Building Code of Australia 2019 Amendment 1

BCA ASSESSMENT REPORT

Warehouse Addition
24-27 Lambridge Place,
Penrith NSW 2750

Prepared for: Vaughan Constructions | Issue date: 23 Aug 2021

Contents

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Authorisation

Revision	Comment / Reason for Issue	Issue Date	Prepared by	Reviewed by
1	Development Application Design Review DRAFT	23 Aug 2021		
			David Yan	Seb Howe
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Revision History

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1	Development Application Design Review DRAFT	23 Aug 2021	David Yan

Commercial in Confidence

1 Executive Summary

MBC Group have reviewed architectural design documents prepared by Pace Architects (refer appendix A) for compliance with the National Construction Code - Building Code of Australia Volume One 2019 Amendment 1.

1.1 Performance Solutions - Fire & Life Safety

The assessment of the design documentation has revealed that the following areas are required to be assessed against the relevant Performance Requirements of the BCA in accordance with Clause 25 of the Building and Development Certifiers Regulation 2020. The submission for a Construction Certificate will need to include verification from a Certifier – Fire Safety, where determined permissible under A2.1 of the BCA, for the following aspects: -

DTS Clause	Description of Non-Compliance	Performance Requirement
C3.5	Roller shutter doors separating the buildings are required to achieve an FRL of -/120/120. The radiation values are unlikely to be achieved. The fire shutter is required to be self-closing.	CP2
D1.4	30m to a POC in lieu of 20m and 43m to an exit in lieu of 40m.	DP4

Any Performance Solution relating to category 2 items (CP9, EP1.3, EP1.4, EP1.6, EP2.2, EP3.2) will be subject to consultation and approval by Fire and Rescue NSW as part of the Construction Certificate process.

1.2 Performance Solutions - Accessibility

The assessment of the design documentation has revealed that the following areas are required to be assessed against the relevant Performance Requirements of the BCA in accordance with Clause 25 of the Building and Development Certifiers Regulation 2020. The submission for a Construction Certificate will need to include verification from a Accredited Access Consultant, where determined permissible under A2.1 of the BCA, for the following aspects:

DtS Clause	Description of Non-Compliance	Performance Requirement
D3.2 & D3.3	No accessible entrances have been provided	DP1

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1.3 Design Details Required

The assessment of the design documentation has revealed that the following areas require further details to demonstrate compliance with the prescriptive provisions of the BCA

DTS Clause	Description
C2.7	Existing fire walls within 3m of new building are required to be fire rated.
C2.12	If batteries in Charging Station exceeds 12 volts and 200 kWh, separation by 120-minute fire walls are required.
D3.4	Due to the use of the building, an exemption for disability access under this clause is feasible.
E1.3	A fire hydrant system shall be provided in accordance with Clause E1.3, and AS2419.1-2005. Details of the system shall be certified and prepared by an Accredited Practitioner - Fire Safety.
E1.5	Sprinklers are required in fire compartments that exceed 2000m^2 in floor area or 12000m^3 in volume which contain excessive fire hazards. Refer to Appendix F for further details. A Fire Services Engineer to confirm if in rack sprinkler protection is required.
F2.3	Shortfall of sanitary facilities based on 33 occupants (estimated using D1.13). Proposed sanitary facilities accommodate 20 occupants (staff).
F4.8	Accessible bathrooms open into Battery Recharge Station. Provisions specified by F4.9 can be implemented to achieve compliance.

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.

Assessed By

David Yan
MBC Group

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2 Introduction

This report is based upon a desktop review of architectural details (as listed in Appendix A), presently ready for Development Application submission, against the applicable provisions of the National Construction Code - Building Code of Australia Volume One 2019 Amendment 1.

2.1 Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy (DtS) provisions of the BCA.

2.2 Methodology

The methodology applied in undertaking this assessment has included: -

- A desktop review of architectural plans, as listed in Appendix A
- Detailed assessment of Sections C, D, E, F, G, H and J (as applicable / relevant) of the BCA
- Discussions with the design development team to gain an understanding of the development proposed.

2.3 Limitations

This report does not include or imply any detailed assessment for design, compliance or upgrading for:

- the structural adequacy or design of the building;
- the inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and
- the design basis and/or operating capabilities of any proposed
    - electrical
    - mechanical
    - hydraulic
    - fire protection services.

