B-2

- The vehicular access is greater than 18m from the north-western, northern and south-western corner along the staff carparks and Estate Road 2.
- The perimeter vehicular access is reduced to 5m at the eastern gates of Warehouse 2B-1/2B-2.



**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.

**Note 4:** The intertenancy gates between Warehouse 2B-1 & 2B-2 are to open on fire trip or fitted with a 003 manual override.

**C3D8**

**Separation by Fire Walls:** Separation of Fire Compartments must be constructed in accordance with the following:

	<ul style="list-style-type: none"> <li>+ FRL in accordance with Tables S5C11a – S5C11g of Spec. 5 and extend to the underside of a floor with the same FRL, or to the underside of a non-combustible roof covering.</li> <li>+ Any openings in a fire wall must not reduce the FRL, except where permitted by the Deemed-to-Satisfy Provisions of Part C3 (i.e. fire doors; protection of services).</li> <li>+ Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire resisting performance of the fire wall is maintained.</li> </ul> <p><b>Comment:</b> The proposed warehouse is permitted to comprise a single fire compartment, as to there being no limitations on the fire compartment size for a Large Isolated building. Where any fire walls are required as a result of Fire Engineered Performance Solutions, consideration is to be given to the requirements of this clause.</p>
<p><b>C3D9 &amp; C3D10</b></p>	<p><b>Separation of Classifications:</b> 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.</p> <p><b>Note:</b> Refer to C3D8 comments above in regards to structural elements crossing a fire wall at roof level.</p> <p><b>Comment:</b> The entirety of the proposed building will comprise of a single fire compartment, due to there being no limitations on fire compartment size for large-isolated buildings. In this regard, the higher FRL's applicable to the Class 7b warehouse will apply to the adjoining Class 5 Office area. See Spec. 5 details in Appendix 1 below for FRL requirements applicable to the building.</p>
<p><b>C3D11</b></p>	<p><b>Separation of Lift Shafts:</b> The lift shafts are not required to be contained within a fire-rated shaft.</p> <p><b>Comment:</b> Note.</p>
<p><b>C3D13</b></p>	<p><b>Separation of Equipment:</b> 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:</p> <ul style="list-style-type: none"> <li>+ Lift motors and lift control panels; or</li> <li>+ Emergency generators used to sustain emergency equipment operating in emergency mode; or</li> <li>+ Central smoke control plant; or</li> <li>+ Boilers; or</li> <li>+ 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.</li> </ul> <p>Confirmation is required as to whether any of the above will be applicable to this development.</p> <p><b>Comment:</b> Any proposed plant areas/enclosures that contain the above equipment must be separated from the remainder of the building by construction achieving an FRL as required by Specification 5 but no less than 120/120/120, and doorways protected with a self-closing fire door having an FRL of not less than -120/30. Details demonstrating compliance are to be included in the CC Application plans.</p>
<p><b>C3D14</b></p>	<p><b>Electricity Supply System:</b> An electricity substation, electrical conductors &amp; main switchboards which sustain 'emergency equipment' operating in the emergency mode, located within a building must—</p> <ul style="list-style-type: none"> <li>+ Be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and</li> <li>+ Having any doorway in that construction protected with a self-closing fire door having an FRL of not less than -/120/30 <ul style="list-style-type: none"> <li>Electrical conductors which supply a substation or main switchboard sustaining emergency equipment operating in the emergency mode –</li> </ul> </li> <li>+ Have a classification in accordance with AS/NZS 3013 of not less than— <ul style="list-style-type: none"> <li>o If located in a position that could be subject to damage by motor vehicles — WS53W; or</li> <li>o Otherwise — WS52W; or</li> </ul> </li> </ul>

