BLACKETT MAGUIRE+ GOLDSMITH

BCA ASSESSMENT REPORT

Lots 33-35 & 43 Yarrunga Street, Prestons

Client: Logos Property Group

Revision 3

Date: 19 February 2016

Project No.: 150431

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REPORT STATUS				
DATE	**REVISION**	**STATUS**	**AUTHOR**	**REVIEWED**
27.10.2015	0	Preliminary Assessment – For client & consultant review	DG	TH
18.11.2015	1	Updated Preliminary Assessment – For client & consultant review	DG	TH
23.11.2015	2	Updated Preliminary Assessment – minor amendments	DG	TH
19.02.2016	3	Updated Preliminary Assessment – minor amendments	DG	TH

Prepared by:

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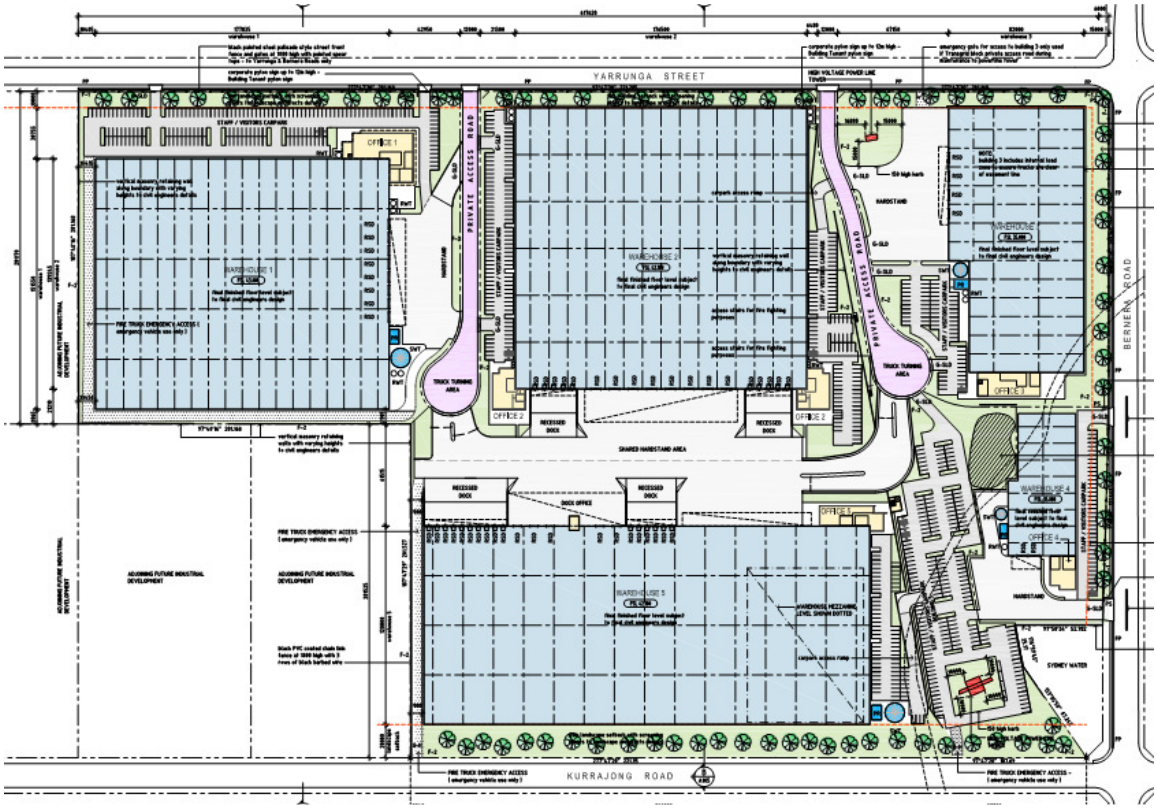
Director
Blackett Maguire + Goldsmith

A. INTRODUCTION

A.1 BACKGROUND / PROPOSAL

Blackett Maguire + Goldsmith Pty Ltd (BM+G) have been commissioned by Logos Property Group, to undertake a preliminary review of the proposed development, against the deemed-to-satisfy (DTS) provisions of the Building Code of Australia 2015 (BCA) pursuant to the provisions of clause 145 of the *Environmental Planning & Assessment Regulation 2000* and clause 18 of the *Building Professionals Regulation 2007*.

The proposed development comprises of the construction of five (5) new industrial buildings, each with ancillary offices with carparking facilities and loading areas. Note: The proposed Masterplan of the site includes the staged construction of the proposed five (5) buildings, whereby Stage 1 includes the construction of Warehouse 2 (30,005m² warehouse, 810m² ancillary office), and Warehouse 5 (32,400m² warehouse, 6,560m² warehouse mezzanine, 535m² ancillary office); Stage 2 includes the construction of Warehouse 1 (26,950m² warehouse, 1,800m² ancillary office); Stage 3 includes the construction of Warehouse 3 (12,280m² warehouse, 1,100m² ancillary office) and Stage 4 includes the construction Warehouse 4 (3,285m² warehouse, 300m² ancillary office).