This report does not include, or imply compliance with:

- the National Construction Code – Plumbing Code of Australia Volume 3
- the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to)
- The deemed to satisfy provisions of Part D3 and F2.4 of BCA 2019 Amendment 1
- The deemed to satisfy provisions of Section J of BCA 2019 Amendment 1
- Demolition Standards not referred to by the BCA;
- Work Healthy and Safety Act 2011;
- An out of cycle change to the Building Code of Australia.
- Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Roads and Transport Authority, Local Council, ARTC, Department of Planning and the like; and
- Conditions of Development Consent issued by the Local Consent Authority.

This report has been prepared by MBC in the capacity as the appointed Certifier for the proposed development. This report is an assessment of the proposed development against the DtS provisions of the applicable BCA.

2.4 Current Legislation

The applicable legislation governing the design of buildings in NSW is the Environmental Planning and Assessment Act 1979.

Applicable Building Code of Australia (BCA)

The proposed development will be subject to compliance with the relevant requirements of the BCA as in force at the time that the application for the Construction Certificate is made.

In this regard it is assumed that the Construction Certificate application will be made prior to the 1st May 2022, as such this report is based upon the Deemed-to-Satisfy provisions of BCA 2019 amendment 1.

Should the application for Construction Certificate be made after 1st May 2022, this report will be required to be updated to reflect any changes made and now required by the BCA.

Should an *out of cycle* change occur to the Building Code of Australia, then this report is required to be updated to reflect any applicable changes made and now required by the BCA.

Legislative Provisions for the Upgrade of Existing Buildings

Any new work shall comply with the BCA, that being BCA 2019 Amendment 1.

The consent authority, when assessing the development application, may require that the existing building be brought into partial or full compliance with the current provisions of the BCA. The triggers for upgrade include:

- Where the building works, together with any other works completed or authorised within the previous 3 years, represents more than half the total volume of the building; or
- Council are not satisfied that the measures contained within the building are adequate for the purposes of life safety or the prevention of spread of fire to adjacent buildings.

3 Development Description & Assessment Information

3.1 Proposed Development

The proposed development comprises of an extension to an existing warehouse.

3.2 Location and Description

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The site is located on 24-27 Lambridge Place, Penrith NSW 2750. Lot 11 & 12, DP 1087962.

Figure 3.1: Satellite view from SIXMaps

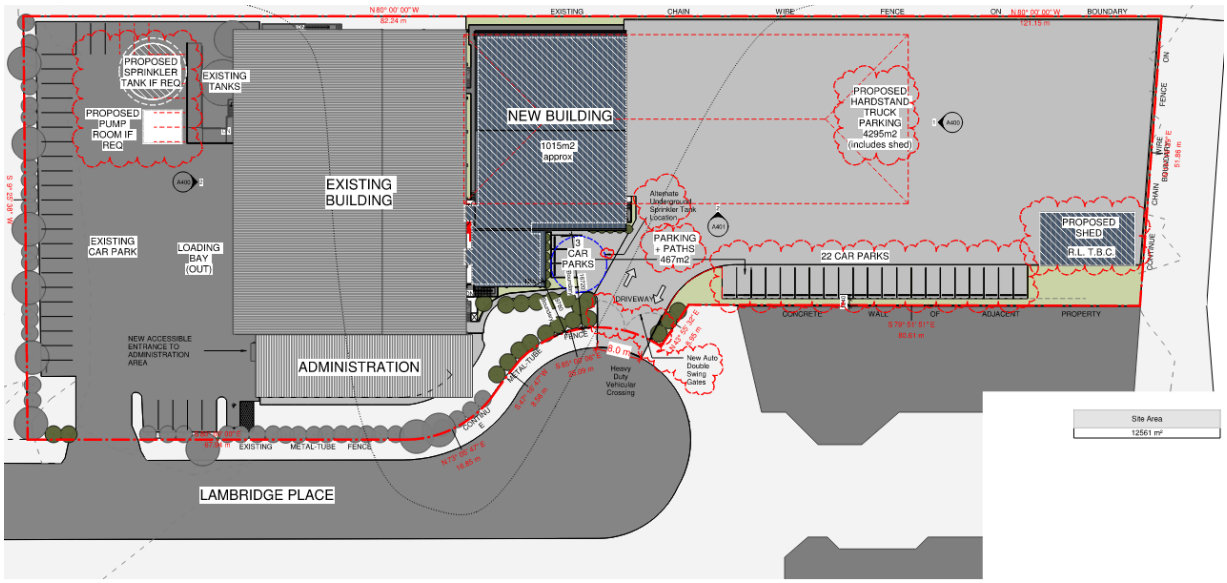

Figure 3.2: Site plan produced by Pace Architects

3.3 BCA Classification (Clause A3.2)

The proposed development shall contain the following classifications: -

- Class 7b: being a warehouse building or part

3.4 Rise in Storeys (Clause C1.2)

The proposed development has been assessed to have a *rise in storeys* of 2.