	<p>+ Be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120.</p> <p>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.</p> <p><b>Note:</b> 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 &amp; indicating equipment, EWIS.</p> <p><b>Comment:</b> Any substations and/or switchboards located within the proposed warehouse which sustain emergency equipment operating in emergency mode are required to be separated from the remainder of the building by construction having an FRL of not less than 120/120/120 with a self-closing fire door having an FRL of not less than -/120/30. Fire compartmentation plans are to be provided demonstrating compliance with the above as part as submission of documentation for the relevant CC(s).</p>
<p><b>C4D6</b></p>	<p><b>Doorways in Fire Walls:</b> Doorways in fire walls that does not form a horizontal exit must not consist of more than 50% of the fire wall in which they are located. All doorways in fire walls must be protected by either a single or 2 fire doors that achieve an equivalent fire rating to the fire wall in which they are located.</p> <p>All fire doors must be self-closing, and if they are proposed to be held-open, the self-closing operation must be activated by AS 1670.1 compliant smoke detectors within 1.5m on either side of the door and on general fire trip in the building.</p> <p><b>Comment:</b> Doorways in any proposed Fire Walls must be protected with fire doors, complying with the requirements of this clause.</p>
<p><b>C4D15</b></p>	<p><b>Openings for Services Installations:</b> 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.</p> <p><b>Comment:</b> Note – Fire Stopping of services penetrations will be required to be fire rated enclosures of fire rated building elements are required per C3D13 &amp; C3D14 above and Spec.5 below.</p>
<p><b>Spec. 5</b></p>	<p><b>Fire Resisting Construction:</b> 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.</p> <p><b>Comment:</b> The proposed buildings will be subject to compliance with the Type C Construction provisions of tables S5C21a to S5C21g as summarised below:</p> <ul style="list-style-type: none"> <li>+ All external walls &amp; loadbearing elements incorporated in or attached to an external wall are to achieve the required FRL per Table S5C24a.</li> <li>+ All loadbearing external columns are to achieve the required FRL per Table S5C24b.</li> <li>+ Any Fire Walls that are proposed to separate different classifications per C3D9 above are to achieve the required FRL per Table S5C24c.</li> </ul> <p><b>Note:</b> 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.</p>
<p><b>Spec. 7</b></p>	<p><b>Fire Hazard Properties:</b> 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.</p> <p><b>Comment:</b> Certification will be required to be provided at both CC and OC application stages.</p>
<p><b>Spec. 8</b></p>	<p><b>Performance of External Walls in Fire:</b> 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.</p> <p><b>Comment:</b> Structural Design certification and details demonstrating compliance are required to be provided at CC Application Stage for the proposed warehouses.</p>

### 3.3 Section D – Access and Egress

<p><b>D2D3</b></p>	<p><b>Number of Exits Required:</b> The building is required to be provided with 1 exit from each storey.  <b>Comment:</b> The proposed building is compliant with the requirements of D2D3, whereby at least 1 exit has been provided to all parts of the building.</p>
<p><b>D2D5</b></p>	<p><b>Exit Travel Distances:</b> 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.</p> <p>In a Class 5, 6, 7, 8 &amp; 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.</p> <p><b>Comment:</b> The exit travel distances in the proposed building are non-compliant within the warehouse portions of the office. In this regard, the following non-compliances issued will be required to be addressed as a Performance Solution by the Fire Safety Engineer to demonstrate compliance with Performance Requirements D1P4 and E2P2:</p> <ul style="list-style-type: none"> <li>+ Warehouse 2A-1 – 77m to an exit from the central parts of the warehouse</li> <li>+ Warehouse 2A-2 – 88m to an exit from the central parts of the warehouse</li> <li>+ Warehouse 2B-1 – 68m to an exit from the central parts of the warehouse</li> <li>+ Warehouse 2B-2 – 71m to an exit from the central parts of the warehouse</li> </ul>
<p><b>D2D6</b></p>	<p><b>Distance Between Alternative Exits:</b> Exits required as alternative exits must be –</p> <ul style="list-style-type: none"> <li>+ 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</li> <li>+ not less than 9m apart; and</li> <li>+ not more than – 60m apart.</li> <li>+ Located so that the alternative paths of travel do not converge such that they become less than 6m apart.</li> </ul> <p><b>Comment:</b> The following extended distances between alternative exits will be required to be addressed as a Performance Solution by the Fire Safety Engineer:</p> <ul style="list-style-type: none"> <li>+ Warehouse 2A-1 – 153m between alternative exits</li> <li>+ Warehouse 2A-2 – 174m between alternative exits</li> <li>+ Warehouse 2B-1 – 140m between alternative exits</li> <li>+ Warehouse 2B-2 – 145m between alternative exits</li> </ul>
<p><b>D2D7 – D2D11</b></p>	<p><b>Dimensions of Paths of Travel to an Exit:</b> 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.</p> <p><b>Comment:</b> For the purposes of this assessment, population numbers for the proposed warehouse have been provided by SBA/Goodman via email dated 09.10.2024. In this regard, given the number of exits proposed and the nature of the use of the facility it is considered that compliance with the provisions of D2D7 to D2D11 is readily achievable.</p>
<p><b>D2D14</b></p>	<p><b>Travel Via Non-Fire Isolated Required Stairways:</b> 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.</p>

