



A Bureau Veritas Group Company

Regulatory Compliance Report

884 Mamre Road, Kemps Creek NSW

Prepared for: **Altis Proport partners**
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Table of Contents

1.	Executive Summary.....	3
2.	Introduction.....	8
3.	Compliance with the Building Code of Australia.....	8
4.	Documentation of Performance Solutions.....	8
5.	Preliminaries.....	9
6.	Structure.....	10
7.	Fire Protection.....	10
8.	Access and Egress.....	12
9.	Services and Equipment.....	14
10.	Health and Amenity.....	16
11.	Energy Efficiency.....	18
12.	Access for People with Disabilities.....	18
13.	Appendix A - Reference Documentation.....	22
14.	Appendix B - Draft Fire Safety Schedule.....	23
15.	Appendix C - Fire Resistance Levels.....	24

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1. Executive Summary

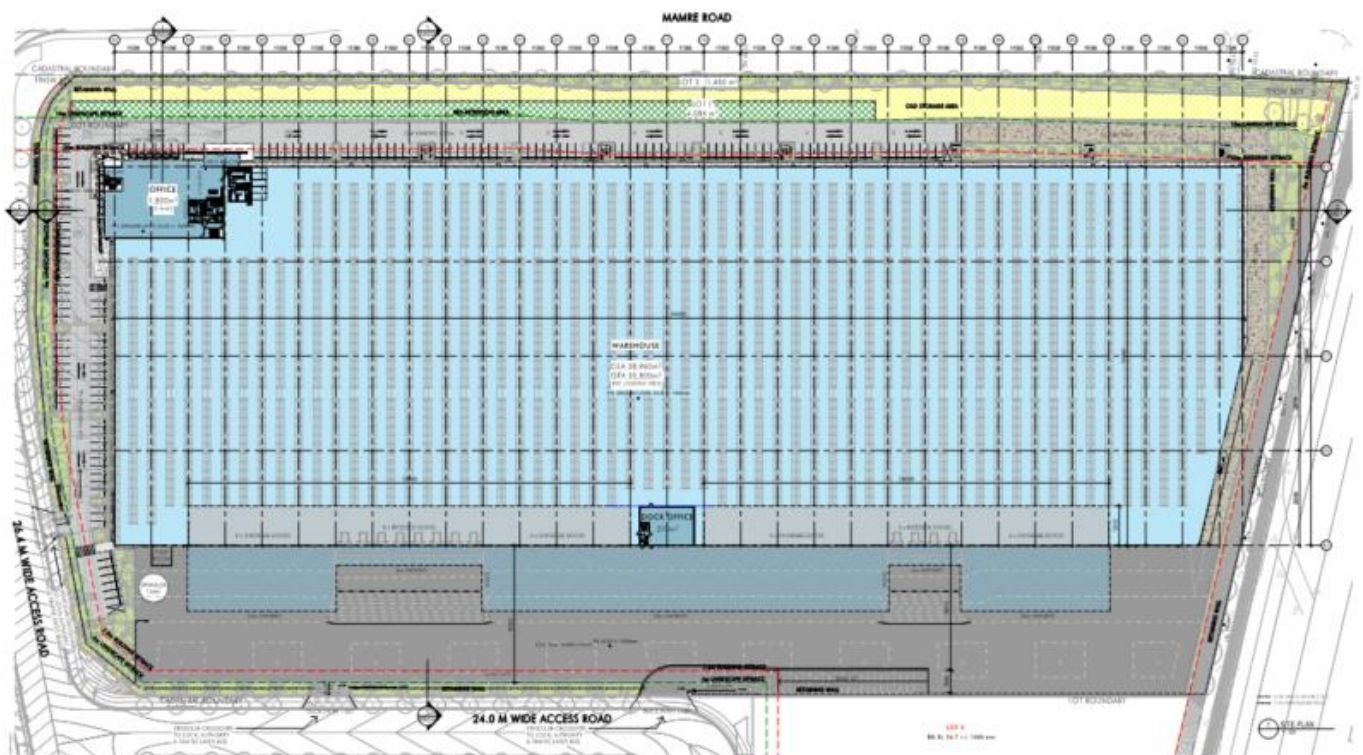
Development Overview

The proposed development is for a new large isolated warehouse located at 884 Mamre Road, Kemps Creek. The development comprises of a single tenancy warehouse with ancillary offices and parking. The building comprises of approximately 35,800m² of Gross Floor Area.

Compliance Summary

As Registered Certifiers we have reviewed the architectural design documents prepared by Nettleton Tribe (refer appendix A) for compliance with the current building assessment provisions, i.e. the Building Code of Australia 2019 Amendment 1 (BCA).