3.5 Effective Height (Clause A1.1)

The proposed development has been assessed to have an *effective height* of 0 m. Please note the definition of effective height of a building was changed 1 May 2016. The BCA now defines effective height as: -

"Effective height means the vertical distance between the floor of the lowest storey included in a determination 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)."

3.6 Type of Construction Required (Clause C1.1 / Table C1.1)

The proposed development is required to be Type A Construction. Specification C1.1 outlines the fire resistance required by certain building elements. This has also been provided in Appendix B.

3.7 Floor Area and Volume Limitations (Clause C2.2 / Table C2.2)

The development is limited to the following floor area and volume compartment limitations: -

Class		Type A	Type B	Type C
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
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

3.8 Building Data Summary

Part of Development	Use	Class	Floor Area (approx.) m^2	Population (using D1.13)
'Whole'	Warehouse	7b	1000	33

Notes:

- The above populations have been based on the floor areas and calculations in accordance with Table D1.13 of the BCA.
- Spaces not used for storage are considered as ancillary.

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Summary of Construction and Building	
Use(s)	Warehouse
Classification(s)	Class 7b
Number of Storeys contained	1
Rise in Storeys	2
Type of Construction	Type C
Effective Height (m)	0

4 Proposed Fire Safety Schedule

The following is a draft Fire Safety Schedule for the proposed building, listing the likely measures and standards of performance required, this schedule shall be subject of further development and review as part of the Performance Solutions assessment: -

Fire Safety Schedule

Clause 168 of the Environmental Planning and Assessment Regulation 2000

Premises: 'Food Boss'
Address: 24-27 Lambridge Place, Penrith NSW 2750

The following essential fire safety measures shall be implemented in the whole of the building premises and each of the fire safety measures must satisfy the standard of performance listed in the schedule which, for the purposes of Clause 168 of the Environmental Planning and Assessment Regulation 2000, is deemed to be the current fire safety schedule for the building.

SCHEDULE – Base Building BCA Year 2019-Amendment 1
Type of Construction C
Effective height = 0 m

	Measure	Status	Existing Performance Standard
1.	Self-closing, automatic closing and latching mechanisms	N	BCA 2019 Amd. 1 Clause C3.4, C3.5, C3.6, C3.7, C3.8, C3.11, Spec C3.4
2.	Emergency lighting	N	BCA 2019 Amd. 1 Clause E4.2, E4.3 E4.4, AS 2293.1-2018
3.	Exit and directional signage	N	BCA 2019 Amd. 1 Clause E4.5, NSW E4.6 & E4.8, Spec E4.8 AS 2293.1-2018
4.	Fire & Smoke dampers	N	BCA 2019 Amd. 1 Clause E2.2, C2.5, C3.12, C3.15, Spec E1.8, Spec E2.2, Spec C2.5, Spec G3.8 AS/NZS 1668.1-2015, AS 1682.1-2015, AS 1682.2-2015, Manufacturer's specifications
5.	Fire doors	N	BCA 2019 Amd. 1 Clause C2.12, C2.13, C3.4, C3.6, C3.8, C3.11, Spec C3.4, AS 1905.1-2015

	Measure	Status	Existing Performance Standard
6.	Fire hose reel systems	N	BCA 2019 Amd. 1 Clause E1.4, AS 2441-2005
7.	Fire hydrant systems	N	BCA 2019 Amd. 1 Clause E1.3, AS 2419.1-2005, AS 2118.6-2012 (Combined System)
8.	Fire seals (protecting openings and service penetrations in fire resisting components of the building)	N	BCA 2019 Amd. 1 Clause C3.15, Spec C3.15, AS 4072.1-2005, AS 1530.4-2014, Manufacturer's specifications
9.	Fire shutters	N	BCA 2019 Amd. 1 Clause C3.4, Spec C3.4, AS 1530.4-2014, AS 1905.2-2005 tested prototype
10.	Portable fire extinguishers	N	BCA 2019 Amd. 1 Clause E1.6, AS 2444-2001
11.	Wall wetting sprinkler and drencher systems	N	BCA 2019 Amd. 1 Clause C3.4, Spec G3.8, AS 2118.2-2010