	<p>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.</p> <p><b>Comment:</b> Compliance readily achievable. Details to be provided of stairs serving the office area.</p>		
<p><b>D2D18</b></p>	<p><b>Number of Persons Accommodated:</b> 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.</p> <p><b>Comment:</b> The following population numbers have been calculated in accordance with D2D18(c) based on advice provided from Goodman and the Design Team via email dated 09.10.2024.</p> <table border="0"> <tr> <td style="vertical-align: top;"> <p><b>Building 2A-1</b></p> <p>Office: 66 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 156 persons</p> <p><b>Building 2B-1</b></p> <p>Office: 38 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 88 persons</p> </td> <td style="vertical-align: top;"> <p><b>Building 2A-2</b></p> <p>Office: 91 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 213 persons</p> <p><b>Building 2B-2</b></p> <p>Office: 37 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 85 persons</p> </td> </tr> </table>	<p><b>Building 2A-1</b></p> <p>Office: 66 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 156 persons</p> <p><b>Building 2B-1</b></p> <p>Office: 38 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 88 persons</p>	<p><b>Building 2A-2</b></p> <p>Office: 91 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 213 persons</p> <p><b>Building 2B-2</b></p> <p>Office: 37 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 85 persons</p>
<p><b>Building 2A-1</b></p> <p>Office: 66 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 156 persons</p> <p><b>Building 2B-1</b></p> <p>Office: 38 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 88 persons</p>	<p><b>Building 2A-2</b></p> <p>Office: 91 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 213 persons</p> <p><b>Building 2B-2</b></p> <p>Office: 37 persons</p> <p>Dock Office: 6 persons</p> <p>Warehouse: 85 persons</p>		
<p><b>D3D4</b></p>	<p><b>Non-Fire Isolated Stairways and Ramps:</b> In a building with a rise in storeys of more than 2, required non-fire-isolated stairways and ramps must be either constructed of</p> <ul style="list-style-type: none"> <li>+ Reinforced or prestressed concrete; or</li> <li>+ Steel at least 6mm thick at all points; or</li> <li>+ Timber that has a finished thickness of at least 44mm, has an average density of at least 800 kg/m<sup>3</sup> 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</li> <li>+ 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.</li> </ul> <p><b>Comment:</b> The requirements of D3D4 apply to any proposed non fire isolated exit stair within the proposed Building. Further details of the stair design are to be provided at CC Application stage.</p>		
<p><b>D3D8</b></p>	<p><b>Installations in Exits and Paths of Travel:</b> 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.</p> <p><b>Comment:</b> 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 suitable sealed against the spread of smoke.</p>		
<p><b>D3D9</b></p>	<p><b>Enclosure of Space under Stairs and Ramps:</b> 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.</p> <p><b>Comment:</b> Details of any cupboards contained underneath stairs to be provided at CC stage.</p>		
<p><b>D3D14 – D3D16</b></p>	<p><b>Stairways, Landings, and Thresholds:</b></p> <ul style="list-style-type: none"> <li>+ Stairway dimensions must comply with Table D3D14.</li> <li>+ A stairway must have no more than 18, nor less than 2, risers in each flight.</li> <li>+ Landings must be not less than 750mm in length.</li> <li>+ Slip Resistance of stair nosings and landings must comply with Table D3D15.</li> </ul>		

	<ul style="list-style-type: none"> <li>+ 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 <math>\leq 190\text{mm}</math>, though an accessible threshold ramp is required in accessible areas (refer to Part D4).</li> </ul> <p><b>Comment:</b> Details of stairs and ramps to be provided at CC stage.</p>
<p><b>D3D17 – D3D21</b></p>	<p><b>Balustrades or Other Barriers:</b> These clauses detail where balustrades are required to be provided and sets out in specific detail the construction requirements.</p> <ul style="list-style-type: none"> <li>+ 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.</li> <li>+ 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.</li> <li>+ 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.</li> <li>+ 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.</li> </ul> <p><b>Comment:</b> Details of balustrades to be provided at CC stage.</p>
<p><b>D2D22</b></p>	<p><b>Handrails:</b> This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings.</p> <p><b>Comment:</b> Details of handrails to be provided at CC stage.</p>
<p><b>D2D23</b></p>	<p><b>Fixed Platforms, Walkways, Stairways and Ladders:</b> A fixed platform, walkway, stairway, ladder, any going and riser, landing, handrail or barrier attached thereto may comply with AS 1657 if it only serves a machinery room, boiler house, lift-machine rooms, plant rooms or the like.</p> <p><b>Comments:</b> Further details required at CC stage.</p>
<p><b>D3D24</b></p>	<p><b>Doorways and Doors:</b> 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.</p> <p>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.</p> <p><b>Comment:</b> Details demonstrating compliance will be required to be included the CC plans.</p>
<p><b>D3D25 &amp; D3D26</b></p>	<p><b>Doors and Latching:</b> 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.</p> <p><b>Comment:</b> Architect to note. Details demonstrating compliance will be required to be included the CC plans.</p>
<p><b>D4D2 &amp; D4D3</b></p>	<p><b>General Building Access Requirements:</b> 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.</p> <p>Access is required to and within all areas normally used by the occupants.</p> <p><b>Comment:</b> Compliant access is required from the allotment boundary and from accessible parking spaces to the main entry of each office in accordance with AS 1428.1 – 2009. An accessway is not provided to each office from the main points of a pedestrian entry at the allotment boundary. Refer D4D5 below for potential exemptions. Details are required to be provided at CC stage.</p>