This report has been prepared to assess the project against the Building Code of Australia to enable issuance of construction approvals. Further assessment of the design will be undertaken as the design develops to ensure compliance is achieved prior to approval being issued



Further Assessment

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

No.	Further Information / Review Required	Report Reference
1.	Please provide proposed materials fire test data for review (floor, wall, ceiling, awning)	Architect
2.	Please confirm if the 3 storey office portion will be separated from the warehouse by a fire wall, as this changes the type of construction and required FRLS for the warehouse	Architect
3.	Please provide stormwater drainage drawings and design certificate.	Services Designer
4.	Please confirm minimum heights of ceilings.	Architect
5.	Please provide section J report NOTE: BCA 2019 amendment 1 will apply for the purpose of the JV3.	Services Consultants
6.	Please confirm the anticipated populations for the office and warehouse areas of the building.	Architect
7.	Please confirm the locations of fire hydrants & fire hose reels throughout the building.	Services Consultants
8.	Please confirm the booster location	Architect / Services Consultants
9.	Please confirm the Fire control Centre location	Architect / Services Consultants
10.	Please confirm the location of the main switch board that will support the smoke exhaust facilities that are provided to the development.	Architect / Services Consultants
11.	Please confirm the voltage of storage capacity of the battery system	Services Consultants
12.	Please indicate on plans the location of all emergency exit door locations from the Battery Charge Room	Architect
13.	Confirmation is to be sought if portions of the Warehouse are deemed inappropriate for disabled access to be provided as part of the design development phase of the project, and therefore a Clause D3.4 exemption maybe sought.	Architect

Documentation to enable assessment and demonstrate compliance will be required to address the above items prior to approval.

The application for Construction Certificate shall be assessed under the relevant provisions of the Environmental Planning & Assessment Act 1979 (As Amended) and the Environmental Planning & Assessment Regulation 2000.

Deviations from the Deemed-to-Satisfy Provisions

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

No.	Description	DTS Clause	Performance Requirements
Fire Safety Items			
1	Perimeter Emergency Vehicular Access Perimeter emergency vehicular access 6m wide located within 18m of the entire building perimeter is required. Continues Perimeter emergency vehicular access is not provided in the	C2.3 and C2.4	CP9

No.	Description	DTS Clause	Performance Requirements
	<p>North Eastern and South Western Corners of the Warehouse, and a minimum 6m clear path is not provided to the whole of the Northern Perimeter.</p> <p>We note that the Perimeter Vehicular access to the site will be required to be addressed against Performance Requirement CP9 of the BCA.</p>		
2	<p>Travel distance to an exit</p> <p>The following egress items to an exit will be required to be addressed as part of the Fire Engineered Solution in accordance with Performance Requirement DP4 and EP2.2 of the BCA: -</p> <p>Warehouse portions:</p> <p style="padding-left: 40px;">Warehouse – 67m to an exit in lieu of 40m</p> <p>Main Office portion</p> <p style="padding-left: 40px;">- Ground floor - 27m to a point of choice in lieu of 20m</p> <p>We note that once the fit-out/racking has been finalised the travel distances will need to be recalculated. Our assessment does not account for fit-out.</p>	D1.4	DP4 and EP2.2
3	<p>Travel Distance Between Alternative Exits</p> <p>The following egress items between alternative exits will be required to be addressed as part of the Fire Engineered Solution in accordance with Performance Requirement DP4 and EP2.2 of the BCA: -</p> <p>Warehouse – 131m between alternative exits</p>	D1.5	DP4 and EP2.2
4	<p>Hydrant System</p> <p>Hydrants located below an awning to be considered external are to be addressed via a performance solution</p>	E1.3	EP1.3
5	<p>Fire Hose Reel</p> <p>If extended Fire Hose Reel lengths are proposed to be utilised as part of the development, we note that this will be required to be included within the Fire Engineered Solution in accordance with Performance Requirement EP1.1 of the BCA.</p>	E1.4	EP1.1
6	<p>Smoke Hazard Management</p> <p>It is anticipated that smoke hazard management will be rationalised in a performance solution</p>	E2.2	EP2.2
7	<p>Exit Signs</p> <p>Directional exit signage proposed to be mounted higher than 2.7m from the FFL to be included within the Fire Engineered solution for the development.</p>	E4.5	EP4.2
Accessibility Items			

No.	Description	DTS Clause	Performance Requirements
8	The stairway within the office portion leading to Level 1 is required to be detailed to AS1428.1-2009 (handrails, tactile indicators, nosings)	D3.1	DP1
9	Confirmation is to be sought if portions of the Warehouse are deemed inappropriate for disabled access to be provided as part of the design development phase of the project, and therefore a Clause D3.4 exemption maybe sought.	D3.4	DP1

The feasibility and any additional requirements that will apply as a result of the performance solution will need to be confirmed by the professional preparing the performance solution. Any performance solution will need to be prepared by a suitably qualified/accredited professional.