Source: Axis Architectural Drawing No. DA-A 102/B

A.2 AIM

The aim of this report is to:

- Undertake an assessment of the proposed warehouse facility against the Deemed-to-Satisfy (DtS) Provisions of the BCA 2015 for the key issues ONLY, relevant to the masterplan of the site.
- Identify any BCA compliance issues that require resolution/attention for the proposed development at the CC Application stage.

A.3 PROJECT TEAM

The following BM+G Team Members have contributed to this Report:

- Dean Goldsmith (Director)
- Tony Heaslip (Peer Review Building Surveyor)

A.4 DOCUMENTATION

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

- BCA 2015.
- Guide to the BCA 2015.
- Architectural plans prepared by Axis Architectural numbered:

Drawing No.	Revision	Date	Drawing No.	Revision	Date
DA – A - 100	B	February 2016	DA – A - 101	B	February 2016
DA – A - 102	B	February 2016	DA– A -104	B	February 2016
DA – A - 107	B	February 2016	DA– A- 211	B	February 2016
DA – A - 212	B	February 2016	DA – A - 213	B	February 2016
DA – A - 221	B	February 2016	DA– A - 222	B	February 2016
DA – A - 223	B	February 2016	DA – A - 231	A	November 2015
DA– A- 232	A	November 2015	DA– A - 241	A	November 2015
DA– A - 242	A	November 2015	DA – A - 251	B	February 2016
DA – A - 252	B	February 2016	DA – A - 253	B	February 2016

A.5 REGULATORY FRAMEWORK

Pursuant to clause 145 of the Environmental Planning and Assessment (EPA) Regulation 2000 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.

A.6 LIMITATIONS & EXCLUSIONS

The limitations and exclusions of this report are as follows:

- The following assessment is based upon a review of the architectural documentation.
- No assessment has been undertaken with respect to the Disability Discrimination Act (DDA) 1992. The building owner should be satisfied that their obligations under the DDA have been addressed. In this regard however, the provisions of the DDA Access to Premises – Buildings Standards have been considered as they are generally consistent with the accessibility provisions of the BCA.
- The Report does not address matters in relation to the following:
  i. Local Government Act and Regulations.
  ii. NSW Public Health Act 1991 and Regulations.
  iii. Occupational Health and Safety (OH&S) Act and Regulations.
  iv. Work Cover Authority requirements.
  v. Water, drainage, gas, telecommunications and electricity supply authority requirements.
  vi. DDA 1992.
- BM+G Pty Ltd do not guarantee acceptance of this report by Local Council, FRNSW or other approval authorities.

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- This report is intended to cover the key issues associated with the masterplan of the site and as such, separate BCA assessment reports will be required to be undertaken for each building individually.

A.7 TERMINOLOGY

Alternative Solution

A Building Solution which complies with the Performance Requirements other than by reason of satisfying the DtS Provisions.

Building Code of Australia (BCA)

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 New South Wales (NSW) under the provisions of the EPA Act and Regulation. Building regulatory legislation stipulates that compliance with the BCA Performance Requirements must be attained and hence this reveals BCA's performance based format.

Construction Certificate

Building Approval issued by the Certifying Authority pursuant to Part 4A 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 C1.1 and Specification C1.1, except as allowed for—

(i) certain Class 2, 3 or 9c buildings in C1.5; and

(ii) a Class 4 part of a building located on the top storey in C1.3(b); and

(iii) open spectator stands and indoor sports stadiums in C1.7.

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

Climatic Zone

Is an area defined in BCA Figure A1.1 and in Table A1.1 for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Deemed to Satisfy Provisions (DtS)

Provisions which are deemed to satisfy the Performance Requirements.

Effective Height

The height to 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) from the floor of the lowest storey providing direct egress to a road or open space.

Fire Resistance Level (FRL)

The grading periods in minutes for the following criteria-

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order.

Fire Source Feature (FSF)

The far boundary of a road which adjoins the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

National Construction Code Series (NCC)

The NCC was introduced 01 May 2011 by the Council of Australian Governments. The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

Occupation Certificate

Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 4A of the EPA Act 1979.

Open Space

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

Performance 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-

(a) complying with the DtS Provisions; or

(b) formulating an Alternative Solution which-

(i) complies with the Performance Requirements; or

(ii) is shown to be at least equivalent to the DtS Provisions; or

(c) a combination of and (b).

Sole Occupancy Unit (SOU)

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 includes a dwelling.