<p><b>D4D4</b></p>	<p><b>Parts of the Building to be Accessible:</b> This clause specifies the requirements for accessways within buildings which must be accessible. In accordance with Clause D4D4; ramps &amp; stairways must comply with Clause 10 &amp; 11 of AS 1428.1-2009 (respectively), whilst fire isolated stairs must comply with Clauses 11.1(f) &amp; (g) of AS 1428.1-2009 only. In addition, any storey with a floor area more than 200m<sup>2</sup> must be served by a passenger lift that is designed to comply with Part E3, and all accessways must include passing &amp; turning spaces per AS 1428.1-2009.</p> <p>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.</p> <p><b>Comment:</b> Access is required throughout all areas in the warehouse and office in accordance with AS 1428.1-2009 with the exception of those areas subject to a D4D5 concession. Details demonstrating that the main entrances to the offices are compliant with AS 1428.1-2009 are to be provided at CC application stage.</p> <p>It is understood that an Access Consultant has been engaged for the development and as such reference should be made to any access consultant's report for further details. .</p>
<p><b>D4D5</b></p>	<p><b>Exemptions:</b> 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.</p> <p><b>Comment:</b> Reference is to be made to the Access Consultant Report. Note: Consideration to an exemption to the Warehouse areas may be appropriate on this project. Confirmation from Goodman 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.</p>
<p><b>D4D6</b></p>	<p><b>Accessible Parking:</b> This clause provides details of the number of accessible carparking spaces required in a carpark depending on the classification of the building.</p> <p><b>Comment:</b> Compliant number of accessible carparking spaces have been nominated. Further details of these spaces will be required at CC stage demonstrating compliance.</p>
<p><b>D4D7</b></p>	<p><b>Signage:</b> 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.</p> <p><b>Comment:</b> Architect to note.</p>
<p><b>D4D9</b></p>	<p><b>Tactile Indicators:</b> 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.</p> <p><b>Comment:</b> Details of tactile indicators to be provided at CC stage.</p>
<p><b>D4D12</b></p>	<p><b>Ramps:</b> 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.</p> <p><b>Comment:</b> Details demonstrating compliance will be required at CC stage.</p>
<p><b>D4D13</b></p>	<p><b>Glazing on an Accessway:</b> 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.</p> <p><b>Comment:</b> Details demonstrating compliance will be required at CC stage.</p>

## 3.4 Section E – Services and Equipment

<b>E1D2</b>	<p><b>Fire Hydrants:</b></p> <ul style="list-style-type: none"> <li>+ E1D2(1) – A fire hydrant system must be provided to serve a building having a total floor area greater than 500m<sup>2</sup> and where a fire brigade is available to attend a building fire.</li> <li>+ 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.</li> <li>+ E1D2(4) – states that internal fire hydrants must serve the level in which they are installed.</li> </ul> <p><b>Comment:</b> The proposed warehouse buildings are required to be served by a fire hydrant system, designed in accordance with AS 2419.1-2021 Appendix C. Due to the volume of the Warehouses exceeding 108,000m<sup>3</sup>, a Performance Solution is required to facilitate the design of the system.</p> <p>Detailed plans showing the hydrant system layout (incl. the booster assembly and pumps) are to be provided with the relevant CC application(s). The plans must also demonstrate how coverage is achieved to all areas of the building.</p>
<b>E1D3</b>	<p><b>Fire Hose Reels:</b> 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.</p> <p><b>Comment:</b> The proposed building is required to be served by a compliant fire hose reel system within the Class 7b areas only (excluding the Class 5 Office areas). Note: A performance solution may be required from the Fire Engineer if it is proposed to use 50m length hose reels to serve the warehouse. Details demonstrating compliance are to be provided at the CC application Stage</p>
<b>NSW E1D4, E1D12 &amp; E1D13</b>	<p><b>Sprinklers</b></p> <p>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.</p> <p>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.</p> <p><b>Comment:</b> The proposed Large Isolated Building is required to be sprinkler protected throughout in order to address the requirements of Clause C3D4, E1D12 and E1D13. Details demonstrating compliance are to be provided at the CC application stage.</p> <p>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 – see comments under E1D2 above regarding potential booster Performance Solution.</p> <p><b>Note:</b> The location of the sprinkler booster is likely to require a Performance Solution due to requirements for booster to comply with AS 2419.1-2021. IN addition, where sprinkler protection design necessitates utilizes a design standard other than AS 2118.1-2017 &amp; Spec.17, a Performance Solution is required.</p>
<b>E1D14</b>	<p><b>Portable Fire Extinguishers:</b> To be provided and designed in accordance with Sections 1, 2 and 3 of AS 2444-2001.</p> <p><b>Comment:</b> Fire extinguishers will be required to be installed in the proposed building in accordance with sub-clauses (1), (3) &amp; (5) and AS 2444-2001.</p>
<b>E1D15</b>	<p><b>Fire Control Centre:</b> A fire control centre is to be provided based on the total building floor area comprising more than 18,000m<sup>2</sup>. A fire control centre must:</p> <ul style="list-style-type: none"> <li>+ 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.</li> <li>+ Provide an area from which fire-fighting operations or other emergency procedures can be controlled. Must not be used for any other purpose.</li> </ul> <p><b>Comment:</b> The proposed warehouse buildings are required to be provided with a Fire Control Centre designed in accordance with Spec. 19 (Clause S19C3 to S19C6). Details demonstrating compliance to be provided at CC Application stage.</p>