Fire Safety Services

The following key fire safety services are required to meet the minimum DTS requirements.

1.	Automatic Fire Detection and Alarm System
2.	Automatic Fire Suppression System
3.	Building Occupant Warning System activated by the Sprinkler System
4.	Fire hydrant system
5.	Fire hose reels to the Warehouse portions of the building
6.	Smoke Hazard Management System
7.	Perimeter Vehicular Access

Refer to part 7 of this report for further details regarding the required services.

Any fire engineered solution relating to CP9, DP4, EP2.2 items will need to be approved after consultation with the NSW Fire Brigade as part of the Construction Certificate process.

2. Introduction

The proposed development comprises of a new warehouse building with ancillary office and carparking portions.

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

The report is intended as an overview of the relevant provisions of the Building Code of Australia for assistance only. Detailed drawings and associated review will still be required as the final design is developed.

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

The version of the BCA applicable to the development, is version that in place at the time of the application to the Registered Certifier for the Construction Certificate. For the purposes of this Report, BCA 2019 Amendment 1 has been utilised as the version of the BCA applicable at the time of preparation this Report.

3. Compliance with the Building Code of Australia

The Building Code of Australia is a performance based document, whereby compliance is achieved by complying with the Governing Requirements and the Performance Requirements.

Performance Requirements are satisfied by one of the following:

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

4. Documentation of Performance Solutions

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

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

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

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

- a) Prepare a performance-based design brief in consultation with relevant stakeholders
- b) Carry out analysis, using one or more of the assessment methods nominated above, as proposed by the performance-based design brief.
- c) Evaluate results from (b) against the acceptance criteria in the performance-based design brief
- d) Prepare a final report that includes:
 - i. All Performance Requirements and/or Deemed-to-Satisfy Provisions identified as applicable

- ii. Identification of all assessment methods used
- iii. Details of required steps above
- iv. Confirmation that the Performance Requirement has been met; and
- v. Details of conditions or limitations, if an exist, regarding the Performance Solution.

This process will come into effect on 1 July 2021.

5. Preliminaries

5.1. Building Assessment Data

Summary of Construction Determination:

Part of Project	Warehouse / Office
Classification	Class 7b & 5
Number of Storeys	1
Rise In Storeys	3
Type of Construction	B- Office portion , C- warehouse portion
Effective Height (m)	<12m

Summary of the floor areas and relevant populations where applicable: -

Part of Project	BCA Classification	Approx. Gross Lettable Area (m ²)	Assumed Population
Warehouse	Class 7b	35,800m ²	TBC
Office Including Dock Office	Class 5	2,000m ²	200
Total GLA		40,960m ²	TBC

Notes:

- The above populations have been based on floor areas and calculations in accordance with Table D1.13 of the BCA.
- The carpark areas have been considered ancillary to the use for the purposes of population numbers

Occupiable Outdoor Areas

BCA 2019 introduced specific provisions regarding occupiable outdoor areas. These provisions outline requirements with regards to fire ratings, egress provisions and coverage from essential services and are contained in this report.

An occupiable outdoor area is defined in the BCA as follows:

'a space on a roof, balcony or similar part of a building:

- a) *That is open to the sky; and*
- b) *To which access is provided, other than access only for maintenance; and*
- c) *That is not open space or directly connected with open space'*

5.2. Council Development Approval

A Development Approval will be required from the Local Authority for the development. A copy of the Development Approval conditions and approved drawings will be required prior to the issuing of the Construction Certificate for that component of works.

The proposed development must not be inconsistent with the endorsed drawings and all relevant conditions will need to be satisfied and accurately reflect the construction issue drawings.

6. Structure

6.1. Structural Provisions (BCA B1):

New structural works are to comply with the applicable requirements of BCA Part B1, including AS/NZS 1170.0-2002, AS/NZS 1170-1-2002, AS/NZS 1170.2-2011 and AS 1170.4-2007.

Depending on the importance level of the building as determined by AS/NZS 1170.0-2002, the non structural elements of the building, including partitions (and non-structural fire walls), ceilings, services and racking/shelving may be required to comply with the seismic restraint requirements of AS 1170.4-2007. Where this is required, certification will be required confirming that the design of the seismic restraints comply with AS 1170.4-2002. This may be provided by a specialist seismic consultant or by the architect and services design engineers.

It is noted that BCA 2019 introduced a new Verification Method, BV2, which is a pathway available to verify compliance with BCA Performance Requirement BP1.1(a)(iii).

Glazing is to comply with AS1288-2006, and AS2047-2014.

Prior to the issue of the Construction Certificate structural certification is required to be provided by a Professional Engineer registered on the National Engineering Register.

