

BCA Assessment Report

ESR Huntingwood – Buildings 1-4
Augusta Street, Huntingwood
SSDA-36138263 – MOD 2 Submission

Prepared for:

ESR Australia & New Zealand

Revision 0

15 June 2026

Reference: 250080



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Executive Summary

The following comprises a summary of the key BCA & Accessibility 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. A7G2	Building 4 and the skybridge have been classified as a united building and separate to Building 3. It is understood that the skybridge will be independently supported and form part of the Building 4 structure to utilise the united building provisions under BCA Part A7G2
2. C2D10 & C2D14	Details of the non-combustible external walls, including all ancillary elements and attachments, to the Offices and Warehouses of Building 3 are required to be provided for assessment.
3. C3D8, C3D9, C3D10, C4D4 & Spec 5	FRL plans to demonstrate compliance with Spec 5 are to be provided (detailing locations of all fire rated elements in the building and the Fire Wall between the skybridge and Warehouse 4).
4. C3D13 & C3D14	Details of any proposed fire separation of equipment and electrical infrastructure to be provided at CC application stage.
5. C4D3/C4D5	The openings in the skybridge and Warehouse 3 that are within 6m from another building as identified in the markup below are required to be protected in accordance with BCA Clause C4D4.
6. D2D12	+ The discharge path from the basement carpark of Building 3 necessitates travel within 6m of the external wall. The wall is required to achieve a 1-hour fire rating and openings protected in accordance with C4D5. FRL plans demonstrating compliance are to be provided with the CC Application. + As there are three doors opening into the fire-isolated passageway in the basement carpark of Building 3, a smoke lobby is to be provided in accordance with D3D7 or the exit must be pressurised in accordance with AS1668.1. + The MSB room currently opens directly into the fire isolated passageway in the basement carpark of Building 3 which does not comply with the requirements of this clause. Additionally, a second exit door will likely be required out of the MSB room to comply with the energy provider's requirements.
7. 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.
8. D4D3	Details to be provided of the accessible pathway from the street to the main office entrances as well as from the accessible car spaces. Architect to indicate any ramps/walkways with their respective grades, this will include any required TGSIs, handrails, kerb rails etc.

+ BCA (DtS) Clause		+ Description
9.	D4D4	Details to be provided of the accessible pathway inside each and to the accessible/ambulant sanitary facilities per AS 1428.1-2009.
10.	D4D5	Consideration to an exemption for accessibility to the warehousing areas may be appropriate on this project. Confirmation from ESR 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.
11.	D4D6	There is an excess of 200 parking spaces, however only 2 accessible parking spaces have been nominated on the plans for the Building 3 basement carpark.
12.	E1D15	Details of the proposed Fire Control Centre locations for Buildings 3 & 4 to be provided for review.
13.	E1D17 & E2D21	Provision of additional fire services & smoke hazard management requirements to address additional hazard resulting from any proposed storage/use.
14.	F4D4	The number of sanitary facilities provided do not comply with the requirements of this clause. these population numbers may be considered excessive for the development and hence more accurate population numbers may be provided by ESR/the tenant.
15.	J9D4	The basement carpark is to be provided with electrical distribution boards dedicated to electric vehicle charging in accordance with Table J9D4 in each storey of the carpark. The electrical distribution boards must be sized to support the future installation of 7kW (32A) type 2 electric vehicle chargers in 20% of carparking spaces.

B. Matters requiring fire safety engineered performance solutions:

+ BCA (DtS) Clause		+ Description
1.	C2D2 & Spec 5	+ 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. Where composite steel and concrete construction is proposed, a performance solution may be implemented to omit the protection of secondary steel elements. + Consideration may be given to omit the fire rating to the sky bridge as a Performance Solution by the Fire Engineer.
2.	C2D10 & C2D14	A Performance Solution is required where the use of combustible elements in signage is proposed on the non-combustible façade of Building 3.
3.	C3D4 & C3D5	A performance solution is required to address the Perimeter Vehicular Access for the buildings.
4.	C3D8	The fire wall separating the skybridge & Warehouse 4 from Warehouse 3 is required to achieve an FRL of 240/240/240. Any proposal to rationalize the FRL is to be addressed as a Performance Solution by the Fire Engineer.
5.	D2D5 & D2D6	The current plans indicate that exit travel distances and distances between alternative exits within the buildings will not comply with D2D5 & D2D6–respectively.
6.	E1D2	Design of fire hydrant systems per AS 2419.1-2021 Appendix C as the volume of the buildings are >108,000m ³ .

7.	E1D3	Confirmation is to be provided if 50m fire hose reels are proposed to be utilised in the Class 7b areas of the buildings to determine if a Performance Solution is required from the Fire Engineer.
8.	E1D2 & E1D4	Further design development is required with respect to the location of the sprinkler booster assembly to determine whether a Fire Engineered Performance Solution is required.
9.	E2D10 & Spec 21	A Performance Solution may be considered to Rationalised Smoke Exhaust Design

C. Other matters requiring performance solutions:

+ BCA (DtS) Clause		+ Description
1.	D4D3	An Access Consultant is to prepare a performance solution to omit an accessible pathway between the main entrances of the different offices on the allotment.
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.	F4D5	An accessible sanitary facility has not been provided to the Ground Floor Warehouse sanitary facilities and the dock offices to all buildings where sanitary facilities have been provided. A Performance Solution by the Access Consultant is required to address this non-compliance.
4.	Section J	A separate report will be required from an Energy Efficiency consultant to outline the applicable requirements for the building.

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+ Status	For SSDA MOD Submission		

1.0 Description of Project

1.1 Proposal

bm+g have been commissioned by ESR Australia & New Zealand to undertake an assessment of Buildings 1-4 at Augusta Street Huntingwood against the relevant provisions of the Building Code of Australia 2022 (BCA) to accompany the MOD 2 Application.

The MOD 2 scope proposes changes to Warehouses 1–4 within the Augusta Industrial Estate. These works comprise minor changes to internal warehouse and office configurations, updates to the warehouse and office façade designs, awnings, docks, signage, external lighting, and the construction of a skywalk access between Warehouses 3 and 4. Minor changes are also proposed to vehicular accessways and car parking, with coordinated updates for on lot landscaping.

Further, consent is sought for tree removal within the road reserve of the Great Western Highway to facilitate approved upgrades works for the Flushcombe Road / Great Western Highway intersection.

Specific Modification Works Description

If more specific detail is required for the various warehouse works the following can be used following the 'generic description' paragraph above as an introduction.

Specifically the works involve the following:

Warehouse 1

- Relocation of the office within the building from east to west to better to align with approved car park configuration.
- Reduction in car parking spaces.
- Relocation of recessed dock and introduction of two new loading docks and roller shutter doors on eastern façade.
- Extension of hardstand awning on eastern façade from 15 to 20 metres.
- Changes to external façade materiality, colours, and signage.
- Introduction of external warehouse lighting.

Warehouse 2

- Relocation of office within the building from ground level to mezzanine level.
- Provision of 2 additional loading docks and roller shutter doors on eastern elevation and relocation of rainwater tank.
- Extension of hardstand awning on eastern façade from 15 to 20 metres.
- Provision of 9 additional overspill car parking spaces and associated change to landscaped area.
- Changes to external façade materiality, colours, and signage.
- Introduction of external warehouse lighting.

Warehouse 3&4

- Revised undercroft car parking arrangements and reduction in car parking spaces.
- Changes to external façade materiality, colours, and signage.
- Construction of a sky bridge to provide pedestrian access between Warehouse 3 and 4.
- Introduction of external warehouse lighting.

Tree Removal

- Tree removal within the Great Western Highway road reserve, between back of kerb and the site's northern boundary, in the location of the approved left turn lane into the upgraded Flushcombe Road / Great Western Highway intersection.

