BLACKETT MAGUIRE+ GOLDSMITH

BCA ASSESSMENT REPORT

60 Wallgrove Road, Eastern Creek

Client: Mirvac

Revision 2

Date: 11 June 2015

Project No.: 150169

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REPORT STATUS				
DATE	**REVISION**	**STATUS**	**AUTHOR**	**REVIEWED**
28.05.2015	0	Preliminary Assessment – For client & consultant review	DG	TH
05.06.2015	1	Final Report – For DA Submission	DG	TH
11.06.2015	2	Updated Architectural Drawings	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 Mirvac, 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.

Source: SBA Architectural Drawing No. DA 001

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 to identify the key issues ONLY, that are 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 SBA Architects numbered:

Drawing No.	Revision	Date	Drawing No.	Revision	Date
DA001	C	10.06.2015	DA302	B	10.06.2015
DA002	L	10.06.2015	DA303	C	10.06.2015
DA101	B	10.06.2015	DA304	B	10.06.2015
DA102	B	10.06.2015	DA305	B	10.06.2015
DA103	C	10.06.2015	DA401	B	10.06.2015
DA104	B	10.06.2015	DA402	B	10.06.2015
DA105	E	10.06.2015	DA403	C	10.06.2015
DA106	C	10.06.2015	DA404	B	10.06.2015
DA201	B	10.06.2015	DA405	B	10.06.2015
DA202	B	10.06.2015	DA501	B	10.06.2015
DA203	C	10.06.2015	DA502	B	10.06.2015
DA204	B	10.06.2015	DA503	C	10.06.2015
DA205	C	10.06.2015	DA504	B	10.06.2015
DA301	B	10.06.2015	DA505	B	10.06.2015

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.
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- No part of this document may be reproduced in any form or by any means without written permission from BM+G Pty Ltd. This report is based solely on client instructions, and therefore, should not be used by any third party without prior knowledge of such instructions.
- 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 (a) 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 (x3 buildings):

▪ **BCA Class:**	Warehouse 1-5 – Class 5 (Office) & Class 7b (Warehouse)
▪ **Rise in Storeys:**	Warehouse 1-5 - Two (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 2 - Large Isolated Building – <18,000m^2; Warehouse 1 3 4 & 5 - Large Isolated Building - >18,000m^2
▪ **Maximum Volume:**	Warehouse 1-5 - 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 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 each the five (5) buildings.

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 greater than 18m from the external wall of Warehouse 1, & 5 – refer to diagram below.