7. Fire Protection

7.1. Fire Compartmentation (BCA C1.1)

The BCA stipulates three levels of fire resistant construction, which is based upon the rise in storeys and classification of the building. Each of these types of construction has maximum floor area and volume limitations as per BCA Table C2.2.

Based upon the rise in storeys and use of the building, it is required to be constructed in accordance with the requirements of Type C Construction, in accordance with Table 5 & 5.9 of Specification C1.1 of the Building Code of Australia 2019 Amendment 1.

The maximum floor area and volume limitations of a fire compartment as nominated in the deemed to satisfy provisions are as follows:

Classification		Type of Construction		
		A	B	C
5, 9b or 9c aged care building	max floor area—	8 000 m ²	5 500 m ²	3 000 m ²
	max volume—	48 000 m ³	33 000 m ³	18 000 m ³
6, 7, 8 or 9a (except for patient care areas)	max floor area—	5 000 m ²	3 500 m ²	2 000 m ²
	max volume—	30 000 m ³	21 000 m ³	12 000 m ³

If the building exceeds the area / volume limitations of the BCA provisions, the building is then considered a large isolated building and the following provisions will apply:

- Automatic sprinkler protection to AS2118.1 and BCA Specification E1.5 throughout the development
- Perimeter emergency vehicular access 6m wide located within 18m of the entire building perimeter in accordance with BCA Clause C2.4,
- Automatic smoke exhaust system in accordance with Specification E2.2b
- Provision of a fire hydrant ring main

Perimeter emergency vehicular access 6m wide located within 18m of the entire building perimeter is required. Continues Perimeter emergency vehicular access is not provided in the South Western Corners of the Warehouse.

We note that the Perimeter Vehicular access to the site will be required to be addressed against Performance Requirement CP9 of the BCA.

7.2. Fire Resistance (BCA C1.1)

The building should be constructed generally in accordance with the relevant provisions of Specification C1.1 of the BCA applicable to Type C Construction, Please refer to Appendix B which outlines the required fire rating to be achieved by the development.

Other passive fire protection issues that will need to be addressed in detailed documentation phase include:

- Electricity Supply;
- Hydrant Pump Rooms;
- Sprinkler Pump Rooms;

The above areas are to be separated from the remainder of the building by construction achieving a minimum fire resistance level of 120 minutes.

Please note that with regards to fire separation, the provisions and required FRL's that apply to the building also apply to an occupiable outdoor space associated with the building.

7.3. Fire Hazard Properties (BCA C1.10 and BCA C1.9)

The fire hazard properties of fixed surface linings and mechanical ductwork will also need to be addressed within the detailed documentation phase pursuant to Specification C1.10 of the Building Code of Australia. The following requirements apply:

Sprinkler Protected Areas

- a) Floor Coverings – Critical radiant Flux not less than 1.2 kW/m²
- b) Wall and Ceiling Linings – Material Group No. 1, 2, 3
- c) Other Materials – Spread of Flame Index not exceeding 5 and Smoke Developed Index not exceeding 9

Rigid and flexible air handling ductwork must comply with AS4254 Parts 1 & 2 2012.

7.4. Separation of equipment (C2.12)

Equipment listed below must be separated from the remainder of the building providing a FRL as required by Spec C1.1 but not less than 120/120/120 with a self-closing fire door with an FRL or not less than -/120/30. When separating a lift shaft and life motor room, an FRL of not less than 12/-/- is required.

- a) Emergency generators used to sustain emergency equipment operating in the emergency mode; or
- b) Central smoke control plant; or
- c) A battery system installed in that building that has total voltage of 12 volts or more and a storage capacity of 200kWh or more.

8. Access and Egress

8.1. Provision for Escape (BCA D1)

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

- External perimeter doorways

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

- Door Hardware
- Exit Door Operation
- Stair Construction
- Handrail and Balustrade construction
- Details of the egress provisions to the Road.
- Door swings

8.2. Exit Travel Distances (BCA D1.4)

The locations of the proposed exits would appear to indicate that the deemed to satisfy requirements in terms of travel distances, distances between alternative exits and egress widths would be satisfied.

The travel distances to exits should not exceed:

Class 5 to 9

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

The above indicates that the deemed to satisfy requirements in terms of travel distances would be satisfied, with the exception of the following areas:

Warehouse portions:

- Warehouse – 67m to an exit in lieu of 40m

Main Office portion

- Ground floor - 27m to a point of choice in lieu of 20m
- Level 1 - 27m to a point of choice in lieu of 20m

Distances between alternative exits do not comply in the following areas:

- Warehouse – 131m between alternative exits

The extended travel distances and distance between the exit will need to be addressed to comply with the requirements of the deemed to satisfy provisions noted above, or be assessed as performance solutions by the Fire Safety Engineer using BCA Performance Requirements DP4 & EP2.2

8.3. Dimensions of Exits (BCA D1.6)

Minimum dimensions of 1000mm and 2000mm height to be provided within exits, with the paths of travel should provide a minimum width of 1000mm (note that all maintenance access, cat walks, etc may comply with AS1657-2018 in which case a 600mm clear width is required).