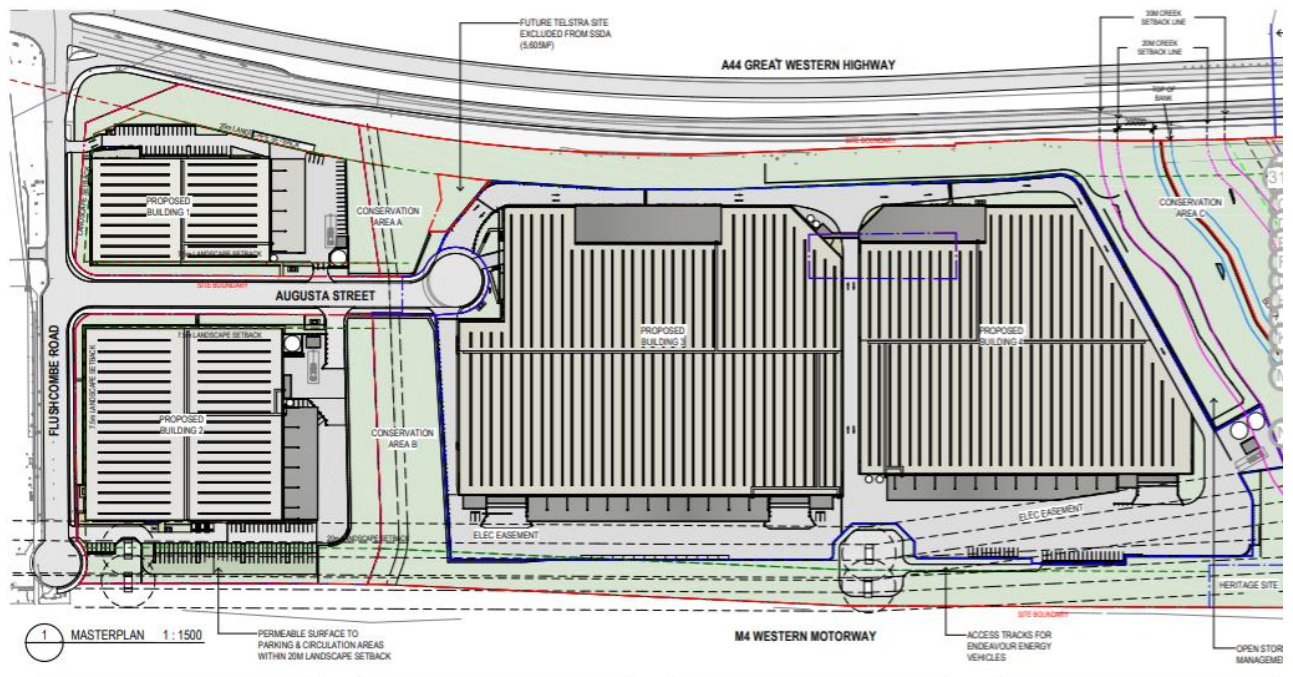


Figure 1 – Masterplan (Drawing No. DA001 Rev 8 dated 21.05.2026)

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.
- + Undertake an assessment of the proposed development against the Disability (Access to Premises – Buildings) Standards 2010.
- + Undertake an assessment of the proposed development against the Part D4 deemed-to-satisfy provisions of the BCA;
- + Identify matters that require plan amendments in order to achieve compliance with the Access to Premises Standard and Part D4 of 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:

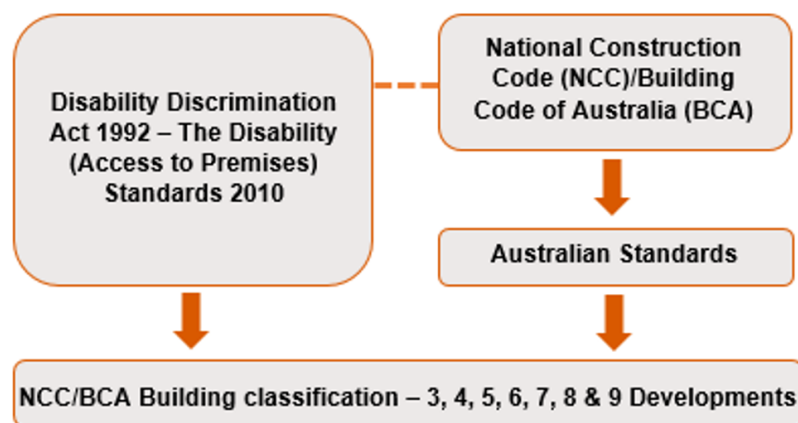
- + Building Code of Australia 2022 (BCA)
- + AS1428.4.1:2009 Design for access and mobility - Means to assist the orientation of people with vision impairment - Tactile ground surface indicators
- + HB198:2014 Guide to the specification and testing of slip resistance of pedestrian surfaces
- + Architectural Plans prepared by SBA Architects:

+ Drawing No.	+ Revision	+ Date
DA000	5	28.05.2026
DA001	8	21.05.2026
DA002	5	21.05.2026
DA002-B	2	28.05.2026
DA003	5	28.05.2026
DA004	5	28.05.2026
DA005	5	28.05.2026
DA006	6	22.04.2026
DA007	3	22.04.2026
DA008	3	22.04.2026
DA010	5	22.04.2026
DA011	5	22.04.2026
DA100	9	05.06.2026
DA110	5	05.06.2026
DA120	4	05.06.2026
DA130	5	05.06.2026
DA131	5	05.06.2026
DA140	4	05.06.2026
DA150	4	05.06.2026
DA200	7	05.06.2026
DA210	5	05.06.2026

+ Drawing No.	+ Revision	+ Date
DA220	4	05.06.2026
DA230	5	05.06.2026
DA231	5	05.06.2026
DA240	4	05.06.2026
DA250	4	05.06.2026
DA300	8	05.06.2026
DA301	9	05.06.2026
DA310	5	05.06.2026
DA320	5	05.06.2026
DA330	6	05.06.2026
DA331	5	05.06.2026
DA340	5	05.06.2026
DA400	9	05.06.2026
DA410	6	05.06.2026
DA420	5	05.06.2026
DA430	7	05.06.2026
DA431	5	05.06.2026
DA440	6	05.06.2026
DA450	5	05.06.2026
DA500	6	05.06.2026
Sk501	5	05.06.2026

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 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 – 2009, 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*.

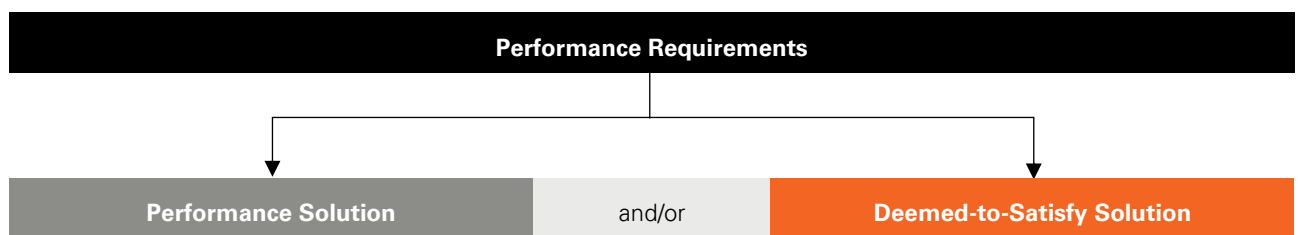
1.6 Relevant Version of the NCC Building Code of Australia

Pursuant to Section 19 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 the proposed development 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) which is in force as of 29 July 2025, with BCA 2025 ***potentially** coming in to force from 1 May 2025

**Note: The Building Ministers Forum has announced that BCA 2025 will be released as a final document on 1 February 2025, with adoption by the States and Territories being available from 1 May 2025. Ultimately, the actual date of adoption is a matter for each State and Territory to determine, with 1 May 2025 being the earliest date in which this can occur.*

The NSW Government is yet to announce an adoption date for BCA 2025. As such, 1 May 2025 should be treated as the target for project adoption of BCA 2025 until advised otherwise by the NSW Government.

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.
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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.

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.