Notes
* Indicate whether the measure is new (N), existing (E) or Modified (M)

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5 BCA Assessment – Clause by Clause

BCA Clause	Compliance Provisions	Status	Assessment commentary
Part B - Structural			
B1 – Structural Provisions			
B1.0	Deemed-to-Satisfy Provisions	Compliance Readily Achievable	Any 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/NZS1170.2-2011, AS/NZS1170.3-2003, AS1170.4-2007 and any other applicable Australian Standards. To be addressed by the project's Structural Engineer with drawings and design certification.
Specifications			
Part C – Fire Resistance			
C1 - Fire Resistance			
C1.1	Type of Construction Required	Noted	Type C Construction. Elements shall comply with Spec C1.1 Table 5.
C1.8	Lightweight Construction	Compliance Readily Achievable	Any light weight construction must comply to Specification C1.8 provisions within the BCA. Refer to Specification for further details.
C1.9	Non-combustible building elements	Compliance Readily Achievable	The following building elements and their components must be non-combustible: (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (ii) The flooring and floor framing of lift pits. (iii) Non-loadbearing internal walls where they are required to be fire-resisting.
C1.10 & *NSW Variation*	Fire Hazard Properties	Compliance Readily Achievable	All floor, wall and ceiling lining materials shall comply with C1.10 and Specification C1.10.
C1.14	Ancillary elements	Compliance Readily Achievable	Ancillary elements fixed, installed, or attached to internal parts or external face of an external wall that is required to be non-combustible must also be non-combustible unless exempted by Clause C1.14. Please refer to this Clause for required elements.
C2 - Compartmentation and Separation			
C2.2	General Floor area and volume limitations	Compliance Readily Achievable	Limitations for Type C are not exceeded if fire separation is achieved under C2.7 Maximum Fire Compartment for a Class 7b, Type C is - 2000m^2 & 12000m^3

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C2.7	Separation in fire walls	Further Details Required	The fire walls between each fire compartment must be constructed in accordance with; -The fire wall has the relevant FRL prescribed by Specification C1.1 (90/90/90) for each of the adjoining parts, and if these are different, the greater FRL. -Any openings in a fire wall must not reduce the FRL required by Specification C1.1 for the fire wall, except where permitted by the Deemed-to-Satisfy Provisions of Part C3, i.e. fire doors & fire collars. - 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. In order for new building to be considered a separate building, the fire wall must; -extend through all storeys and spaces in the nature of storeys that are common to that part and any adjoining part of the building -be carried through to the underside of the roof covering. Fire walls of existing building shall also have the required FRL prescribed by Specification C1.1 (90/90/90)
C2.12	Separation of equipment	Further Details Required	A battery system installed in the building that has voltage exceeding 12 volts and a capacity exceeding 200 kWh must be separated from the remainder of the building. If batteries in Charging Station exceeds these specifications and therefore must have— (A) an FRL as required by Specification C1.1, but not less than **120/120/120**; and (B) any doorway protected with a self-closing fire door having an FRL of not less than –/120/30
C3 – Protection of Openings			
C3.2	Protection of openings in external walls	Compliance Readily Achievable	Openings within 6m of adjacent buildings require protection in accordance with C3.4.
C3.4	Acceptable methods of protection	Compliance Readily Achievable	Openings require protection due to C3.2 Acceptable methods of protection include; Wall Wetting Sprinklers or --/60/30 Fire doors which are *automatic* closing or *self closing.* Fire doors must comply with Spec. C3.4
C3.5	Doorways in fire walls	Does Not Comply	Doors in firewalls must achieve an FRL of not less than that required by Specification C1.1 for the fire wall except that each door have an insulation level of at least 30. i.e. -/90/30. If 2 fire doors or shutters are used (one on each side of the doorway) each must have an FRL of not less than ½ that required by Specification C1.1 for the fire wall except that each door must have an insulation level of at least 30. Fire doors in firewalls must be self-closing or automatic closing. Automatic closing must be triggered by activation of a smoke detection system in both fire compartments the fire wall is separating.
C3.15	Openings for service installations	Compliance Readily Achievable	Any new proposed penetrations must comply with provisions of C3.15 and Spec. C3.15. Generally addressed prior to OC, with installation certificates that detail a schedule of every penetration.
C3.16	Construction joints	Compliance Readily Achievable	Any proposed joint construction is to comply with the provisions of C3.16 and in accordance to AS 1530.4