Doorways are permitted to contain a clear opening width of the required width of the exit minus 250mm, with a height of 1980mm as part of egress requirements. Access for persons with disabilities however requires a clear doorway opening width of 850mm (i.e. minimum 920 mm doors).

8.4. Balustrades and Handrails (BCA D2.16 / BCA D2.17 / D2.24)

Generally

Balustrading to a minimum height of 1000mm with a maximum opening of 124mm in any direction should be provided adjacent to balconies, landings, corridors etc where located adjacent to a change in level exceeding 1000mm, or where it is possible to fall through an openable window located more than 4m above the surface beneath.

Where it is possible to fall more than 4m to the surface below, the balustrade shall not contain any horizontal or near horizontal members that facilitate climbing between 150 – 760mm above the floor.

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

The public stairs and ramps located along an accessible path of travel should be designed in accordance with the requirements of AS1428.1 for persons with disabilities. This requires a handrail on each side of the stair and ramp and for the handrail to extend approximately 550mm – 600mm past the last tread / end of ramp.

In addition to the above, handrails are required to both sides of all stairs with a width of 2m or more.

Class 7b/8 Buildings

Balustrades in Class 7b or 8 parts of buildings are permitted to contain a 3 rail system, with a bottom rail situated at not more than 150mm above the nosings. The distance between the rails shall not exceed 460mm.

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

Note: in a required exit serving an area required to be accessible, handrails must be designed and constructed to comply with Clause 12 of AS1428.1-2009

8.5. Slip Resistance

The adoption of BCA 2014 introduced a requirement for slip resistance of stairway treads and ramp surfaces. The requirements are as follows:

Table D2.14 SLIP-RESISTANCE CLASSIFICATION

Application	Surface conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12

Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

9. Services and Equipment

The following section of this report describes the essential fire safety measures and the minimum performance requirements of those measures. A draft essential fire safety schedule can be found in Appendix B.

9.1. Fire Hydrants (BCA E1.3)

A system of Fire Hydrants is required to be provided in accordance with BCA Clause E1.3 and AS2419.1-2005.

The building is required to be provided with a booster assembly as part of the fire hydrant requirements. The booster is required to be located attached to the building at the main entry. If remote from the building, the booster is to be located at the main vehicle entry or with sight of the main entry of the building within 20m of a hardstand area.

Hydrants located below an awning to be considered external are to be address in a performance solution

A fire ring main is required.

Where external fire hydrants are located along the perimeter with 10m of the building they must be provided with a radiant heat shield complying with Clause 3.2.2.2(e) of AS2419.1-2005:

In a position not less than 10 m from the building it is protecting unless safeguarded by construction—

- i. having a FRL of not less than 90/90/90;*
- ii. extending 2 m each side of the fire hydrant outlet; and*
- iii. extending not less than 3 m above the ground adjacent to the fire hydrant or the height of the building, whichever is the lesser.*

9.2. Fire Hose Reels

A Fire Hose Reel System is required to BCA Clause E1.4 and AS2441-2005.

The system is required to provide coverage to the Warehouse zones only.

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

Fire hose reel cupboards must not contain any other services such as water meters, etc., and doors to fire hose reel cupboards are not to impede the path of egress unless a performance solution is developed under BCA Performance Requirement EP1.1

The hose reels currently indicated are not satisfactory.

If extended fire hose reel lengths are proposed to be utilised as part of the development, we note that this will be required to be included within the Fire Engineered Solution in accordance with Performance Requirement EP1.1 of the BCA.

9.3. Fire Extinguishers (BCA E1.6)

The provision of portable fire extinguishers is required to BCA Clause E1.6 and AS2444 - 2001 to provide coverage to all areas.

Table E.6 details when portable fire extinguishers are required:

Occupancy Class	Risk Class (as defined in AS 2444)
General provisions – Class 5 and 7b buildings	a) To cover Class AE or E fire risks associated with emergency services switchboards. (Note 1) b) To cover Class F fire risks involving cooking oils and fats in kitchens. c) To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (not excluding that held in fuel tanks of vehicles). d) To cover Class A fire risks in normally occupied fire compartments less than 500m ² not provided with fire hose reels (excluding open deck carparks). e) To cover Class A fire risks in classrooms and associated schools not provided with fire hose reels. f) To cover Class A fire risks associated with Class 2 or 3 building or class 4 part of building.