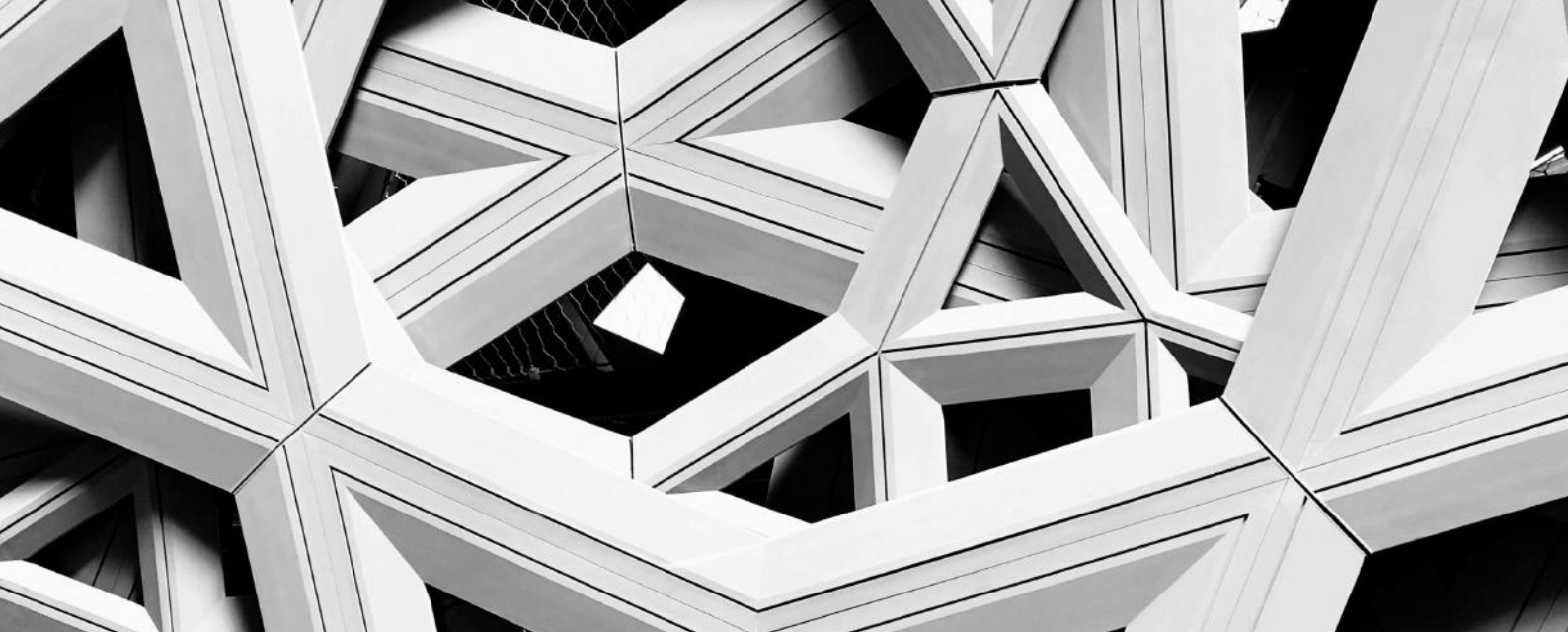
Shared Area (for carparking) – An area adjacent to a dedicated space provided for access or egress to or from a parked vehicle and which may be shared with any other purpose that does not involve other than transitory obstruction of the area, e.g. a walkway, a vehicular aisle, dual use with another adjacent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

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

Sole Occupancy Unit – means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and can include a dwelling and/or office suite

Tactile Ground Surface Indicators (TGSIs) - Truncated cones and/or bars installed on the ground or floor surface, designed to provide pedestrians who are blind or vision-impaired with warning or directional orientation information.

Tactile Sign - Signage incorporating raised text, and/or symbols and Braille to enable touch reading by people who are blind or who are vision impaired.



2.0 Building Characteristics

2.1 Proposed Development

The proposed development consists of the construction of four (4) warehouse buildings with associated offices and carparks, as follows

Building 1:

+ BCA Classifications:	Class 5 (Office) Class 7b (Warehouse)
+ Rise in storeys:	Two (2)
+ Type of Construction:	Type C Construction
+ Importance Level (Structural)	Importance Level 2 (TBC by Structural Engineer)
+ 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

Building 2:

+ 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

Building 3:

+ BCA Classifications:	Class 5 (Office), Class 7a (Basement Carpark), Class 7b (Warehouse)
+ Rise in storeys:	3 (Three)
+ Storeys Contained:	3 (Three)
+ Type of Construction:	Type B Construction
+ Importance Level (Structural)	Importance Level 2 (TBC by Structural Engineer)
+ Sprinkler Protected Throughout	Yes
+ Effective Height	7.35m (RL83.050 – RL75.700)
+ Floor Area	>18,000m ²
+ Volume	>108,000m ³
+ Climate Zone	Zone 6

Building 4:

+ BCA Classifications:	Class 5 (Office), Class 7b (Warehouse),
+ Rise in storeys:	2 (Two)
+ Storeys Contained:	2 (Two)
+ Type of Construction:	Type C Construction
+ Importance Level (Structural)	Importance Level 2 (TBC by Structural Engineer)
+ Sprinkler Protected Throughout	Yes
+ Effective Height	5.8m (RL85.25 – RL79.45)
+ Floor Area	>18,000m ²
+ Volume	>108,000m ³
+ Climate Zone	Zone 6

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.

Building 1:

+ Elevation	+ Fire Source Feature	+ Distance
North	Side or rear boundary	>3m
East	Side or rear boundary	>3m
West	Far side of Flushcombe Road	>3m
South	Far side of Augusta Street	>3m

Building 2:

+ Elevation	+ Fire Source Feature	+ Distance
North	Far Side of Augusta Street	>3m
East	Side or rear boundary	>3m
West	Far side of Flushcombe Road	>3m
South	Side or rear boundary	>3m

Building 3

+ Elevation	+ Fire Source Feature	+ Distance
North	Far side of Great Western Hwy	>18m
East	Building on same allotment	>9m but <18m
West	Side or Rear Boundary	>18m
South	M4 Western Motorway	>18m

Building 4

+ Elevation	+ Fire Source Feature	+ Distance
North	Far side of Great Western Hwy	>3m
East	Side or rear boundary	>3m
West	Building on same allotment	>3m
South	M4 Western Motorway	>3m

Note: Building 4 and the skybridge have been classified as a united building and separate to Building 3. It is understood that the skybridge will be independently supported and form part of the Building 4 structure to utilise the united building provisions under BCA Part A7G2.

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 buildings are required to comply with the requirements of Type A, B, C Construction as stated within Specification 5. The table below provides an overview of the requirements of each. Refer to Table 4 & 5 of Appendix 1 for the FRL requirements of Type B / C Construction.

	Comment: The type of construction applicable to each building is listed in Section 2.1. See notes under Spec. 5, C2D9 & C2D14.
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 buildings have a rise in storeys as follows: - Building 1: Two (2) - Building 2: Two (2) - Building 3*: Three (3) - Building 4: Two (2) *Note: Building 3 has a rise in storeys of three (3) due to the basement carpark which constitutes as a rise in storey.
C2D10	Non-Combustible Building Elements: All materials and or components incorporated in an external wall or fire-rated wall must be non-combustible. This includes but not limited to: + Any external wall claddings. + Any framing or integral formwork systems. I.e. timber framing, sacrificial formwork, etc. + Any external linings or trims. I.e. external UPVC window linings, timber window blades, etc. + Any sarking or insulation contained within the wall assembly. This is not an exhaustive list, and any element incorporated within any external wall assembly must be identified and approved prior to the issue of a Construction Certificate. Refer to Table 1 in Appendix 1 for the elements required to be non-combustible. Comment: The external walls of Building 3 (due to it's Type B designation) including all elements incorporated in the walls), the lift pits, the non-loadbearing internal walls that are required to be fire rated, any proposed fire walls and all services risers are required to be of <u>non-combustible</u> construction in accordance with C2D10 (1) & (2). See additional comments under C2D14 below regarding attachments to the external walls. Details are to be submitted with the CC application for assessment. Note: This does not apply to Buildings 1, 2, 4 and the skybridge as they have been designated at Type C Construction.
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 required at CC application stage.
C2D14	Ancillary Elements: An ancillary combustible element must not be fixed, installed or attached to the internal or external parts of a non-combustible wall unless it is one of the concession items listed in items (a) to (p). Comment: Where illuminated or combustible signage which do not achieve AS 1530.1:1994 criteria or a group number to be fixed to the external walls of Building 3. The architectural elements in the warehouse and office facades will require review to confirm that the proposed external attachments to the external walls achieve compliance with the non-combustibility requirements of this clause – see comments under C2D10 also. Note: This does not apply to Buildings 1, 2, 4 and the skybridge as they have been designated at Type C Construction.
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 warehouse buildings are Class 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 & 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 warehouse buildings are 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 proposed buildings do not comply with the provisions of C3D5 and thus the following non-compliance issues are required to be addressed as a Performance Solution by the Fire Engineer to demonstrate compliance with Performance Requirement C1P9:

Building 1:

- Perimeter Vehicular Access is greater than 18m from the building around Augusta Street and Flushcombe Road.
- Perimeter Vehicular Access requires travel under the awning in the north-eastern corner.