<p><b>E1D17</b></p>	<p><b>Provisions for Special Hazards:</b> Suitable additional provisions must be made for fire-fighting if unique problems could arise due to;</p> <ul style="list-style-type: none"> <li>+ The nature or quantity of materials stored, displayed or used in a building on the allotment; or</li> <li>+ The location of the building in relation to a water supply for firefighting purposes.</li> </ul> <p><b>Comment:</b> Details of any proposed additional firefighting systems are required to address any additional hazards resulting from the proposed storage or use of the building to be provided at CC Application Stage.</p>
<p><b>E2D3</b></p>	<p><b>General Requirements:</b> 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.</p> <p>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.</p>
<p><b>E2D9, E2D10</b></p>	<p><b>Smoke Hazard Management:</b> The following smoke hazard management systems are to be installed throughout all buildings:</p> <ul style="list-style-type: none"> <li>+ An Automatic Fire Detection and Alarm System and Building Occupant Warning System complying with AS 1670.1 – 2018 and S20C4 (5m grid) S20C6 (10m grid).</li> <li>+ Automatic shut-down of mechanical air handling systems upon fire trip in accordance with Section 5 and 6 of AS 1668.1.</li> <li>+ An automatic smoke exhaust system in accordance with the requirements of Specification 21.</li> <li>+ Sprinkler system in accordance with Specification 17.</li> </ul> <p><b>Comment:</b> An automatic smoke exhaust system is required to buildings where their volume exceeds 108,000m<sup>3</sup>. A Performance solution may be provided for the rationalisation of the requirements associated with the automatic smoke exhaust systems (e.g. smoke reservoirs, smoke exhaust rates, sprinklers to initiate smoke exhaust in lieu of smoke detection).</p>
<p><b>E2D21</b></p>	<p><b>Provisions for Special Hazards:</b> Additional smoke hazard management measures may be necessary due to the—</p> <ul style="list-style-type: none"> <li>+ Special characteristics of the building; or</li> <li>+ Special function or use of the building; or</li> <li>+ Special type or quantity of material stored, displayed or used in a building; or</li> <li>+ Special mix of classifications within a building or fire compartment, which are not addressed in E2D4 to E2D20.</li> </ul> <p><b>Comment:</b> Where applicable, details of the proposed additional smoke hazard management systems are required to address the additional hazard resulting from the proposed storage or use of the building.</p>
<p><b>E3D4</b></p>	<p><b>Warning Against use of Lifts in Fire:</b> 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.</p> <p><b>Comment:</b> Note.</p>
<p><b>E3D6</b></p>	<p><b>Landings:</b> Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Parts D2 &amp; D3.</p> <p><b>Comment:</b> Compliance to be confirmed upon receiving office layouts.</p>
<p><b>E3D7</b></p>	<p><b>Passenger Lift Types and Their Limitations:</b> 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.</p> <p><b>Comment:</b> Details, including design certification, to be provided at CC stage.</p>
<p><b>E4D2 – E4D8</b></p>	<p><b>Emergency Lighting and Exits Signs:</b> Emergency lighting and exit signage to be provided in accordance with E4D2 - E4D5 complying with AS 2293.1 – 2018.</p>

<b>E4D4</b>	<p><b>Design &amp; Operation of Emergency Lighting:</b> Every required emergency lighting system must comply with AS 2293.1-2018.</p> <p><b>Comment:</b> Note.</p>
<b>E4D5</b>	<p><b>Exit Signs:</b> 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.</p> <p><b>Comment:</b> Details required of emergency lighting and exit signage at CC stage.</p>
<b>E4D6</b>	<p><b>Direction Signs:</b> 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.</p> <p><b>Comment:</b> Note.</p>