C3.17	Columns protected with lightweight construction to achieve an FRL	Compliance Readily Achievable	Any lightweight construction must be with a method and materials identical with a tested prototype which has achieved the required FRL.
Specifications			
Spec C1.1	Fire-Resisting Construction	Compliance Readily Achievable	Refer to specification
Spec C1.8	Structural Tests for Lightweight Construction	Compliance Readily Achievable	Refer to specification
Spec C1.10 & *NSW Variation*	Fire Hazard Properties	Compliance Readily Achievable	Refer to specification
Spec C3.4	Fire Doors, Smoke Doors, Fire Windows and Shutters	Compliance Readily Achievable	Refer to specification
Spec C3.15	Penetration of Walls, Floors and Ceilings by Services	Compliance Readily Achievable	Refer to specification
Part D - Access and Egress			
D1 - Provision for Escape			
D1.4	Exit travel distances	Does Not Comply	Travel distance shall be as follows: **Class 7** - 20m to a point of choice - 40m total distance to an exit The maximum allowable travel distances are exceeded. 30m to a POC in lieu of 20m and 43m (total) to an exit in lieu of 40m. A design change is necessary, alternatively to be addressed by a fire engineered performance solution.
D1.6 & *NSW Variation*	Dimensions of exits and paths of travel to exits	Compliance Readily Achievable	Dimensions of exits and paths of travel appear compliant with provisions in D1.6 of the BCA. 1m in width of an exit or path of travel to an exit is required. The unobstructed height of throughout must also not be less than 2m (1980mm at doorways). Aggregate exit width caters for the proposed number of occupants on each level as determined by D1.13 of the BCA.
D1.11	Horizontal exits	Compliance Readily Achievable	Each fire compartment must only rely upon one horizontal exit. Horizontal exit means a required doorway between 2 parts of a building separated from each other by a fire wall. Clear area required 0.5m² p/p. 33 x 0.5=17m² Proposed roller shutter doors to comply with the requirements of this clause if they serve as required exits when seeking egress from the existing chiller room.
D1.13 & *NSW Variation*	Number of persons accommodated	Noted	Approximately 33 people, being 30m^2 per person as per D1.13.
D2 – Construction of Exits			
D2.7	Installations in exits and paths of travel	Compliance Readily Achievable	Services or equipment comprising— (i) electricity meters, distribution boards or ducts; or (ii) central telecommunications distribution boards or equipment; or (iii) electrical motors or other motors serving equipment in the building, may be installed in— (iv) a required exit, except for fire-isolated exits specified in (a); or (v) in any corridor, hallway, lobby or the like leading to a required exit

			if the services or equipment are enclosed by non-combustible construction or a fire protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure.
D2.13 & NSW Variation	Goings and risers	Compliance Readily Achievable	Risers and goings must comply with D2.13 and have slip resistance as per table D2.14. Architect to confirm as design progresses.
D2.14	Landings	Compliance Readily Achievable	750mm landings to be provided at bottom and top of stairs as per D2.14 and landings and stairs nosings throughout to have a slip resistance as per table D2.14. Architect to confirm as design progresses.
D2.15 & *NSW Variation*	Thresholds	Compliance Readily Achievable	No steps are to be located closer to the doors threshold then the width of the door unless to the door leads to open space; a step ramp compliant with AS1428.1-2009 can be incorporated.
D2.16 & *NSW Variation*	Barriers to prevent falls	Compliance Readily Achievable	Compliant balustrades not less than 1m high with no climbable features between 150mm and 760mm are to be provided wherever it is possible to fall 1m or more. Architect to confirm as design progresses.
D2.17	Handrails	Compliance Readily Achievable	Handrails are to be provided to either side of stairs (one side in fire isolated stairs) in accordance with AS1428.1-2009. Architect to confirm as design progresses.
D2.19 & *NSW Variation*	Doorways and doors	Compliance Readily Achievable	Doors serving as required exits or forming part of required exits must be swinging or power operated. If fitted with a door which is power-operated— (A) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and (B) if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.
D2.20.	Swinging doors	Compliance Readily Achievable	Doors forming part of a required exit must not encroach at any part of its swing more than 500mm on the required width of the exit, i.e. F.I.S landings. Doors must swing in the direction of egress unless serving a ground floor tenancy that is less than 200m2 and incorporates a hold-open device.
D2.21 & *NSW Variation*	Operation of latch	Compliance Readily Achievable	Doors shall be readily openable without a key from the side that a person may seek egress by a single handed downward action on a single device located between 900mm and 1100mm. Alternatively door must be readily openable on activation of a fail-safe device.
D2.23	Signs on doors	Compliance Readily Achievable	Signage to be provided on exit and fire door; for a self-closing door— "FIRE SAFETY DOOR DO NOT OBSTRUCT DO NOT KEEP OPEN"; or for a door discharging from F.I.S "FIRE SAFETY DOOR—DO NOT OBSTRUCT"
D3 – Access for People with a Disability			
D3.1	General building access requirements	Noted	Access is required to all areas of the Class 7 building.