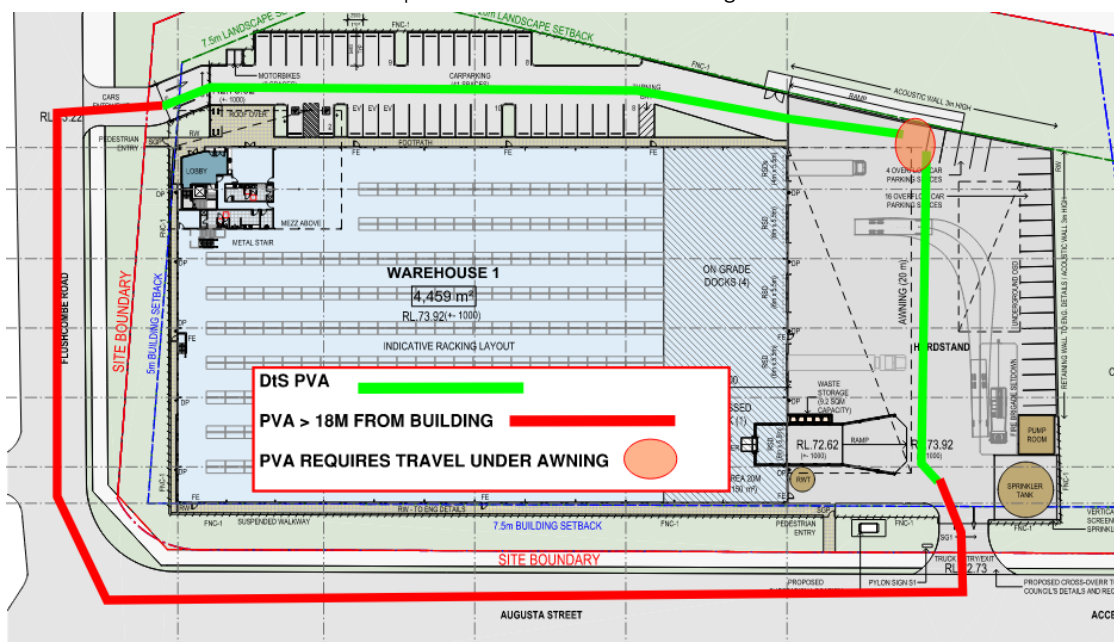


Figure 1- Building 1 Perimeter Vehicular Access

Building 2:

- Perimeter Vehicular Access is greater than 18m from the building around Augusta Street and Flushcombe Road.

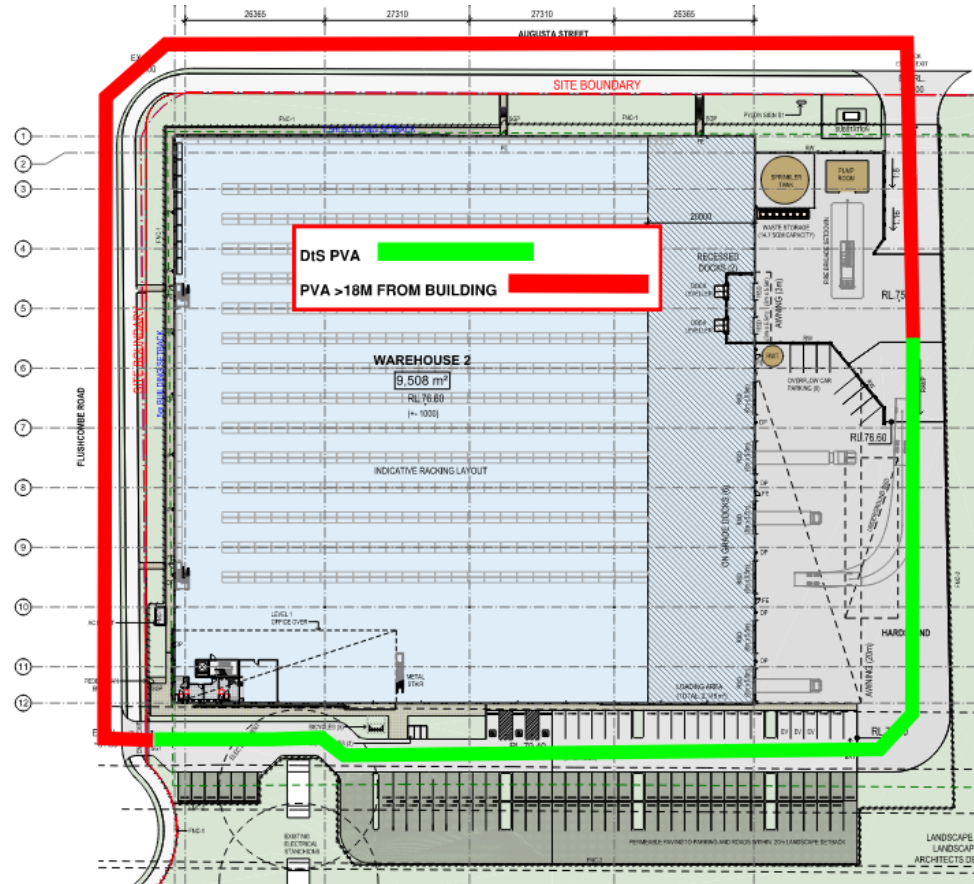


Figure 2- Building 2 Perimeter Vehicular Access

Buildings 3 & 4:

- The PVA requires travel under the skybridge in the northern end of the site between the two buildings
- PVA is greater than 18m from the building in parts of northern elevation of Building 4 and the southern elevation (along the recessed docks) in the southern elevation for both buildings
- PVA is greater than 18m along the cul-de-sac to Building 3
- PVA is less than 6m wide in the south-western corner of Building 3.

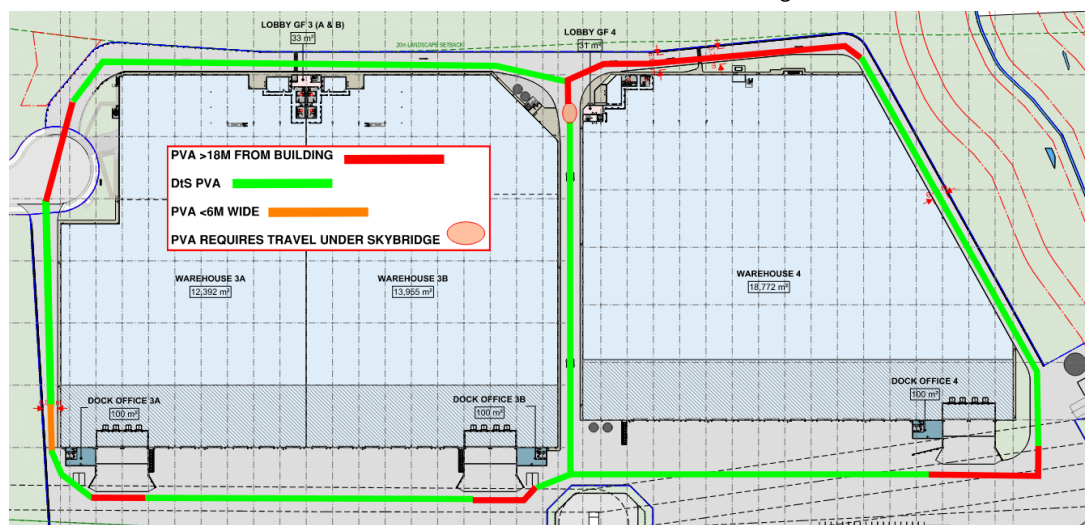


Figure 3- Building 3 & 4 Perimeter Vehicular Access

C3D8

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

- + 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.
- + 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).
- + 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.