B. BUILDING CHARACTERISTICS

B.1 BUILDING CLASSIFICATION

The following table presents a summary of relevant building classification items of the proposed warehouse development (x5 buildings):

▪ **BCA Class:**	Warehouse 1-5 – Class 5 (Office) & Class 7b (Warehouse)
▪ **Rise in Storeys:**	Warehouse 1, 2, 3 & 5 - Two (2) Warehouse 4 – One (1) Note: It is assumed that the height above and below the warehouse mezzanine in Warehouse 5 does not exceed 6m per Clause C1.2.
▪ **Effective Height:**	Less than 12m
▪ **Type of Construction:**	Warehouse 1-5 - Type C Construction (Large Isolated Building)
▪ **Climate Zone:**	Zone 6
▪ **Maximum Floor Area:**	Warehouse 3 & 4 - Large Isolated Building – <18,000m^2; Warehouse 1, 2 & 5 - Large Isolated Building - >18,000m^2
▪ **Maximum Volume:**	Warehouse 4 - Large Isolated Building - <108,000m^3 Warehouse 1, 2, 3 & 5 - Large Isolated Building - >108,000m^3 (Note: Architect to confirm exact volume);

B.2 FIRE SOURCE FEATURE

The distances from the nearest Fire Source Features to each of the buildings on the site are:

Boundary	Distance to Fire Source Feature
North Western Boundary	**>3m**
South Western Boundary	**>3m**
South Eastern Boundary	**>3m**
North Eastern Boundary	**>3m**

C. BCA ASSESSMENT

C.1 BCA DEEMED-TO-SATISFY COMPLIANCE ISSUES:

The following comments have been made in relation to the relevant BCA provisions relating to the compliance issues associated with the proposed industrial facility.

SECTION B- STRUCTURE

1. Part B1 – Structural Provisions

Structural engineering details prepared by an appropriately qualified structural engineer to be provided to demonstrate compliance with Part B1. This will include the following Australian Standards (where relevant):

1. AS 1170.0 – 2002 General Principles
2. AS 1170.1 – 2002, including certification for balustrades (dead and live loads)
3. AS 1170.2 – 2002, Wind loads

4. AS 1170.4 – 2007, Earthquake loads
5. AS 3700 – 2001, Masonry code
6. AS 3600 – 2009, Concrete code
7. AS 4100 – 1998, Steel Structures and/or
8. AS 4600 – 2005, Cold formed steel.
9. AS 2047 – 1999, Windows in buildings.
10. AS 1288 – 2006, Glass in buildings.
11. AS 3660.1 – 2000, Termite control (or confirmation no primary building elements are timber).

Comments: Structural design and certification will be required at CC application stage.

SECTION C – FIRE RESISTANCE

FIRE RESISTANCE AND STABILITY

2. Clause C1.1 – Type of Construction Required

The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1 except as allowed for in this clause.

Comments: Type C Construction applies to each the five (5) buildings included in the proposed development – see notes under Spec. C1.1 below.

3. Clause C1.2 – 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.

Comments: Rise of Two (2) Storeys applies to Warehouse 1, 2, 3 & 5 and Warehouse 4 has a Rise in stories of One (1). Note: As indicated above, as no sectional information is available it is assumed that the height either above or below the proposed Warehouse Mezzanine in Warehouse 5 does not exceed 6m and as such does not constitute an additional storey per C1.2(c).

4. Clause C1.10 – Fire Hazard Properties

The fire hazard properties of the following linings, materials and assemblies in a Class 2 to 9 building must comply with **Specification C1.10** and the additional requirements of the **NSW Provisions** of the Code.

Note: See NSW C1.10(a) & (b).

Comments: Note: Design certification required at CC application stage.

COMPARTMENTATION AND SEPARATION

5. Clause C2.2 – General Floor Area and Volume Limitations

Sets out the parameters for the area and volume of Class 5, 6, 7, 8 & 9 buildings as required by sub-clauses (a), (b) & (c).

Note: Table C2.2 maximum size of Fire Compartments or Atriums.

Comments: The proposed Warehouse buildings are designated as Class 5 & 7b – Large Isolated Buildings of Type C Construction and as such the provisions for maximum fire compartment size under Table C2.2 do not apply. Refer to comments under C2.3 & C2.4 below in relation to the Large Isolated Building provisions applicable to the proposed warehouse buildings.

6. Clause C2.3 – Large Isolated Buildings

A Large Isolated Building that contain Class 5, 6, 7, 8n or 9 parts, is required to be—

(i) protected throughout with a sprinkler system complying with Specification E1.5; and

(ii) provided with a perimeter vehicular access complying with C2.4(b).

Comments: The proposed warehouse buildings are required to be sprinkler protected throughout and provided with perimeter vehicular access in accordance with Clause C2.4 (see notes below) pursuant to their Large Isolated Building designation under this clause.

7. Clause C2.4 – Requirements for Open Spaces & Vehicular Access

An open space and vehicular access required by C2.3 must comply with the requirements of sub-clauses (a) & (b) of this Part as that they must be 6m wide within 18m of the building and of a suitable bearing capacity and unobstructed height to permit the operation and passage of F&RNSW vehicles.

Comments: The proposed warehouse buildings do not comply with the provisions of C2.4 and thus the following non-compliance issues are required to be addressed as an alternative solution by the Fire Safety Engineer to demonstrate compliance with Performance Requirement CP9 - refer to the dot points and the diagram below for details of the proposed non-compliance issues:

- Vehicular Access is discontinuous between Warehouses 2, 4 & 5;– refer to diagram below.
- Vehicular Access is located greater than 18m from the external wall of the buildings in a number of locations around the site as indicated below.