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

9.4. Automatic Sprinkler Protection (BCA E1.5)

Automatic sprinkler protection is required to Specification E1.5 and AS2118.1-2017 to the following areas:

- Throughout the entire building if it is classified as large isolated under BCA Clause C2.3;

The sprinkler system shall be connected to and activate an occupant warning system complying with BCA Specification E2.2a.

Details of the proposed sprinkler system design will need to be reviewed as the design develops.

An occupant warning system should be provided in accordance with BCA Specification E1.5.

9.5. Smoke Hazard Management (BCA E2.2)

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

- Automatic Smoke Exhaust System activated by Automatic Smoke Detection & Alarm System in accordance with the requirements of BCA Spec E2.2a and AS1670.1-2018

A fire indicator panel is required as part of the detection system. This panel is to be located within 4m of the main entry. Any variation to the prescriptive provisions will require the consent of the fire brigade and should form part of the fire safety engineering report to verify the performance requirements of the BCA.

It is anticipated that smoke hazard management will be rationalised in a performance solution

9.6. Exit Signs and Emergency Lighting (BCA E4.2 and BCA E4.5)

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

Where exit signs are proposed to be above 2.7m to avoid potential damage by forklifts in the warehousing areas, this will need to be documented as a performance solution by an accredited fire safety engineer. This would need to be assessed to BCA Performance Requirement EP4.2.

Details are required to be provided for review.

9.7. Fire Precautions During Construction (BCA E1.9)

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

- Required fire hydrants and fire hose reels on every storey covered by the roof/floor structure (except the 2 uppermost storeys); and
- Booster connections installed.

Due to the height of the building this will need to be considered and implemented during construction.

10. Health and Amenity

10.1. Sanitary Facilities (BCA F2.2 and BCA F2.3)

Offices

Separate sanitary facilities are required to be provided for male & female employees at a rate at the following.

The following table summarises the sanitary facilities provided:

Main office			
	WC	Urinals	Basins
Male	2	3	2
Female	5	-	3
Accessible	1	-	1

The Above Facilities are adequate for 150 Staff (60 males & 90 females)

Warehouse			
	WC	Urinals	Basins
Male	5	4	2
Female	5	-	3
The Above Facilities are adequate for 135 Staff (60 males & 75 females)			

Dock office			
	WC	Urinals	Basins
	3	3	3
The Above Facilities are adequate for need to be nominated male and female to calculate accordingly			

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

Please note that the unisex sanitary facilities have not been included in the above calculations as the design does not meet Deem-to-Satisfy provisions of F2.3 of the BCA.

Note: The Unisex facilities provided for people with disabilities may be counted once for each sex. These facilities are to be provided in accordance with AS1428.1-2009.

Bathroom Construction

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

10.2. Floor Wastes

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

10.3. Light and Ventilation (BCA Part F4)

Mechanical ventilation to the office portion is required in accordance with AS1668.2-2012

Artificial lighting complying with AS/NZS1680.0-2009 is to be incorporated with the final detailed design to be developed to confirm this.

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

10.4. Waterproofing (BCA FP1.4)

Wet Areas

Internal wet areas throughout the development (e.g. bathrooms, laundries) shall be waterproofed in accordance with AS3740 - 2010 requirements.

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

10.5. Stormwater Drainage

Stormwater drainage systems serving the building are to comply with AS3500.3 - 2018.

11. Energy Efficiency

The proposed development shall comply with Part J of the BCA. To achieve compliance, there are two options available:

- 1) The building can comply with the deemed-to-satisfy provisions of the BCA, relating to the following areas:
 - Building Fabric
 - Glazing
 - Building Sealing
 - Air Conditioning & Ventilation Systems
 - Artificial Lighting & Power
 - Hot Water Supply

- 2) The building can be verified against a reference building as per Verification Method JV3. This requires that the proposed building and its services be shown to have an annual energy consumption of equal or less than the reference building which has been modelled as per the requirements of Part J of the BCA.

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

Access for maintenance is to be provided to the building in accordance with the requirements of BCA Part J8.

The proposed site will be located in a climate zone 6.

Due to special nature of the building some energy provisions may not be appropriate.

12. Access for People with Disabilities

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

- The Building Code of Australia 2019 Amendment 1;
- Disability (Access to Premises – Buildings) Standards 2010;
- AS1428.1-2009 General Requirements for Access – New Building Work;
- AS1428.4.1 -2009 Tactile Ground Surface Indicators
- AS2890.6-2009 Car Parking for People with Disabilities

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

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

12.1. General Building Access Requirements (BCA D3.1)

Access for people with disabilities shall be provided to and within the building in accordance with the requirements of Clause D3.2, D3.3 and D3.4 of the BCA 2019 Amdt 1 and AS 1428.1. Parts of the building required to be accessible shall comply with the requirements of:-

- AS1428.1-2009 General Requirements for Access – New Building Work;
- AS1428.4.1 -2009 Tactile Ground Surface Indicators
- AS2890.6-2009 Car Parking for People with Disabilities

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

Office (Class 5 buildings)

To and within all areas normally used by the occupants

Warehouse and production/Manufacturing facilities

To and within all areas normally used by the occupants, but as the uses of these areas could be deemed inappropriate, confirmation is required as the appropriateness of the areas in question by the owners or tenant.