Comment: The fire wall as noted in the diagram separating the skybridge & Warehouse 4 from Warehouse 3 is required to achieve an FRL of 240/240/240. Any proposal to rationalize the FRL is to be addressed as a Performance Solution by the Fire Engineer.

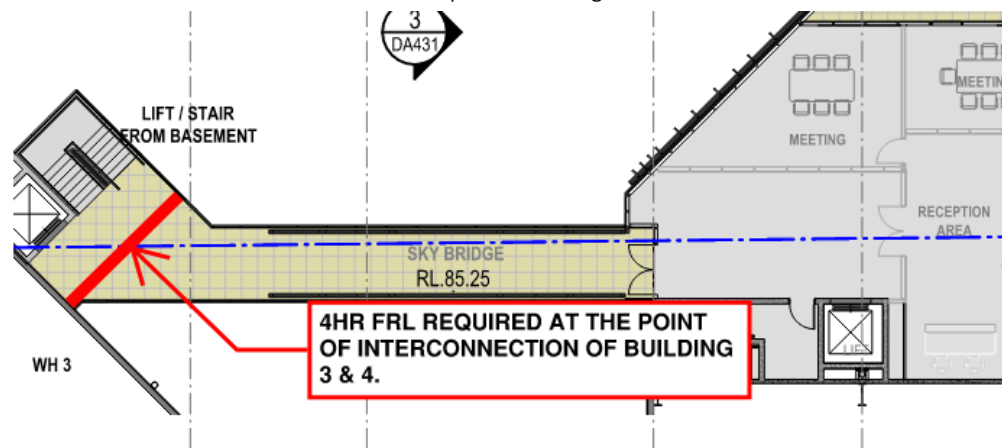


Figure 4- Figure 2- 4HR Fire Wall between WH4 + Skybridge from WH3

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 proposed buildings will each comprise of a single fire compartment due to there being no limitations on fire compartment for large-isolated buildings. In this regard, the higher FRL's applicable to the Class 7b warehouse will apply to the adjoining Class 5 Offices for the buildings. See Spec 5 details in Appendix 1 for FRL requirements applicable to the building.

Note: The lift/stair serving the basement structure of Building 3 has been classified as part of the Class 7b warehouse, as it is located on the same storey as the warehouse.

C3D11

Separation of Lift Shafts: The lift shaft in Office 5B1 & 5B2 is required to achieve a -/120/120 FRL as it connects greater than 3 storeys.

Comment: The lift serving the Building 3 carpark and office lobbies is required to be in a shaft achieving -/120/120.

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: Details demonstrating compliance are to be submitted with the CC Application plans for the proposed building.

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: The above requirements will need to be taken into consideration as part of the design of the main switch rooms serving the buildings. Where appropriate, details demonstrating compliance are to be included in the CC Application plans for the warehouse building.

C4D3/ C4D5

Protection of Openings in External Walls: Openings that are less than 3m from the allotment boundary or less than 6m from another Class 2-9 building on the allotment are required to be protected in accordance with BCA Clause C4D5.

Comment: The openings in the skybridge and Building 3 that are within 6m from another building as identified in the markup below are required to be protected in accordance with BCA Clause C4D4.

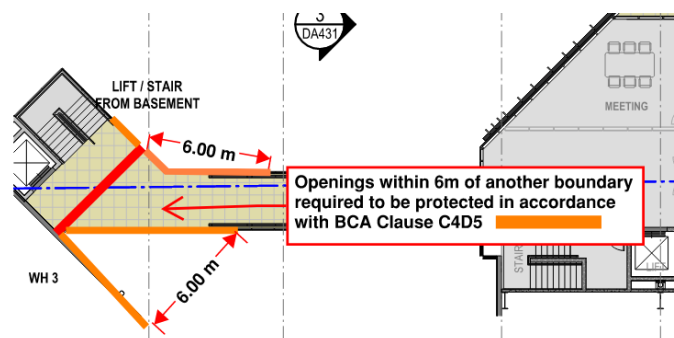


Figure 5- Openings in External wall (B3&4) required to be protected in accordance with C4D5

C4D10

Service Penetrations in Fire-isolated Exits: Fire isolated exits must not be penetrated by any services other than electrical wiring as permitted by D3D8(6), ducting associated with a pressurisation system or water supply pipes for fire services.

Comment: Services Consultants to note and ensure compliance with regards to restriction of services penetrating the fire isolated stairs and passageway.

C4D11

Openings in Fire-isolated Shafts: If lift shafts are required to be fire-isolated an entrance doorway must be protected by -/60/- fire doors and the lift indicator panels must be backed by construction having an FRL of not less than -/60/60 if it exceeds 35,000mm².

Comment: Details are to be included on the Architectural Plans and certification from the lift consultant to confirm compliance is to be provided with the Construction Certificate Application.

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: 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.

Building 3 will be subject to compliance with the **Type B Construction provisions** of tables S5C21a to S5C21g as summarized below:

- + All internal load-bearing columns, & walls (excluding those providing direct support to the roof only) are to achieve the required FRL per Table S5C21g: 240/- FRL. Note: Applies to columns supporting the Level 1 Office and columns supporting the Ground Level Slab in the basement carpark.
- + The load-bearing elements in the eastern external wall of Building 3 is required to achieve an FRL per Table S5C21a where the wall is located within 18m of a building on the same allotment – see Figure 4 below.

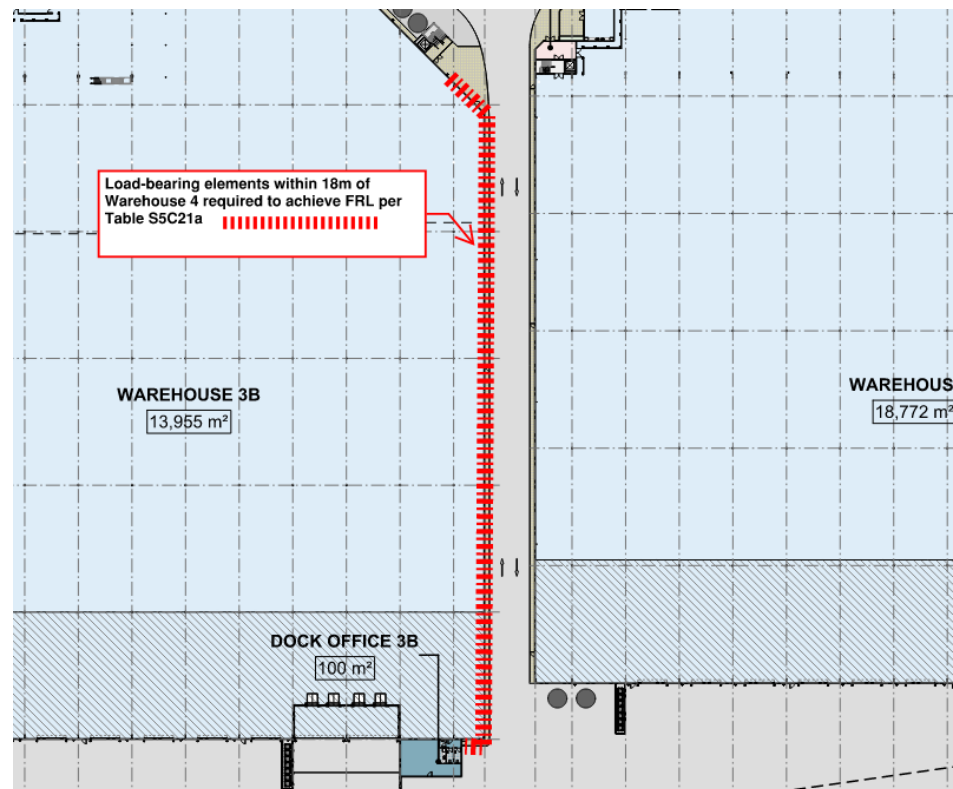


Figure 6- Load-bearing Elements in WH3 within 18m required to achieve FRL.