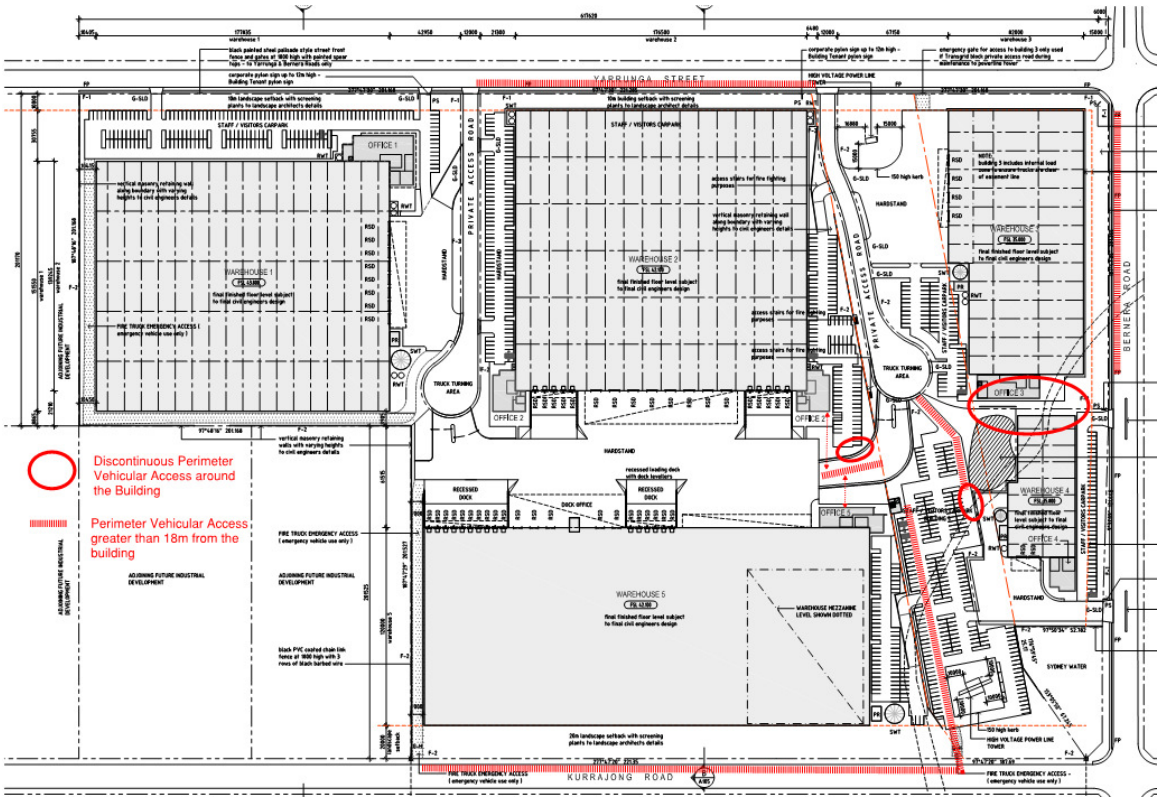

Figure 1 – Areas of Non-Compliant Perimeter Vehicular Access per BCA C2.4.

8. Clause C2.8 – Separation of Classifications in the Same Storey

If a building has parts of different classifications located alongside one another in the same storey, each element must have the required higher FRL for the classifications concerned.

Alternatively, the parts must be separated by a fire wall having the higher FRL for the classifications prescribed in Table 3 or 4 of BCA Specification C1.1 (for Type a or Type B Construction), or Table 5 for Type C Construction.

Comments: As the proposed buildings are of Type C Construction the same FRL requirements apply to both the Class 5 and Class 7b parts. Given the above, the provisions of C2.8(a) may be applied and in turn a fire wall between the Class 5 and Class 7b parts is not required.

9. Clause C2.12 – Separation of Equipment

Equipment as listed below must be separated from the remainder of the building with construction complying with (d), if that equipment comprises –

(i) Lift motors and lift control panels; or

(ii) Emergency generators used to sustain emergency equipment operating in the emergency mode; or

(iii) Central smoke control plant; or

(iv) Boilers; or

(v) A battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours.

Note: Separating construction 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.

Comments: Where appropriate, details demonstrating compliance are to be included in the CC Application plans for the new warehouse facilities.

10. Clause C2.13 – Electricity Supply System

(a) An electricity substation, main switchboard which sustains emergency equipment operating in the emergency mode, located within a building must –

(i) Be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and

(ii) Having any doorway in that construction protected with a self-closing fire door having an FRL of not less then -/120/30

(i) Be separated from any other part of the building by construction having an FRL of not less than -/120/30.

(ii) Have any doorway in that construction protected with a self-closing fire door having an FRL of not less than -/120/30.

(b) Electrical conductors located within a building that supply

Note: Where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment switchgear is separated from the non-emergency equipment switchgear by metal partitions designed to minimise the spread of fault from the non-emergency equipment switchgear.