D3.2	Access to buildings	Does Not Comply	An accessway must be provided to a building: (i) from the main points of a pedestrian entry at the allotment boundary & (ii) from another accessible building connected by a pedestrian link; and (iii) from any required accessible carparking space on the allotment. The proposed design has no accessible entrances. D3.4 exemption can be applied.
D3.3	Parts of buildings to be accessible	Does Not Comply	Access is to be provided to and within all areas normally used by occupants in accordance with AS 1428.1-2009. The internal layout proposed is accessible. However, no accessible entrances are provided.
D3.4	Exemptions	Further Details Required	The following areas are not required to be accessible: (a) An area where access would be inappropriate because of the particular purpose for which the area is used. (b) An area that would pose a health or safety risk for people with a disability. (c) Any path of travel providing access only to an area exempted by (a) or (b). Due to the use of the building, an exemption under this clause is feasible. Engage an Access Consultant if necessary.
D3.5	Accessible carparking	Compliance Readily Achievable	Accessible carparking is to be provided for class 5, 7, 8, 9b (school) and 9c buildings. This requires: 1 space for every 100 carparking spaces or part thereof or as stipulated by a development consent (DA). 1 Accessible parking space in accordance with AS2890.6-2009 is required.
D3.6	Signage	Compliance Readily Achievable	To be provided throughout in accordance with details in D3.6. i.e. tactile and braille indicating levels, sanitary facilities etc.
Part E – Services and Equipment			
E1 – Fire Fighting Equipment			
E1.3	Fire hydrants	Further Details Required	A fire hydrant system shall be provided in accordance with Clause E1.3, and AS2419.1-2005. Engineering Details of the proposed fire hydrant system shall be provided. This detail shall be certified by a suitably qualified Accredited Practitioner - Fire Safety The location of fire hyrants have not been indicated.
E1.4	Fire hose reels	Compliance Readily Achievable	A fire hose reel (FHR) system shall be provided in accordance with Clause E1.4, and AS2441-2005. Engineering Details of the proposed FHR system will be required. This detail shall be certified by a suitably qualified Accredited Practitioner - Fire Safety
E1.5 & *NSW Variation*	Sprinklers	Further Details Required	Sprinklers are required in fire compartments that exceed 2000m^2 in floor area or 12000m^3 in volume which contain excessive fire hazards. Refer to Appendix F for further details. A Fire Services Engineer to confirm if in rack sprinkler protection is required.
E1.6	Portable fire extinguishers	Compliance Readily Achievable	Portable fire extinguishers shall be provided in accordance with Clause E1.6, and AS 2444-2001. Details of the type of portable fire extinguishers proposed and their location shall be provided. This detail shall be certified by a suitably qualified person