- + The portions of the Building 3 located within 18m of Building 4 and the Skybridge Structure are required to achieve an FRL per Table S5C21a

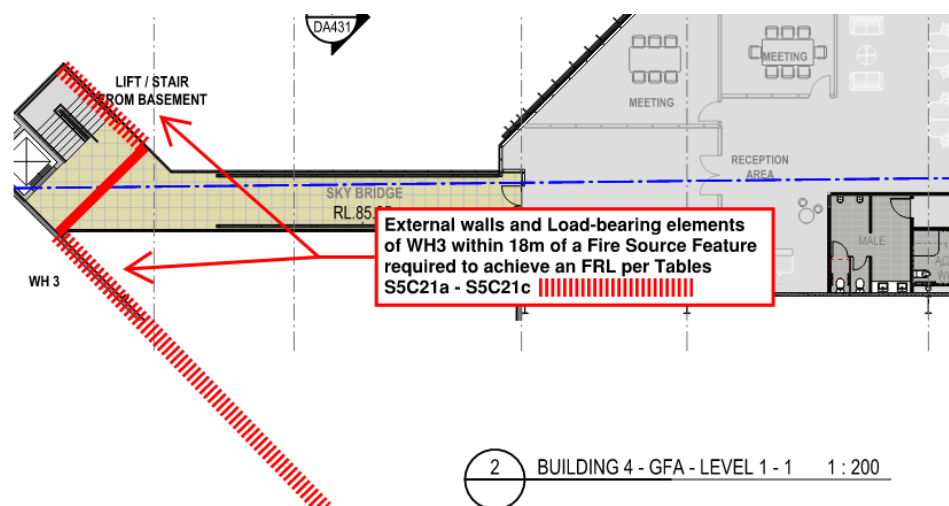


Figure 7- External Walls of Building 3 required to Achieve FRL

Buildings 1, 2 & 4 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.

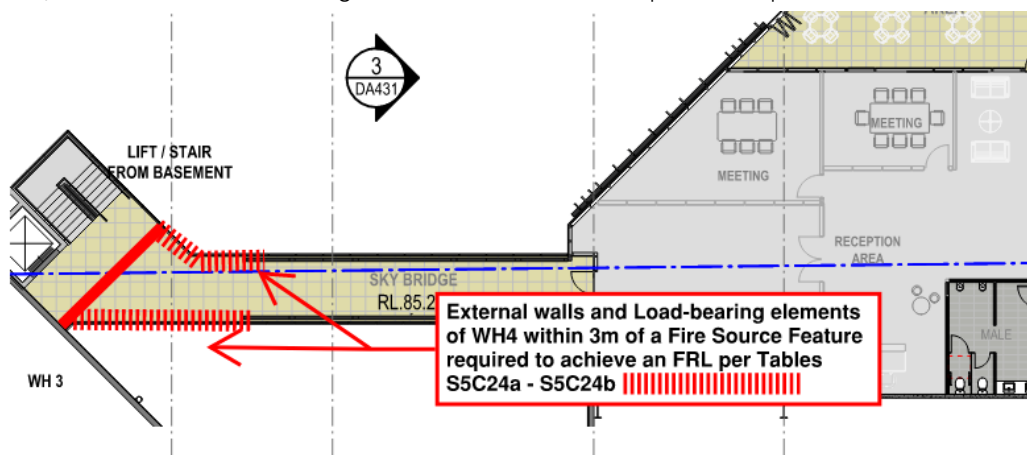


Figure 8- External Walls within 3m of Fire Source Feature of Building 4 required to achieve FRL

Note: 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 exit to each storey. Comment: The current architectural drawings indicate that compliance is achieved in both buildings.
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: 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: <u>Building 1:</u> - Up to 65m to an exit from the central parts of the warehouse. - Up to 23m to a point of choice to alternative exits from the Level 1 Office. <u>Building 2:</u> - Up to 80m to an exit from the central parts of the warehouse. <u>Building 3:</u> - Up to 95m to an exit from the central parts of the warehouse - Up to 23m to a point of choice to alternative exits from the south-eastern corner of the basement carpark - Up to 76m to an exit from the central parts of the basement carpark <u>Building 4:</u> - Up to 102m to an exit from the central parts of the warehouse - Up to 46m to an exit from the Level 1 Office.
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: 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. <u>Building 1:</u> - Up to 135m between alternative exits within the warehouses. - The alternative exits to the Level 1 Office are less than 9m apart. <u>Building 2:</u> - Up to 160m between alternative exits within the warehouse.

Building 3:

- Up to 190m between alternative exits from the central parts of the warehouse in
- Up to 151m between alternative exits from the central parts of the basement carpark

Building 4:

- Up to 207m between alternative exits from the central parts of the warehouse.
- Up to 91m between alternative exits in the Level 1 Office.

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 proposed building have been calculated based on the square metre rates listed in Table D2D18 to facilitate an assessment of the provisions of D2D7 to D2D11 – see D2D18 below - and as a result it is considered that compliance with D2D7 to D2D11 is readily achievable.

Exit corridors and stairs and other paths of travel are to be a minimum 1m in width and 2m in height clear of any obstructions. The unobstructed height of any doorway may be reduced to not less than 1980mm and the width may be reduced by 250mm from the required exit dimensions listed above.

D2D12

Travel via Fire Isolated Exits: A fire isolated stairway is required to provide independent egress from each storey that it serves and discharge directly –

- + To a road open space; or
- + To a point –
 - + In a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and
 - + From which an unimpeded path of travel, not further than 20m, is available to a road or open space

External walls and openings exposed to the discharge path of a fire-isolated stairway (less than 6m, measured perpendicular to the path of travel) must be protected with a 1-hour fire-rating for external walls, and C4D5 for openings.

Comment: The discharge path of the fire-isolated stairway serving the basement carpark of Building 3 necessitates travel within 6m of the external wall. The wall is required to achieve a 1-hour-fire rating and openings protected in accordance with C4D5.

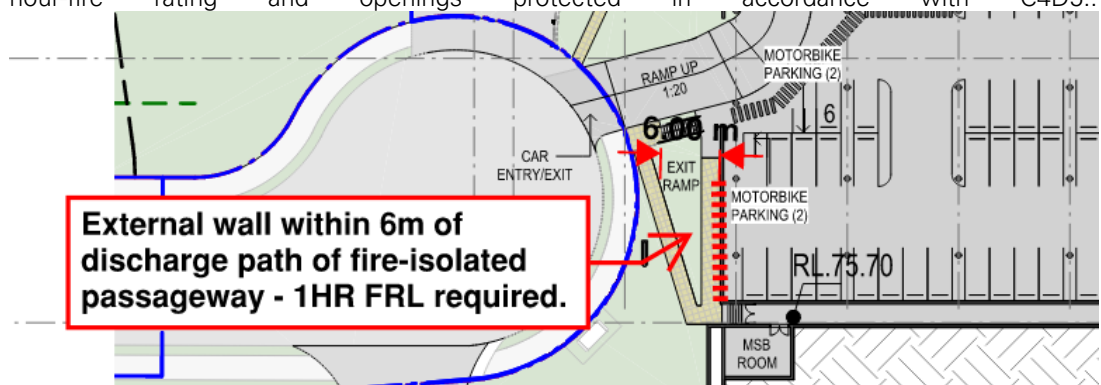


Figure 9-External Wall within 6m of discharge path - 1HR FRL required

As there are three doors opening into the required fire-isolated exit in the basement carpark of Building 3, a smoke lobby must be provided in accordance with D3D7 or the exit must be pressurised in accordance with AS1668.1.