Comments: Where appropriate, details demonstrating compliance are to be included in the CC Application plans for the new warehouse facility.

SPECIFICATIONS

11. Specification C1.1 – Fire Resisting Construction

The new building works are required to comply with the requirements detailed under Table 5 of Specification C1.1 for Type C Construction. In this regard the proposed building elements are required to comply.

Comments: Due to the configuration and position of the buildings on site there are no building elements required to be fire rated under the provisions of Table 5 of Spec C1.1.

SECTION D – ACCESS & EGRESS

PROVISION FOR ESCAPE.

12. Clause D1.4 – Exit Travel Distances

This clause specifies the permitted travel distances allowable from Class 2 to Class 9 buildings. Sub-clauses (a) to (f) specify the maximum distances to be taken into account for the various uses in each Class of building.

Comments: *Exit Travel distances do not comply within the warehouse portions of the buildings (in Warehouse 1, 2, 3 & 5 only) as they are greater than 40m. These non-compliances will need to be addressed by the Fire Safety Engineer as an Alternative Solution addressing Performance Requirement DP4 & EP2.2*. Note: A final egress assessment will be required when confirmation of all exit door locations is provided on the architectural plans.

13. Clause D1.5 – Distances Between Alternative Exits

Exits required as alternative exits must be –

(a) not less than 9m apart; and

(b) not more than – 60m apart.

(c) Located so that the alternative paths of travel do not converge such that they become less than 6m apart.

Comments: The distances between alternative exits are considered to be non-compliant with the provisions of D1.5 also, in the warehouse portions of each building as they are greater than 60m. These non-compliance issues are required to be addressed as an alternative solution by the Fire Safety Engineer to demonstrate compliance with Performance Requirements DP4 & EP2.2. Note: A final egress assessment will be required when confirmation of all exit door locations is provided on the architectural plans.

14. Clause D1.6 – Dimensions of Exits

This clause details the minimum dimensions such as height and width of paths of travel from Class 2 to 9 buildings. It also specifies the minimum dimensions of doorways from the various compartments and the width of exit doors from buildings depending on the uses and functions carried out within them.

Comments: Population numbers for each individual building will be required to be provided by Logos Property Group at the CC Application to facilitate an assessment of the provisions of D1.6. In this regard, however, it is considered that compliance is readily achievable.

PART D2 CONSTRUCTION OF EXITS

15. Clause D2.7 – Installations in Exits & 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. It prescribes 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.

If installed in a path of travel to an exit, electrical distribution boards, communication cupboards and the like containing motors, etc are to be enclosed with non-combustible construction, and doors are to be provided with smoke seals to the perimeter.

Comments: *Architect to note. Details are to be provided with the construction certificate documentation.*

16. Clause D2.10 – Pedestrian Ramps

A fire-isolated ramp may be substituted for a fire-isolated stairway if the construction enclosing the ramp and the dimensions comply with the requirements for a fire-isolated

stairway. The ramp must also comply with the access requirements of D3 and AS1428.1, not have a gradient steeper than 1:8 and have a non-slip finish.

Comments: *Details of slip resistance for the ramp finish to be provided with the occupation certificate documentation.*

17. Clause D2.13 – Goings & Risers

This clause sets out the detailed requirements for the construction and geometry of the goings and risers in required stairways. These details are set out in sub-clauses (a) to (c) and *Table D2.13 Riser and Going Dimensions*.

Comments: *All stairs are to have solid risers, and are to have contrasting nosings, slip resistant surfaces throughout in accordance with clause 11 of AS2419.1-2009. (See diagram in Part D3 below). Refer to the slip resistance requirements for stairs below under Clause D2.14. Note: As indicated above retail spiral stairs cannot be used as required exits as they contain winders in lieu of landings per D2.13(a)(viii).*

Riser and Going Dimensions (mm)			
	Riser (R)	**Going (G)**	**Quantity (2R + G)**
Maximum	190	355	700
Minimum	115	250	550

18. Clause D2.14 – Landings

The dimensions and gradients of landings in stairways are set out in this clause; the configuration will depend on the proposed use of a building.

Landing surfaces must be slip resistant surfaces OR slip resistant nosing not less that listed in Table D2.14 when tested in accordance with AS4586.

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

Comments: *Details to be confirmed with the occupation certificate documentation.*

19. Clause D2.15 – Thresholds

The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless –

(a) In patient care areas in a class 9a health-care building, the door sill is not more than 25mm above the finished floor level to which the doorway opens: or

(b) In a Class 9c aged care building, a ramp is provided with a maximum gradient of 1;8 for a maximum height of 25mm over the threshold.

Comments: *Architect to note – details confirming that there are no steps or ramps proposed within the door thresholds are to be included on the CC Application plans.*

20. Clause D2.16 – Balustrades or Other Barriers

This clause details where balustrades are required to be provided and sets out in specific detail the construction requirements for different building uses.

This clause details 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 eth 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 could 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 within a class 7 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.