Specifications			
E1.5	Fire Sprinkler Systems	Noted	Sprinklers are to comply with this specification, refer to specification.
E2 – Smoke Hazard Management			
E2.2 & *NSW Variation*	General requirements	Noted	A smoke detection and alarm system is not required under this clause. However, under C3.5 automatic closing of roller shutter doors is to be initiated by a smoke detection system.
E4 – Emergency Lighting, Exit Signs and Warning Systems			
E4.0	Deemed-to-Satisfy Provisions	Compliance Readily Achievable	Emergency Lighting & Exit Signage to be provided to the building in accordance with E4 and AS 2293.1-2005.
Part F – Health and Safety			
F1 – Damp and Weatherproofing			
F1.0	Deemed-to-Satisfy Provisions	Noted	There are no Deemed-to-Satisfy Provisions for Performance Requirement FP1.4 (The prevention of the penetration of water through external walls) This must be addressed by way of Performance Solution.
F1.1	Stormwater drainage	Compliance Readily Achievable	Stormwater drainage shall comply with AS 3500.3-2018. Details of the proposed Stormwater Management System shall be provided. This detail shall be certified by a suitably qualified and Chartered Engineer
F1.4	External above ground membranes	Compliance Readily Achievable	Waterproofing membranes for external above ground use must comply with AS 4654.1-2012 and AS 4654.2-2012. Details demonstrating compliance shall be provided
F1.5	Roof coverings	Compliance Readily Achievable	The roof must be convered with one of the following materials, concrete roof tiles, terracotta roof tiles, cellulose cement corrugated sheeting, metal sheet roofing, plastic sheet roofing or shingles made of terracotta, fibre cement, timber or slate. Compliance with fire resisting construction and non-combustible construction of Part C must also be achieved as applicable. Where none of the above materials is proposed, a Performance Solution addressing Performance Requirements FP1.4 will be required
F1.6	Sarking	Compliance Readily Achievable	Sarking-type material used for weatherproofing of rood and walls must comply with AS 4200.1- 2017 and AS 4200.2-2017. Compliance with fire resisting construction and non-combustible construction of Part C must also be achieved as applicable
F1.7	Waterproofing of wet areas in buildings	Compliance Readily Achievable	Waterproofing of wet areas shall comply with the requirements of Table F1.7 and AS 3740-2010. Details demonstrating compliance shall be provided
F1.9	Damp-proofing	Compliance Readily Achievable	Moisture from the ground must be prevented from reaching the structure of the building. Where a damp-proof course is provided it must comply with AS 2904-1995 or impervious sheet material in accordance with AS3660.1-2014. Details demonstrating compliance shall be provided
F1.10	Damp-proofing of floors on the ground	Compliance Readily Achievable	Floors laid on ground shall be provided a vapour barrier in accordance with AS 2870-2011. Details demonstrating compliance shall be provided
F1.13	Glazed assemblies	Compliance Readily Achievable	Glazed assemblies in an external wall shall comply with AS 2047-2014. The following glazed assemblies need not comply revolving doors, fixed louvres, skylights / roof lights, sliding and swinging doors without a frame, heritage windows or second hand windows, windows constructed onsite which are not design tested. Details demonstrating compliance shall be provided
F2 – Sanitary and Other Facilities			
F2.2	Calculation of number of occupants and facilities	Noted	33 Occupants estimated used D1.13
F2.3	Facilities in Class 3 to 9 buildings	Further Details Required	Shortfall of sanitary facilities based on 33 occupants. Please specify staff numbers, as proposed sanitary facilities accommodate only 20 occupants.
F2.4	Accessible sanitary facilities	Compliance Readily Achievable	Accessible sanitary facilities are provided, accessible sanitary facilities to be in accordance with AS 1428.1-2009.

F3 – Room Heights			
F3.1	Height of rooms and other spaces	Compliance Readily Achievable	Floor to ceiling heights compliant with Clause F3.1 of the BCA shall be achieved throughout the development. Generally compliant, details confirming compliance shall be provided.
F4 – Light and Ventilation			
F4.4	Artificial lighting	Compliance Readily Achievable	Artifical lighting shall be provided to required stairways, passageways and ramps. Artifical lighting shall comply with AS/NZS 1680.0
F4.5 & *NSW Variation*	Ventilation of rooms	Compliance Readily Achievable	Natural ventilation or mechanical ventilation to be provided. Please engage Mechanical Engineer to confirm compliance with F4.5 and AS 3666.1. If compliance with DtS not achievable a Performance Solution demonstrating compliance with FP4.3 and FP4.4 may be more appropriate.
F4.8	Restriction on location of sanitary compartments	Further Details Required	Sanitary compartments must not open directly into— (a) a kitchen or pantry; or (b) a public dining room or restaurant; or (c) a dormitory in a Class 3 building; or (d) a room used for public assembly (which is not an early childhood centre, primary school or open spectator stand); or (e) a workplace normally occupied by more than one person. Accessible bathrooms open into Battery Recharge Station. Provisions specified by F4.9 can be implemented to achieve compliance.
F4.9	Airlocks	Further Details Required	If a sanitary compartment is prohibited under F4.8 from opening directly to another room— (i) access must be by an airlock, hallway or other room with a floor area of not less than 1.1 m2 and fitted with self-closing doors at all access doorways; or (ii) the sanitary compartment must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.
Part J – Energy Efficiency			
J0.0	Deemed-to-Satisfy Provisions	Compliance Readily Achievable	Part J Report to be provided by ESD Consultant, any recommendations set out by the report shall be implemented. ESD Consultant to certify compliance with Part J.