Additionally, the MSB room currently opens directly into the fire isolated passageway which does not comply with the requirements of this clause – redesign required. Note: Ausgrid requirements may require two exits out of the MSB room.

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 and racking structures as per the email correspondence provided by ESR dated 15.04.2026:

Building 1:

Building 1	
Warehouse	37 persons
Office	44 persons

Building 2:

Building 2	
Warehouse	80 persons
Office	51 persons

Building 3:

Building 3	
Warehouse 3A	103 persons
Warehouse 3B	117 persons
Office 3A	76 persons
Office 3B	79 persons
Dock Office 3A	10 persons
Dock Office 3A	10 persons

Building 4:

Building 4	
Warehouse	156 persons
Office	125 persons
Dock Office	10 persons

D2D23

Fixed Platforms, Walkways, Stairways and Ladders: 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.

Comments: Details of where any AS 1657 compliant stairs or ladders are to be used for access/egress in the building are to be included on the CC application plans. It is understood these provisions may be applied to any maintenance ladders or walkways used to access mechanical equipment in the warehouse areas.

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 any proposed non fire isolated exit stair within the proposed buildings. Further details of the stair design are to be provided at CC Application stage.

D3D7

Smoke Lobbies: A smoke lobby required by clause D2D12 must have the following -

- + A floor area of at least 6m².
- + Be separated from the occupied areas in the storey by walls that are impervious to smoke; and
 - Have an FRL of at least 60/60/- (which may be fire-protective grade plasterboard, gypsum block with set plaster, face brickwork, glass blocks or glazing); and
 - Extend from slab to slab or to the underside of a ceiling with a resistance to incipient spread of fire of 60 minutes which covers the lobby; and
 - Any construction joints between the top of the walls and the floor slab, roof or ceiling must be smoke sealed with intumescent putty or other suitable material; and
- + at any opening from the occupied areas, have smoke doors complying with S12C3 and S12C4 except that the smoke sensing device need only be located on the approach side of the opening; and
- + be pressurised as part of the exit if the exit is required to be pressurised under E2D3.

Comment: Refer to D2D12 above. Where smoke lobbies are proposed, they are required to comply with the requirements of this clause.

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: If the space under any of the required exit stairs are proposed to be enclosed to form a cupboard or the like, the enclosing walls and ceilings will need to achieve an FRL of 60 minutes and the doorway will need to be fitted with a self-closing -/60/30 fire door.

D3D11

Pedestrian Ramps: A fire-isolated ramp may be substituted for a fire-isolated stairway if the enclosing structure satisfies the requirements of a fire-isolated stairway.

A ramp serving as an exit must have a gradient not steeper than 1:8, and where the ramp serves as an accessible ramp, be in accordance with AS 1428.1.

The floor surface of the ramp must have a slip-resistance classification not less than that listed in Table D3D15.

+ Application	+ Surface Conditions	
	+ Dry	+ Wet
Ramps steeper than 1:14	P4/R11	P5/R12
Ramp steeper than 1:20 but not steeper than 1:14	P3/R10	P4/R11

Comment: Confirmation to be provided on the grades of the pedestrian ramp providing access from Augusta St to Building 3 on the north-eastern portion of the site to be provided with the CC Application.

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 buildings 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: Architect to note – compliance readily achievable.

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. An accessway must be provided to a building required to be accessible- + From the main points of a pedestrian entry at the allotment boundary; and + From another accessible building connected by a pedestrian link; and + From any required accessible car parking space on the allotment. In a building required to be accessible, an accessway must be provided through the principal pedestrian entrance and through not less than 50% of all pedestrian entrances including the principal pedestrian entry. Comment: 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. 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.
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 or parts of the buildings are required to be accessible throughout in accordance with AS 1428.1 – 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 ESR will be required at the CC application stage that includes a request for a 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: The current carparking design for each building is capable of achieving compliance in this regard where there is minimum 1 accessible carparking space for every 100 or part thereof regular car spaces. There is an excess of 200 carparking spaces in the Building 3 basement carpark however only 2 accessible parking spaces have been provided.
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, any ambulant accessible facility and the paths to accessible pedestrian entries (where required) – Refer to Access Report.

D4D8	Hearing Augmentation: A hearing augmentation system must be provided where an inbuilt amplification system (excluding emergency warning systems) is present in the following areas: + In a room in a Class 9b + In an auditorium, conference room, meeting room, or judicatory room, + In a ticket office, teller's booth, reception area of the like where the public is screened by the service provider. Comment: Confirmation from ESR if any of the office rooms are to be dedicated as a conference/meeting room thus requiring a hearing augmentation system.
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: Stairways and ramps serving the 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 AS 1428.4.1-2009.
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: There are multiple instances where it is not obvious the level at which occupants will egress from the warehouses where the RLs of the building are different levels to which egress will be achieved from other parts of the building on the same level. Architect to ensure all ramps/elevated walkways and their grades are indicated on the plans.
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: Architect to note.

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 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 108,000m³, a Performance Solution is required to facilitate the design of the system. 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 buildings. <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 proposed buildings are required to be served by a compliant fire hose reel system within the Class 6, 7a,7b areas only (excluding the Class 5 Office areas). Note: A performance solution may be required from the Fire Engineer for the lack of compliant hose reel coverage to any areas in the warehouse or to permit 50m hose reels throughout. Details demonstrating compliance are to be provided at the CC application Stage.
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 in accordance with Spec.17. Details demonstrating compliance are required to be submitted with the CC application. 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. A Performance Solution is required by the Fire Engineer to address the location of the Sprinkler 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.
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 Buildings 3 & 4 exceed 18,000m² they are to be provided with Fire Control Centres that comply with Spec 19 (Clauses S19C2 – S19C5). Further details which demonstrate compliance with the requirements of Spec 19 will be required to be included on the CC application plans.
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 Hazardous/Dangerous Goods 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 resulting from the Hazardous/Dangerous Goods storage.
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.

E2D4, E2D9, E2D11, E2D12 & E2D13	Smoke Hazard Management: The following smoke hazard management systems are to be installed to the building and will be required throughout: + An Automatic Fire Detection and Alarm System and Building Occupant Warning System complying with AS 1670.1 – 2018 and S20C4. + Automatic shut-down of mechanical air handling systems upon fire trip in accordance with Section 5 and 6 of AS 1668.1. Comment: Further details to be provided at CC application stage.
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 floor volume of Buildings 3 & 4 exceeds 108,000m³ an automatic smoke exhaust system (incorporating a smoke detection system) is required to be provided, complying with Spec. 21. 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 Details and design certification shall be provided with the CC application. Consideration to a Performance Solution addressing the required smoke hazard management systems may be given. Such a Performance Solution would need to be prepared by the Fire Engineer to demonstrate compliance with Performance Requirement E2P2.
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 Hazardous/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 Hazardous/Dangerous Goods storage.
E3D3	Stretcher Facilities in Lifts: Stretcher facilities, complying with this clause, must be provided in lifts in at least one emergency lift as required by E3.4 or in building where lifts serve any storey above an effective height of 12m. A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above the floor level. Comment: The lift in the buildings do not serve storeys with an effective height of 12m and as such stretcher facilities in lifts are not required.
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: Design certification from the lift supplier shall be provided with the documentation submitted with the Construction Certificate application.
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: Design certification from the lift supplier shall be provided with the documentation submitted with the Construction Certificate application.
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. Comments: Emergency Lighting is required throughout the building in accordance with E4D2, E4D4 and AS/NZS 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. Details demonstrating compliance will be required to be included in the CC plans.
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.
E4D8	Design & Operation of Exit Signs: Every required exit sign must comply with AS 2293.1-2018 and be clearly visible at all times when the building is occupied by any person having the legal right of entry into the building. Comments: 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. Comment: Details of stormwater disposal are required to be prepared by a suitably qualified consultant and submitted with documentation for the CC.
F1D4	Exposed Joints: Exposed joints in the drainage surface on a roof, balcony, podium or similar horizontal surface part of a building must— + Be protected in accordance with Section 2.9 of AS 4654.2; and + Not be located beneath or run through a planter box, water feature or similar part of the building Comment: Details of compliance with the above are to be prepared by a suitably qualified consultant and submitted with documentation for the CC.