Comments: *Details of the proposed balustrades are to be provided with the application for the construction certificate for assessment against the above criteria.*

21. Clause D2.17 – Handrails

This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings. Handrails are required both sides of a public corridor in a Class 9c building.

This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings. A Class 9a building must be provided along at least one side of every passageway or corridor used by patients and must be:

+ Fixed not less than 50mm clear of the wall; and
+ Where practicable, continuous for their full length.

Comments: *Details of the proposed handrails are to be provided for assessment with the application for the construction certificate. Note 1: Refer to Part D3 for additional requirements for handrails associated with accessible compliant stairways..*

22. Clause D2.19 – Doorways & Doors

This clause applies to all doorways 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 the door is also 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; or upon the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.

Comments: *Applicable to all parts of the proposed building. Certification will be required at CC Application stage.*

23. Clause D2.20 – Swinging Doors

A swinging door in a required exit or forming part of a required exit must swing in the direction of egress and must not otherwise impede egress. In addition, the door must not encroach at any part of its swing by more than 500mm on the required width of the exit (with the exception of airlocks and sanitary compartments, and with the exception of buildings or building parts that are less than 200m^2).

Comments: *Current configuration is compliant with the requirements of this clause, excluding the exit door on lower ground from bicycle rack area.*

24. Clause D2.21 – Operation of Latch

A door in a required exit or forming part of a required exit and in a path of travel to a required exit must be readily openable without a key from the side that faces a person

seeking egress, by a single downward action or pushing action on a single device which is located between 900mm & 1100mm from the floor. This clause prohibits the use of devices such as deadlocks and knobs (rather, lever latches are required). D2.21 also sets out exceptions in relation to buildings where special security arrangements are required in relation to the uses carried out.

Where fitted with a fail-safe device which automatically unlocks the door upon the activation of a sprinkler system or detection system, the above need not apply.

Comments: *Architect to note. Compliance must be demonstrated at OC application stage.*

ACCESS FOR PEOPLE WITH A DISABILITY

25. Clause D3.2 –Access to Buildings

This part requires accessways to be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or accessible associated buildings connected by a pedestrian link.

Comments: Compliant Access is required throughout all areas in the proposed buildings in accordance with AS 1428.1-2009. Refer to D3.3 and D3.4 below.

26. Clause D3.3 – Parts of the Building to be Accessible

This part specifies the requirements for accessways within buildings which must be accessible.

Note: If compliant access is not proposed to be provided to the Warehouse areas in each building, comment will be required from an Access Consultant as to whether a concession under D3.4 or an alternative solution can be considered.

Comments: The following provisions of Clause D3.3 and in turn AS 1428.1-2009 are applicable to the proposed buildings:

a. Access into the principal entrance of the ground floor main lobby of each warehouse building will be required to comply with AS1428.1-2009.

b. An accessible pathway is required to be provided from the access roadways adjoining the site to the main entry of each warehouse and between the main entries of each warehouse. Details demonstrating compliance will be required at CC Application and particular attention is drawn to the need to provide dedicated pathways that are independent of the truck accessway around the site and the lift access from the lower levels on the eastern side of the site to the upper levels on the western side.

c. A passenger lift is required in the Office areas of each building and is to comply with BCA Clause E3.6 in order to access the upper storey. The lift floor dimensions must be a minimum of 1.1m wide x 1.4m deep for all lifts that travel less than 12m. .

d. Turning Spaces & Passing Spaces for people in wheelchairs are required to be provided in common corridors in accordance with Section 6 of AS 1428.1-2009.

e. All new internal surfaces are required to have a slip-resistant surface and the texture of the surface shall be traversable by persons with a disability pursuant to Section 7.1 of AS1428.1-2009.

f. Each accessible stairway are required to be designed and constructed in accordance with the requirements specified under Section 10 and 11 of AS1428.1-2009 that includes handrails on either side.

g. Contrast nosings are required to the new accessible stairways in accordance with AS1428.1-2009.

h. BCA Clause D3.3(g) requires that any proposed carpets within the buildings are to have a pile height or pile thickness not exceeding 11mm and the carpet backing thickness shall not exceed 4mm (total thickness shall not exceed 15mm).

i. A luminance contrast colour of 30% is to be provided to all new doorways; including door frames (to clearly identify the difference between the door and the adjoining wall/door frame).

j. Accessible doorways in common areas are to achieve a minimum unobstructed clear width of 850mm (clear opening width does not include the door leaf thickness) and where there are double doors proposed, at least one leaf is to achieve this minimum clearance.

k. The circulation space around all accessible swinging doors is required to comply with Clause 13.3 and Figure 31 of AS 1428.1-2009. Circulation space requirements are to be detailed on the CC drawings – refer to Section 13 of AS1428.1-2009. Generally all doors require a clear space of 530mm at the latch side of the door and 110mm at the hinge side of the door to achieve compliance on a 'front on approach' accordingly.

l. All door handles and related hardware to swinging doorways are required to be a type 'D' handle which allows the door to be unlocked and opened with one hand in accordance with Clause 13.5.2.

m. The required accessible car spaces are to comply with AS 2890.6 – 2009.