### 3.5 Section F – Health and Amenity

<b>F1D3</b>	<p><b>Stormwater Drainage:</b> 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.</p> <p><b>Comment:</b> Design and certification to be provided from a suitably qualified consultant at the CC stage.</p>
<b>F1D4</b>	<p><b>Exposed Joints:</b> Exposed joints in the drainage surface on a roof, balcony, podium or similar horizontal surface part of a building must—</p> <ul style="list-style-type: none"> <li>+ Be protected in accordance with Section 2.9 of AS 4654.2; and</li> <li>+ Not be located beneath or run through a planter box, water feature or similar part of the building</li> </ul> <p><b>Comment:</b> Details of weatherproofing of horizontal surfaces to be provided at CC stage.</p>
<b>F1D5</b>	<p><b>External Waterproofing Membranes:</b> External waterproofing membranes are required to comply with AS 4654.1 &amp; 2.</p> <p><b>Comment:</b> Details required at CC stage demonstrating compliance.</p>
<b>F1D6</b>	<p><b>Damp-Proofing:</b></p> <ul style="list-style-type: none"> <li>+ This sub-clause requires that moisture from the ground must be prevented from reaching certain parts of buildings as listed.</li> <li>+ 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.</li> <li>+ This sub-clause lists the buildings and parts of a building that do not need to comply with (a).</li> </ul> <p><b>Comment:</b> Details required at CC stage demonstrating compliance.</p>
<b>F1D7</b>	<p><b>Damp Proofing of Floors on the Ground:</b> 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.</p> <p>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.</p> <p><b>Comment:</b> Details required at CC stage demonstrating compliance.</p>
<b>F2D3 &amp; F2D4</b>	<p><b>Wet Area Construction:</b> 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.</p> <p><b>Comment:</b> Note.</p>

<b>F2D4</b>	<p><b>Floor Wastes:</b> 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.</p> <p><b>Comment:</b> Details required at CC stage demonstrating compliance.</p>																																							
<b>F3D2</b>	<p><b>Roof Coverings:</b> 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.</p> <p><b>Comment:</b> Details required at CC stage demonstrating compliance.</p>																																							
<b>F3D3</b>	<p><b>Sarking:</b> Sarking-type materials used for weatherproofing of roofs must comply with AS/NZS 4200 parts 1 and 2</p> <p><b>Comment:</b> Details required at CC stage demonstrating compliance.</p>																																							
<b>F3D4</b>	<p><b>Glazed Assemblies:</b> 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</p> <p><b>Comment:</b> Details required at CC stage demonstrating compliance.</p>																																							
<b>F3D5</b>	<p><b>Wall Cladding:</b> The following wall cladding materials are deemed to satisfy Performance Requirement F3P1:</p> <ul style="list-style-type: none"> <li>+ Masonry, including masonry veneer, unreinforced and reinforced masonry, complying with AS 3700,</li> <li>+ Autoclaved aerated concrete, complying with AS 5146.3,</li> <li>+ Metal wall cladding, complying with AS 1562.1.</li> </ul> <p><b>Comment:</b> Details required at CC stage demonstrating compliance.</p>																																							
<b>F3P1 &amp; F3D5</b>	<p><b>Performance Requirement F3P1:</b> A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause</p> <ul style="list-style-type: none"> <li>+ Unhealthy or dangerous conditions, or loss of amenity for occupants; and</li> <li>+ Undue dampness or deterioration of building elements.</li> </ul> <p><b>Note 1:</b> 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.</p> <p><b>Note 2:</b> Refer to Clause F3D2 for roof coverings.</p> <p><b>Comment:</b> A Performance Solution Report will be required to address the above, noting that the proposed design does not comprise of wholly DtS materials.</p>																																							
<b>F4D3</b>	<p><b>Calculation Of Number Of Occupants And Facilities:</b> This clause sets out the requirements for the calculation of the number of occupants and the number of sanitary facilities required to be installed in Class 2 to 9 buildings.</p> <p><b>Comment:</b> Note.</p>																																							
<b>F4D4</b>	<p><b>Facilities in Class 3 to 9 Buildings:</b> This clause provides the requirements for sanitary facilities to be installed in Class 3-9 buildings in accordance with <b>Tables F4D4a – F4D4l</b>. The requirements and variations are set out in sub-clauses (1)-(11).</p> <p><b>Comment:</b> Based on the population numbers calculated under Part D, the required sanitary facilities for the proposed development have been calculated as follows.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #f4a460;"> <th colspan="8">+ Sanitary Facility Calculations – Warehouses</th> </tr> <tr style="background-color: #d3d3d3;"> <th rowspan="2"></th> <th colspan="2">Closet Pans</th> <th colspan="2">Urinals</th> <th colspan="2">Washbasins</th> <th>Complies</th> </tr> <tr style="background-color: #d3d3d3;"> <th>Required</th> <th>Proposed</th> <th>Required</th> <th>Proposed</th> <th>Required</th> <th>Proposed</th> <th>Yes/No</th> </tr> </thead> <tbody> <tr style="background-color: #333; color: white;"> <td colspan="8">+ Warehouse 2A-1 (156 employees)</td> </tr> <tr> <td style="background-color: #d3d3d3;">Male</td> <td>2</td> <td>5</td> <td>2</td> <td>3</td> <td>2</td> <td>4</td> <td>Yes</td> </tr> </tbody> </table>	+ Sanitary Facility Calculations – Warehouses									Closet Pans		Urinals		Washbasins		Complies	Required	Proposed	Required	Proposed	Required	Proposed	Yes/No	+ Warehouse 2A-1 (156 employees)								Male	2	5	2	3	2	4	Yes
+ Sanitary Facility Calculations – Warehouses																																								
	Closet Pans		Urinals		Washbasins		Complies																																	
	Required	Proposed	Required	Proposed	Required	Proposed	Yes/No																																	
+ Warehouse 2A-1 (156 employees)																																								
Male	2	5	2	3	2	4	Yes																																	