F1D5	External Waterproofing Membranes: External waterproofing membranes are required to comply with AS 4654.1 & 2. Comment: Details of compliance with the above are to be prepared by a suitably qualified consultant and submitted with documentation for the CC.
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 required 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.
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: Details to be provided with the application for the Construction Certificate.
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 together with the F3P1 Performance Solution Report, demonstrating compliance, prior to the issued of the relevant CC(s).
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.

F4D3

Calculation Of Number Of Occupants And Facilities: 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. The parameters for the calculation are set out in sub-clauses (a) to (d).

Comment: Noted – refer to D2D18, confirmation of population numbers are required.

F4D4

Sanitary 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 Areas								
Occupancy Class as per F4D4 (Staff)								
Type		Closet Pans		Urinals		Washbasins		Complies
		Required	Proposed	Required	Proposed	Required	Proposed	Yes/No
Warehouse 1	Male (19)	1	2	1	2	1	2	Yes
	Female (19)	2	2	-	-	1	2	Yes
Office 1	Male (22)	2	2	1	1	1	2	Yes
	Female (22)	2	3	-	-	1	2	Yes
Warehouse 2	Male (40)	2	2	2	2	2	2	Yes
	Female (40)	3	2	-	-	2	2	Yes
Office 2	Male (26)	2	3	2	0	1	3	No
	Female (26)	2	3	-	-	1	3	Yes
Warehouse 3A	Male (52)	3	2	3	2	3	2	No
	Female (52)	4	2	-	-	3	2	No
Office 3A	Males (38)	2	3	2	2	2	3	Yes
	Female (38)	3	4	-	-	2	3	Yes
Dock Office 3A	Male (5)	1	1	0	0	1	1	Yes
	Female (5)	1	1	-	-	1	1	Yes
Warehouse 3B	Male (59)	3	2	3	2	3	2	No
	Female (59)	4	2	-	-	3	2	No
Office 3B	Male (40)	2	3	2	2	2	3	Yes
	Female	3	4	-	-	2	3	Yes

	(40)							
Dock Office 3B	Male (5)	1	1	0	0	1	1	Yes
	Female (5)	1	1	-	-	1	1	Yes
Building (B4)	Male (78)	4	2	4	2	4	2	No
	Female (78)	6	2	-	-	4	2	No
Office (B4)	Male (63)	4	3	3	2	3	3	No
	Female (63)	5	4	-	-	3	3	No
Dock Office (B4)	Male (5)	1	1	0	0	1	1	Yes
	Female (5)	1	1	-	-	1	1	Yes

Note 1: Where sanitary compartments are noted as Unisex on the floor plans, they may be allocated as one facility for each gender 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 ESR/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: Accessible unisex sanitary compartments are required at each bank of toilets where one or more toilets is provided. In addition to an accessible unisex sanitary compartment at that bank of toilets, an ambulant sanitary facility is required to be provided for use by male and female persons per AS 1428.1-2009. Where multiple banks of toilets are provided on a storey, at least 50% of the banks must comply with the above. Additionally, at least 1 accessible unisex sanitary compartment must be provided on every storey containing sanitary compartments.

An accessible sanitary facility has not been provided to the Ground Floor Warehouse sanitary facilities and the dock offices to all buildings where sanitary facilities have been provided. A Performance Solution by the Access Consultant is required to address this non-compliance.

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: Details to be provided at CC application stage confirming compliance with the above requirements.

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 state 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.
F6D11	Carparks: Every storey of a carpark (except an open-deck carpark), must have – a system of mechanical ventilation complying with AS1668.2; or a system of natural ventilation complying with Section 4 of AS1668.4. Comment: The basement carpark is to be provided with a mechanical ventilation system complying with Section 4 of AS1668.4.

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 Warehouses buildings. 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. The basement carpark of Building 3 is to be provided with electrical distribution boards dedicated to electric vehicle charging in accordance with Table J9D4 in each storey of the carpark. The electrical distribution boards must be sized to support the future installation of 7kW (32A) type 2 electric vehicle chargers in 20% of carparking spaces



4.0 Conclusion

This report contains an assessment of the referenced architectural documentation for the proposed warehouse buildings at Augusta Street, Huntingwood 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 A or B 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 B 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	120/120/120	180/180/180	240/240/240
1.5 to less than 3m	90/60/30	120/90/60	180/120/90	240/180/120
3 to less than 9m	90/30/30	120/30/30	180/90/60	240/90/60
9 to less than 18m	90/30/-	120/30/-	180/60/-	240/60/-
18m or more	-/-/-	-/-/-	-/-/-	-/-/-
For non-loadbearing parts:				
less than 1.5m	-/90/90	-/120/120	-/180/180	-/240/240
1.5 to less than 3m	-/60/30	-/90/60	-/180/90	-/180/120
3m or more	-/-/-	-/-/-	-/-/-	-/-/-
EXTERNAL COLUMN - Not incorporated in an external wall				
For loadbearing columns:				
Less than 18m	90/-/-	120/-/-	180/-/-	240/-/-
18m or more	-/-/-	-/-/-	-/-/-	-/-/-
Non-loadbearing columns:				
	-/-/-	-/-/-	-/-/-	-/-/-
COMMON WALLS and FIRE WALLS	90/90/90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS				
Fire-resisting lift and stair shafts				
Loadbearing	90/90/90	120/120/120	180/120/120	240/120/120s
Non-loadbearing	-/90/90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like:				
Loadbearing	60/60/60	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy units:				
Loadbearing	60/60/60	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
OTHER LOADBEARING INTERNAL WALLS AND COLUMNS	60/-/-	120/-/-	180/-/-	240/-/-
ROOFS	60/-/-	120/-/-	180/-/-	240/-/-

Notes:

1. Any wall required to have an FRL with respect to integrity and insulation must extend to the underside of the floor next above if that floor has an FRL of at least 30/30/30; or the underside of a ceiling with a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or the underside of a non-combustible roof covering; or 400mm above the roof covering if it is combustible.
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. 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.
4. A loadbearing internal wall and a loadbearing fire wall must be constructed from concrete, masonry, or a combination of the two.
5. In the storey immediately below the roof, internal columns and internal walls other than fire walls and shaft walls need not comply with S5C21.
6. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification 6.
7. Non-loadbearing parts of an external wall that are more than 18m from a fire source feature need not be fire rated.

Table 5: 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.

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
Access Panels, Doors & Hoppers	BCA 2022 Clause C4D14 AS 1530.4 – 2014 Manufacturer's Specifications	✓
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	✓
Emergency Evacuation Plan	AS 3745 - 2010	✓
Exit Signs	BCA 2022 Clauses E4D5, NSW E4D6 & E4D8 AS 2293.1 – 2018	✓
Fire Control Centres	BCA 2022 Spec 19	✓
Fire Blankets (TBC)	BCA 2022 Clause E1D14 AS 3504 – 1995 & AS2444 – 2001	✓
Fire Dampers (TBC)	BCA 2022 Clause C4D15 AS 1668.1 – 2015 & AS 1682.1 & 2 – 2015 Manufacturer's Specification	✓
Fire Doors (TBC)	BCA 2022 Clauses C3D13, C3D14, C4D3, C4D5, C4D6, C4D7, C4D8 & C4D12 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 (TBC)	BCA 2022 Clause C2D9	✓

+ Statutory Fire Safety Measure	+ Design/Installation Standard	+ Proposed
	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	✓
Stretcher Lift (Office 5B1 & 5B2)	BCA 2022 Clause E3D3	✓
Wall-Wetting Sprinklers (TBC)	BCA 2022 Clause C4D5 AS 2118.2 – 2010	✓
Warning & Operational Signs	BCA 2022 Clause D3D28, D4D7, E4D4 AS 1905.1 – 2015 EP&A (DCFS) Regulations 2021 Section 108	✓
Fire Engineered Performance Solutions: TBC	TBC	✓