12.2. Provision for Access to Buildings

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

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

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

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

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

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

12.3. Accessibility within Building (BCA D3.3)

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

Within the building the following are required;

- Door circulation space as per AS1428.1 Clause 13.3 and as attached in Appendix B;
- Doorways must have a clear opening of 850mm;
- Passing spaces (1.8m wide passages) must be provided at maximum of 20m intervals
- Within 2.0m of end access ways/corridors, turning areas spaces are required to be provided.
- Carpet pile height of not more than 11mm to an adjacent surface and backing <4mm

- Any glazing capable of being mistaken for a doorway or opening must be clearly marked (or contain chair rail, hand rail or transom as per AS 1288 requirements)

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

12.4. Car Parking (BCA D3.5)

Accessible car parking spaces are required to comply with AS 2890.6-2009 at the rate of 1:100

The development is proposed to contain 173 car parking spaces which requires a minimum of 2 accessible spaces.

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

12.5. Tactile Indicators (BCA D3.8)

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

12.6. Accessible Sanitary Facilities (BCA F2.4)

Unisex Accessible Sanitary Facilities

An accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only and provided in accordance with AS 1428.1-2009 and must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary products and as per following.

Building Type	Minimum accessible unisex sanitary compartments to be provided
Office, industrial	a) 1 on every storey containing sanitary compartments; and b) Where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.

Ambulant Facilities

At each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1-2009 must be provided for use by males and females.

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

12.7. Signage (BCA D3.6)

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

- Sanitary Facility Identification Signs (note that they are to comply with BCA Specification D3.6 and include the use of Braille, Tactile, etc and be placed on the wall on the latch side of the facility);
- Directional / Way Finding signs to the Lifts, Sanitary Facilities, etc;
- Hearing Augmentation System;

- Identify each door required by BCA Clause E4.5 to be provided with an exit sign, stating 'EXIT' and 'Level' number
- Braille and tactile signs must be illuminated to ensure *luminance contrast* requirements are met at all times during which the sign is required to be read.

12.8. Hearing Augmentation (BCA D3.7)

A hearing augmentation system shall be installed throughout the building in accordance with the requirements of Clause D3.7 of the BCA, where ever in a 9b building, auditorium conference room, meeting room etc. contain a PA system not used for emergency purposed or any ticket office or teller's booth or reception where the public is screened from the service provider.

13. Appendix A - Reference Documentation

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

Drawing No.	Title	Date	Revision
11213- DA011	LOT 2 -Site Plan / Ground Floor Plan /Fencing Plan	16.07.21	P10
11894-DA004	Stage 2 Estate Master Plan / Benching Plan	16.07.21	P9

14. Appendix B - Draft Fire Safety Schedule

No.	Measure	Particulars of Measure <i>(including where the requirement for the measure is set out or described i.e. in building plans or in a performance solution report)</i>
STATUTORY FIRE SAFETY MEASURES		
1.	Automatic Fail Safe Devices	BCA 2019 Amdt 1 Clause D2.19 & D2.21
2.	Automatic Fire Detection and Alarm System	BCA 2019 Amdt 1 Spec. E2.2a & AS 1670.1 – 2018, AS/NZS 1668.1 - 2015
3.	Automatic Fire Suppression System (sprinklers)	BCA 2019 Amdt 1 Spec. E1.5 & AS 2118.1 – 2017,
4.	Emergency Lighting	BCA 2019 Amdt 1 Clause E4.2, E4.4 & AS/NZS 2293.1 – 2018
5.	Exit Signs	BCA 2019 Amdt 1 Clauses E4.5, NSW E4.6 & E4.8 and AS/NZS 2293.1 – 2018
6.	Emergency Evacuation Plan	AS 3745 – 2002
7.	Fire Control Centres	BCA 2019 Amdt 1 Spec. E1.8
8.	Fire Hose Reel Systems	BCA 2019 Amdt 1 Clause E1.4 & AS 2441 – 2005 Amdt 1
9.	Fire Hydrant Systems	BCA 2019 Amdt 1 Clause E1.3 & AS 2419.1 – 2005 Amdt 1
10.	Perimeter Vehicular Access for emergency vehicles	BCA 2019 Amdt 1 Clause C2.4
11.	Portable Fire Extinguishers	BCA 2019 Amdt 1 Clause E1.6 & AS 2444 – 2001
12.	Smoke Hazard Management System (automatic smoke exhaust)	BCA 2019 Amdt 1 Part E2 & AS/NZS 1668.1 – 2015
13.	Warning and Operational Signs	EP&A Reg 2000 Clause 183, BCA 2019 Amdt 1 Clause C3.6, D2.23, E3.3 & H101.8
OTHER FIRE SAFETY MEASURES		
14.	Building Occupant Warning System	BCA 2019 Amdt 1 Spec. E1.5, BCA Spec. E2.2a & AS 1670.1 – 2018
15.	Paths of Travel	EP&A Reg 2000 Clause 183, 184, 184 & 186
16.	Fire Engineering Report	Fire Engineering Report - TBC