Female	3	5	-	-	2	4	Yes
<b>+ Warehouse 2A-2 (213 employees)</b>							
Male	3	6	2	4	2	4	Yes
Female	4	7	-	-	2	6	Yes
<b>+ Warehouse 2B-1 (88 employees)</b>							
Male	3	3	2	2	3	2*	Yes
Female	3	3	-	-	3	3	Yes
<b>+ Warehouse 2B-2 (85 employees)</b>							
Male	3	3	2	2	3	2*	Yes
Female	3	3	-	-	3	3	Yes
<b>+ Sanitary Facility Calculations – Offices</b>							
	Closet Pans		Urinals		Washbasins		Complies
	Required	Proposed	Required	Proposed	Required	Proposed	Yes/No
<b>+ Office 2A-1 (66 employees)</b>							
Male	2	3	2	2	2	2	Yes
Female	3	3	-	-	2	3	Yes
<b>+ Office 2A-2 (91 employees)</b>							
Male	3	3	2	2	2	3	Yes
Female	4	3*	-	-	2	3	Yes
<b>+ Office 2B-1 (38 employees)</b>							
Male	1	2	1	2	1	1	Yes
Female	2	2	-	-	1	2	Yes
<b>+ Office 2B-2 (37 employees)</b>							
Male	1	2	1	1	1	2	Yes
Female	2	2	-	-	1	1	Yes
<b>+ Sanitary Facility Calculations – Dock Offices</b>							
	Closet Pans		Urinals		Washbasins		Complies
	Required	Proposed	Required	Proposed	Required	Proposed	Yes/No
<b>+ Dock Office 2A-1 (6 employees)</b>							
Male	1	2	1	2	1	2	Yes
Female	1	2	-	-	1	2	Yes
<b>+ Dock Office 2A-2 (6 employees)</b>							
Male	1	2	1	2	1	2	Yes
Female	1	2	-	-	1	2	Yes
<b>+ Dock Office 2B-1 (6 employees)</b>							
Male	1	2	1	2	1	2	Yes
Female	1	2	-	-	1	2	Yes
<b>+ Dock Office 2B-2 (6 employees)</b>							
Male	1	2	1	2	1	2	Yes
Female	1	2	-	-	1	2	Yes

	<p><b>Note 1:</b> 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).</p> <p><b>Note 2:</b> Individual stand-alone sanitary compartments must be allocated for use by Males or Females only unless they are designed as a unisex accessible compartment per Clause F2D4(1).</p> <p><b>Note 3:</b> The above assessment has been based on the Ground Floor facilities being allocated to the warehouse staff and the Level One facilities allocated to the office staff. Any residual facilities from the warehouse facilities on ground floor have been allocated to the office staff where there is a shortfall and vice versa.</p>
<p><b>F4D5</b></p>	<p><b>Accessible Sanitary Facilities:</b> 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).</p> <p><b>Comments:</b> Details of accessible sanitary facilities to be provided at CC stage to confirm compliance.</p>
<p><b>F4D8</b></p>	<p><b>Construction of Sanitary Compartments:</b> Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend:</p> <ul style="list-style-type: none"> <li>+ From floor level to the ceiling in the case of a unisex facility; or</li> <li>+ A height of not less than 1.5m above the floor if primary school children are the principal users; or</li> <li>+ 1.8m above the floor in all other cases.</li> </ul> <p>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.</p> <p><b>Comment:</b> Details required at CC stage demonstrating compliance.</p>
<p><b>F5D2</b></p>	<p><b>Height of Rooms and Other Spaces:</b> The ceiling heights in Class 2 to 9 buildings must not be less than required in sub-clauses (1) to (8) of this clause.</p> <p>The minimum ceiling heights for a Class 5, 6 &amp; 7 building are as follows:</p> <ul style="list-style-type: none"> <li>+ Corridor or Passage, Bathroom, Storeroom, etc. – 2.1m</li> <li>+ Remainder – 2.4m.</li> </ul> <p>The minimum ceiling heights for a <u>Class 9b building</u> are as follows:</p> <ul style="list-style-type: none"> <li>+ 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.</li> </ul> <p><b>Comment:</b> Architect to ensure compliance. Ceiling heights are to be reviewed at the Construction Certificate state with the detailed section drawings and reflected ceiling plans.</p>
<p><b>F6D5</b></p>	<p><b>Artificial Lighting:</b> 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.</p> <p><b>Comment:</b> Details, including design certification, to be provided at CC stage.</p>
<p><b>F6D6</b></p>	<p><b>Ventilation of Rooms:</b> 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.</p> <p><b>Comment:</b> Details, including design certification, to be provided at CC stage. Elevations showing ventilation openings are required to confirm compliance where the warehouse is naturally ventilated.</p>