6 Appendix A – Architectural Plans Reviewed

The following documentation, prepared by Pace Architects was used in the assessment and preparation of this report: -

Drawing No.	Title	Date	Drawn By	Revision
210208 - A101	Proposed Site	22/02/2021	Pace Architects	2
210208 - A201	Proposed Ground Floor Plan	22/02/2021	Pace Architects	2
210208 - A201	Proposed Ground Floor Plan	22/02/2021	Pace Architects	2
210208 - A202	Floor Plans and Travel Distances	-	Pace Architects	-
210208 - A300	Sections	22/02/2021	Pace Architects	1
210208 - A301	Detail Wall	22/02/2021	Pace Architects	1
210208 - A400	Elevations	22/02/2021	Pace Architects	1
210208 - A401	Elevations	22/02/2021	Pace Architects	1

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7 Appendix B – Table 5 of Specification C1.1

Below is an abridged version of Table 5 of Specification C1.1. These are the Deemed to Satisfy requirements and do not take into consideration any reduction in FRL's sought via a performance-based solution or any concessions afforded by Part 3 of Specification C1.1

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—				
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				
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—				
All	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS—				
Bounding public corridors, public lobbies and the like—				
All	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding sole-occupancy units—				
All	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if required to be rated—				
All	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—				
ROOFS				
Any	–/–/–	–/–/–	–/–/–	–/–/–

8 Appendix C – Occupancy Calculations

Ground Floor				
Subject Area	Occupancy Use	D1.13 Density	Floor Area (approx.)	Population Determined
'Whole'	Storage and Ancillary Space	30m^2 / person	1000m^2	33
		TOTAL	1000m^2	33

9 Appendix E – Sanitary Facilities Calculations

Sanitary Facility Calculations												
Description of building or part	Occupant Number	Population No.		Required			Provided			Difference		
				WC	U	B	WC	U	B	WC	U	B
Warehouse	34	Male	17	1	1	1	1		1	0	-1	0
		Female	17	2		1	1		1	-1		0

10 Appendix F – Occupancies of Excess Fire Hazards

Below is a summary of Clause E.15

Sprinklers are required in fire compartments that exceed 2000m^2 in floor area or 12000m^3 in volume which contain excessive fire hazards.

Occupancies of excessive fire hazard comprise of buildings which contain—

a. hazardous processes or storage including the following:
- i. Aircraft hangars.
- ii. Cane furnishing manufacture, processing and storage.
- iii. Fire-lighter and fireworks manufacture and warehousing.
- iv. Foam plastic and foam plastic goods manufacture, processing and warehousing e.g. furniture factory.
- v. Hydrocarbon based sheet product, manufacture, processing and warehousing e.g. vinyl floor coverings.
- vi. Woodwool and other flammable loose fibrous material manufacture.

b. combustible goods with an aggregate volume exceeding 1000 m3 and stored to a height greater than 4 m including the following:
- i. Aerosol packs with flammable contents.
- ii. Carpets and clothing.
- iii. Electrical appliances.
- iv. Combustible compressed fibreboards (low and high density) and plywoods.
- v. Combustible cartons, irrespective of content

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vi. Esparto and other fibrous combustible material.
vii. Furniture including timber, cane and composite, where foamed rubber or plastics are incorporated.
viii. Paper storage (all forms of new or waste) e.g. bales, sheet, horizontal or vertical rolls, waxed coated or
processed.
ix. Textiles raw and finished, e.g., rolled cloth, clothing and manchester
x. Timber storage including sheets, planks, boards, joists and cut sizes.
xi. Vinyl, plastic, foamed plastic, rubber and other combustible sheets, offcuts and random pieces and rolled
material storage, e.g. carpet, tar paper, linoleum, wood veneer and foam mattresses.
xii. All materials having wrappings or preformed containers of foamed plastics.

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