Details demonstrating compliance and/or design certification are to be provided at the CC Application stage.

27. Clause D3.4 – Exemptions

This part provides exemptions to the Deemed-to-Satisfy provisions for access by people with a disability. This part 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 or the tasks undertaken.

Comments: It is recommended that advice be obtained from the Access Consultant at the CC Application stage in this regard, however, consideration to an exemption for the warehouse areas (on health & safety risk basis) may be appropriate on this project.

28. Clause D3.5 – Accessible Carparking

This part provides details of the number of accessible carparking spaces required in a carpark depending on the classification of the building.

Comments: In the case of Class 5 & 7b buildings 1 compliant accessible space is required for every 100 parking spaces or part thereof. In this regard we note that the current drawings do not show any accessible spaces. Details demonstrating compliance with the requirements of D3.5 must be provided at CC application stage.

SECTION E – SERVICES AND EQUIPMENT

FIRE FIGHTING EQUIPEMENT

29. Clause E1.3 -.Fire hydrants

E1.3(a) – 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.

E1.3(b) – Requires that the fire hydrant system must be installed in accordance with the provisions of AS2419.1 and also details where internal hydrants must be located.

Comments: The proposed Warehouse buildings are required to be served by a compliant hydrant system incorporating a ring main. Details demonstrating compliance with the provisions of AS 2419.1 are required to be provided at CC Application stage. Details, including the location of booster assembly and coverage diagrams, are to be provided at CC application stage

30. Clause E1.4 – 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.

Comments: The proposed buildings are required to be served by a compliant fire hose reel system. Details demonstrating compliance are to be provided at the CC application stage.

31. Clause E1.5 – Sprinklers

A sprinkler system must be installed in a building or part of a building when required by Table E1.5 and comply with Specification E1.5. Table E1.5 sets out which types of building occupancies and Classes which require to have sprinkler systems installed in them.

Specification E1.5 sets out requirements for the design and installation of sprinkler systems.

Comments: The proposed Large Isolated Buildings (x5) are required to be sprinkler protected throughout in order to address the requirements of Clause C2.3 and Table E1.5. Details, including the location of booster assembly, are to be provided at CC application stage.

SMOKE HAZARD MANAGEMENT

32. Clause E2.2 – 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 **Table E2.2a**, 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 E2.2a**, **E2.2b** and **E2.2c**.

Comments: As the floor area and volume of Warehouse 4 is less than 18,000m^2 and 108,000m^3 respectively, smoke exhaust or smoke and heats are not required in this building.

As the volume of Warehouses 1, 2, 3 & 5 are greater than 108,000m^3, smoke exhaust or smoke and heats are required to be provided within each of these buildings. In this regard, consideration may be given to alternative solution to the required smoke hazard management requirements and in turn any such alternative solution will need to be prepared by the fire engineer and will need to demonstrate compliance with Performance Requirement EP2.2.

PART E3 LIFT INSTALLATIONS

33. Clause E3.3 – 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 3.3**.

Comments: Lift Contractor to note.

34. Clause E3.5 – Landings

E3.5(a) The provisions of clause 12.2 – "Access" of AS 1735.2 do not apply.

E3.5(b) The provisions of Clause A3.2 – "Access to landings" of Appendix A of AS 1735.1 do not apply.

E3.5(c) Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Part D.

Comments: Lift Contractor to Note.

35. Clause E3.6 – Passenger Lifts

In an accessible building, every passenger lift must be one of the types identified in **Table E3.6a,** have accessible features in accordance with **Table E3.6b** and not rely on a constant pressure device for its operation if the lift car is fully enclosed.

Comments: Lift Contractor to note.

EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS

36. Clause E4.2 – Emergency Lighting Requirements

This clause details when emergency lighting must be installed in Class 2 to 9 buildings. The requirements for buildings and parts of buildings are detailed in sub-clauses (a) to (i) and each sub-clause must be considered as more than one may apply to any single building

Comments: Emergency Lighting is required throughout the buildings in accordance with E4.2, E4.4 and AS/NZS 2293.1-2005.

37. Clause E4.5 – 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.

Comments: Electrical Consultant to note, details demonstrating compliance will be required to be included in the CC plans.

SECTION F – HEALTH & AMENITY

DAMP AND WEATHERPROOFING.

38. Clause F1.1 – Stormwater drainage

Stormwater drainage must comply with AS/NZ 3500.3.

Comments: Details of stormwater disposal, from a suitably qualified consultant are required to be submitted with documentation for the CC.

39. Clause F1.5 – 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), (b) (c), (d), (e) & (f) which set out the types of materials that may be used and the adopted Australian Standards that apply to their quality and installation.

Comments: Note.

40. Clause F1.6 – Sarking

Sarking-type materials used for weatherproofing of roofs must comply with AS/NZS 4200 parts 1 and 2.

Comments: Note.