### 3.6 Section J – Energy Efficiency

<b>Part J4</b>	<p><b>Building Fabric:</b> 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.</p> <p><b>Comment:</b> 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.</p>
<b>Part J5</b>	<p><b>Building Sealing:</b> The provision of a compliant building sealing is required to all chimneys &amp; flues, roof lights, windows &amp; doors, Exhaust Fans, Ceilings Walls, &amp; floors in accordance with Clauses J5D3 to J5D7.</p> <p><b>Comment:</b> This section applies to any air-conditioned spaces proposed within the Warehouses buildings. Design details and/or certification of building envelope design will be required to be submitted with the application for a Construction Certificate.</p>
<b>Part J6</b>	<p><b>Airconditioning &amp; Ventilation Systems:</b> 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 <b>Part J6</b> will be required to be provided from the mechanical engineer.</p> <p><b>Comment:</b> Consultant certification required at CC Application Stage.</p>
<b>Part J7</b>	<p><b>Artificial Light &amp; Power:</b> 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 <b>Part J7</b> will be required to be provided from the electrical engineer</p> <p><b>Comment:</b> Consultant certification required at CC Application Stage.</p>
<b>Part J8</b>	<p><b>Hot Water Supply, &amp; Swimming Pool &amp; Spa Pool Plant:</b> 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 <b>Part J8</b> (Section 8 of AS 3500.4) will be required to be provided from the hydraulic engineer.</p> <p><b>Comment:</b> Details and certification demonstrating compliance will need to be submitted with the application for a Construction Certificate.</p>
<b>Part J9</b>	<p><b>Facilities for Energy Monitoring:</b> Provision for monitoring of energy consumption must be provided to a building where the floor area exceeds 500m<sup>2</sup>, and must be capable of recording the consumption of gas and electricity. In addition, where the floor area of the building exceeds 2,500m<sup>2</sup> 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.</p> <p><b>Comment:</b> 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.</p>



## 4.0 Conclusion

This report contains an assessment of the referenced architectural documentation for the proposed industrial development 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.

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## Appendices

## + Appendix 1 – References Tables

**Table 1: 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 5, 7	2.2 kW/m <sup>2</sup>	1.2 kW/m <sup>2</sup>	2.2 kW/m <sup>2</sup>

**Table 2: 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, 7 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 3: Fire-Resisting Construction – Type C 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
<b>EXTERNAL WALL</b> – (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:				
<b>For loadbearing parts:</b>				
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	-/-/-	-/-/-	-/-/-	-/-/-
<b>EXTERNAL COLUMN</b> - 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	-/-/-	-/-/-	-/-/-	-/-/-
<b>COMMON WALLS and FIRE WALLS</b>	90/90/90	90/90/90	90/90/90	90/90/90
<b>INTERNAL WALLS</b>				
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
<b>ROOFS</b>	-/-/-	-/-/-	-/-/-	-/-/-

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.

**Table 4: Fire Safety Schedule**

+ Statutory Fire Safety Measure	+ Design/Installation Standard	+ Existing	+ Proposed
Alarm Signalling Equipment	AS 1670.3 – 2018		✓
Automatic Fail Safe Devices	BCA 2022 Clause D3D26		✓
Automatic Fire Detection & Alarm System	BCA 2022 Spec. 20 AS 1670.1 – 2018		✓
Automatic Fire Suppression Systems	BCA 2022 Spec. 17 AS 2118.1 – 2017		✓
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 Control Centre			
Fire Doors	BCA 2022 Clauses C3D13, C3D14, AS 1905.1 – 2015 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		✓
Fire Seals	BCA 2022 Clause C4D15, AS 1530.4 – 2014 & AS 4072.1 – 2014 and Manufacturer's Specification		✓
Lightweight Construction	BCA 2022 Clause C2D9 AS 1530.4 – 2014 and Manufacturer's Specification		✓
Mechanical Air Handling Systems (Automatic Shutdown)	BCA 2022 Clause E2D3 AS/NZS 1668.1 – 2015 & AS 1668.2 – 2012		✓
Perimeter Vehicular Access	BCA 2022 Clause C3D5		✓
Portable Fire Extinguishers	BCA 2022 Clause E1D14 AS 2444 – 2001		✓

Smoke Hazard Management Systems (Smoke Exhaust)	BCA 2022 Part E2 AS/NZS 1668.1 –2015		✓
Warning & Operational Signs	BCA 2022 Clause D3D28, D4D7, E4D4 AS 1905.1 – 2015 EP&A (DCFS) Regulations 2021 Section 108		✓