15. Appendix C - Fire Resistance Levels

Office

Table 4 TYPE B CONSTRUCTION: FRL OF BUILDING ELEMENTS	Class of building—FRL: (in minutes)			
	<u>Structural adequacy/Integrity/Insulation</u>			
	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 <u>loadbearing</u> parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 30	120/ 90/ 60	180/120/ 90	240/180/120
3 to less than 9 m	90/ 30/ 30	120/ 30/ 30	180/ 90/ 60	240/ 90/ 60
9 to less than 18 m	90/ 30/–	120/ 30/–	180/ 60/–	240/ 60/–
18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
For non- <u>loadbearing</u> parts—				
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180	–/240/240
1.5 to less than 3 m	–/ 60/ 30	–/ 90/ 60	–/120/ 90	–/180/120
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an <u>external wall</u> , where the distance from any <u>fire-source feature</u> to which it is exposed is—				
less than 3 m	90/–/–	120/–/–	180/–/–	240/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90 / 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
<u>Fire-resisting</u> lift and stair <u>shafts</u> —				
<u>Loadbearing</u>	90/ 90/ 90	120/120/120	180/120/120	240/120/120
<u>Fire-resisting</u> stair <u>shafts</u>				
Non- <u>loadbearing</u>	–/ 90/ 90	–/120/120	–/120/120	–/120/120
Bounding <u>public corridors</u> , public lobbies and the like—				
<u>Loadbearing</u>	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non- <u>loadbearing</u>	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding <u>sole-occupancy units</u> —				
<u>Loadbearing</u>	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non- <u>loadbearing</u>	–/ 60/ 60	–/–/–	–/–/–	–/–/–
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—				
	60/–/–	120/–/–	180/–/–	240/–/–
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Warehouse

Table 5 TYPE C CONSTRUCTION: FRL OF BUILDING ELEMENTS	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—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	—/—/—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	—/—/—	—/—/—	—/—/—	—/—/—
EXTERNAL COLUMN not incorporated in an <i>external wall</i> , where the distance from any <i>fire-source feature</i> to which it is exposed is—				
Less than 1.5 m	90/—/—	90/—/—	90/—/—	90/—/—
1.5 to less than 3 m	—/—/—	60/—/—	60/—/—	60/—/—
3 m or more	—/—/—	—/—/—	—/—/—	—/—/—
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS-				
Bounding <i>public corridors</i> , public lobbies and the like—	60 / 60/ 60	—/—/—	—/—/—	—/—/—
Between or bounding <i>sole-occupancy units</i> —	60/ 60/ 60	—/—/—	—/—/—	—/—/—
Bounding a stair if <i>required</i> to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	—/—/—	—/—/—	—/—/—	—/—/—

Table 5.2
REQUIREMENTS FOR CARPARKS
FRL (not less than) Structural adequacy/Integrity/ Insulation
ESA/M (not greater than)
Wall

(a)	<i>external wall</i>	
	(i)	less than 1.5 m from a <i>fire-source feature</i> to which it is exposed:
		<i>Loadbearing</i> 60/60/60
		<i>Non-loadbearing</i> -/60/60
	(ii)	1.5 m or more from a <i>fire-source feature</i> to which it is exposed -/-/-
(b)	<i>internal wall</i>	-/-/-
(c)	<i>fire wall</i>	
	(i)	from the direction used as a <i>carpark</i> 60/60/60
	(ii)	from the direction not used as a <i>carpark</i> 90/90/90

Column

(a)	steel column less than 1.5 m from a <i>fire-source feature</i>	60/-/- or 26 m ² /tonne
(b)	any other column less than 1.5 m from a <i>fire-source feature</i>	60/-/-
(c)	any other column not covered by (a) or (b)	-/-/-

Beam

(a)	less than 1.5 m from a <i>fire-source feature</i>	
	(i)	steel floor beam in continuous contact with a concrete floor slab 60/-/- or 30 m ² /tonne
	(ii)	any other beam 60/-/-
(b)	1.5 m or more from a <i>fire-source feature</i>	-/-/-

Roof, floor slab and vehicle ramp

-/-/-

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