41. Clause F1.7 – Waterproofing of Wet Areas

This clause requires that wet areas in Class 2 to 9 buildings must be waterproofed. It prescribes the standards to which the work must be carried out in sub-clauses (a) to (e) with emphasis in sub-clauses (c), (d) & (e) on the construction of rooms containing urinals and their installation.

Note: Figures F1.7(1) & F1.7(2) of the Guide to the BCA contain diagrams indicating the areas of walls and floors to be protected around baths, washbasins and showers.

Comments: Note.

SANITARY AND OTHER FACILITIES

42. Clause F2.3 – Facilities in Class 3 to 9 Buildings

This clause provides the requirements for sanitary facilities to be installed in Class 3, 5, 6, 7, 8 and 9 buildings in accordance with **Table F2.3**. The requirements and variations are set out in sub-clauses (a) to (h).

Comments: As indicated above proposed population numbers are to be provided by Logos Property Group for each unit to assess if the proposed toilet facilities within the buildings are adequate to achieve compliance with Table F2.3. Details are to be provided at CC Application stage.

43. Clause F2.4 – Accessible Sanitary Facilities

Accessible unisex sanitary compartments must be provided, in accordance with **Table F2.4(a)** and unisex showers must be provided in accordance with **Table F2.4(b)**, in buildings or parts that are required to be accessible. The details for the provision of disable facilities and the standard, AS 1428.1, are set out in sub-clauses (a) to (i).

Comments: The proposed accessible toilet facilities and ambulant sanitary facilities in each tenancy are required to achieve compliance with the provisions of Table F2.4. Details demonstrating that the design of each facility complies with AS 1428.1 are to be provided at CC application stage; however, compliance is readily achievable.

LIGHT AND VENTILATION

44. Clause F4.4 – Artificial Lighting

Artificial lighting is required where it is necessary to minimise the hazard to occupants during an emergency evacuation. Sub-clauses (a), (b) & (c) sets out the places where artificial lighting is always required in all classes of buildings and the standard to which it must be installed.

Comments: Design certification to be submitted at CC Application Stage.

45. Clause F4.5 – 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 F4.6 **or** a mechanical or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1.

Note: NSW F4.5(b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 – the reference to AS/NZS 2666.1 is deleted from the BCA in NSW as the need to comply with this standard is regulated under the relevant section of the Public Health Act 1991.

Comments: Design certification to be submitted at CC Stage.

SECTION J – ENERGY EFFICIENCY

46. PART J1 – BUILDING FABRIC

The provision of insulation to the building envelope will be required in the proposed Building, in accordance with **Clauses J1.0 to J1.6**, and the **Tables therein**, including Thermal Construction General, Roof and Ceiling Construction, Roof-lights, Walls, and Floors.

Comments: This section applies to any air-conditioned spaces proposed within the building. Design details and/or certification of design will be required to be submitted with the application for a Construction Certificate.

47. PART J2 – GLAZING

Glazing within the external building envelope will be required to be assessed/designed to achieve compliance with **Clauses J2.0 to J2.5**, including the **Tables therein**, having regard to the maximum aggregate air-conditioning energy attributable to each façade of the proposed building.

Comments: This section applies to any air-conditioned spaces proposed within the building. A calculation demonstrating that the proposed design of the building complies with the requirements of **Part J2** is required to be submitted with the application for a Construction Certificate.

48. PART J3 – BUILDING SEALING

The proposed building envelope will be required to be sealed to prevent air infiltration in accordance with the requirements of **Clauses J3.0 to J3.6**. is required to be provided.

Comments: This section applies to any air-conditioned spaces proposed within the building. Details or certification that the proposed building design complies with the requirements of **Part J3** will need to be submitted with the application for a Construction Certificate.

49. PART J5 – AIR-CONDITIONING & 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 J5** will be required to be provided from the Mechanical Engineer.

Comments: Details or certification demonstrating compliance will need to be submitted with the application for a Construction Certificate.

50. PART J6 – ARTIFICIAL LIGHTING & 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 J6** will be required to be provided from the Electrical Engineer.

Comments: Consultant certification required at CC Application Stage – this requirements applies to the whole building regardless of the provision of air-conditioning in the various parts.

51. PART J7 – 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 J7** (Section 8 of AS 3500.4) will be required to be provided from the Hydraulic Engineer.

Comments: Consultant certification required at CC Application Stage.

52. SECTION J8 – ACCESS FOR MAINTENANCE & FACILITIES FOR MONITORING

Note: See NSW Subsection J8 for access to maintenance.

Access must be provided to all plant, equipment and components that require maintenance in accordance with Part I2, and suitable facilities for energy monitoring are required to be provided.

Comments: Consultant certification required at CC Application Stage.

C. CONCLUSION

This report contains an assessment of the referenced architectural documentation for the proposed masterplan warehouse/industrial development at Lots 33-35 & 43 Yarrunga Street, Prestons against the Deemed-to-Satisfy Provisions of the BCA 2015. Arising from the review, it is considered that the proposed development can readily achieve compliance with the relevant provisions of the BCA subject to the provision of further details at the relevant CC Application stage.