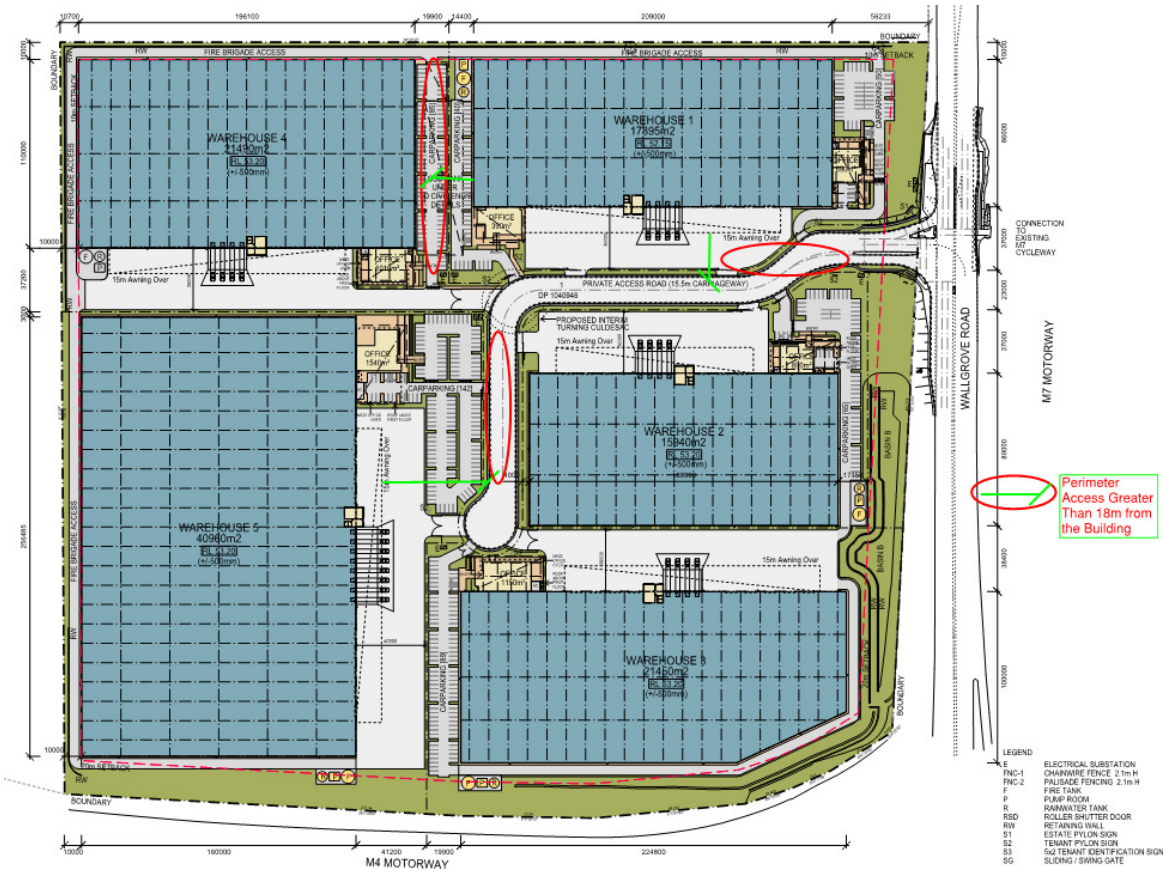

Figure 1 – Areas of Non-Compliant Perimeter Vehicular Access per BCA C2.4.

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.

PROTECTION OF OPENINGS

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: Given the location of the buildings on the site and the configuration of each building, there are no fire rating requirements in Table 5 of Spec. C1.1 that are applicable to the project.

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: The exit travel distances in the building are considered to be non-compliant with the requirements of Clause D1.4, in the following areas:

- Warehouse 1 (central areas of the warehouse) – maximum exit travel distances of 65m to an exit.
- Warehouse 2 (central areas of the warehouse) – maximum exit travel distances of 65m to an exit.
- Warehouse 3 (central areas of the warehouse) – maximum exit travel distances of 67m.
- Warehouse 4 (central areas of the warehouse) – maximum exit travel distances of 75m.
- Warehouse 5 (central areas of the warehouse) – maximum exit travel distances of 95m.

The above 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.

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 non-compliant with the provisions of D1.5, in the following areas:

- Warehouse 1 - maximum distances between alternative exits of 130m.
- Warehouse 2 - maximum distances between alternative exits of 130m.
- Warehouse 3 - maximum distances between alternative exits of 135m.
- Warehouse 4 - maximum distances between alternative exits of 150m.
- Warehouse 5 - maximum distances between alternative exits of 190m.

The above 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.

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 Mirvac 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.

ACCESS FOR PEOPLE WITH A DISABILITY

15. 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.

16. 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 Warehouse Buildings 3 & 4 are divided into two separate tenancies these provisions apply to both tenancies independently.

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 unit will be required to comply with AS1428.1-2009. This will necessitate 1:40 cross falls / landings at the accessible entrance.

b. An accessible pathway is required to be provided from the new access roadway adjoining the site to the main entry of each warehouse. In addition a compliant accessible path is required to be provided between each of the main entries of each building on the site. 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.

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. Design details are also required on the Construction Certificate plans.

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:

    i. Internal finishes and coverings (i.e. vinyl and tiles) are required to achieve a slip resistance classification under wet & dry conditions to comply with AS/NZS 4586-2004 '*Slip Resistance Classification of New Pedestrian Surface Materials*'.

    ii. All finished vertically abutting floor surfaces are to be trip free, the following details demonstrate the tolerance level for floor finishes:

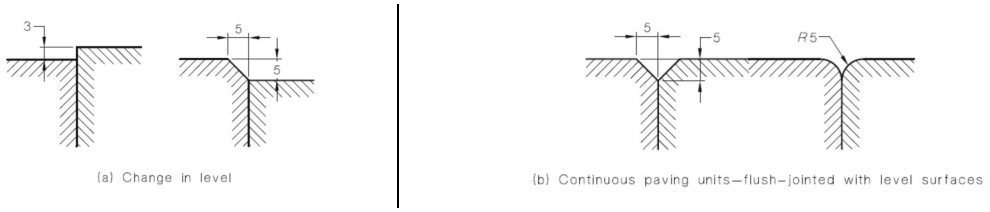

Figure 6: Trip Free Surfaces

Source – Section 7.2 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:

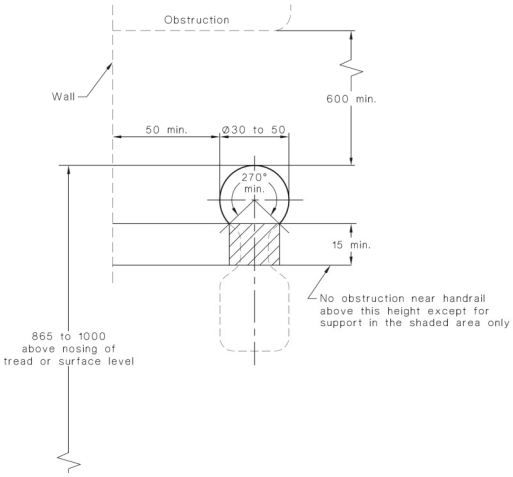

Figure 7: Handrail Details

Source – Section 10.3 and 12 of AS1428.1-2009

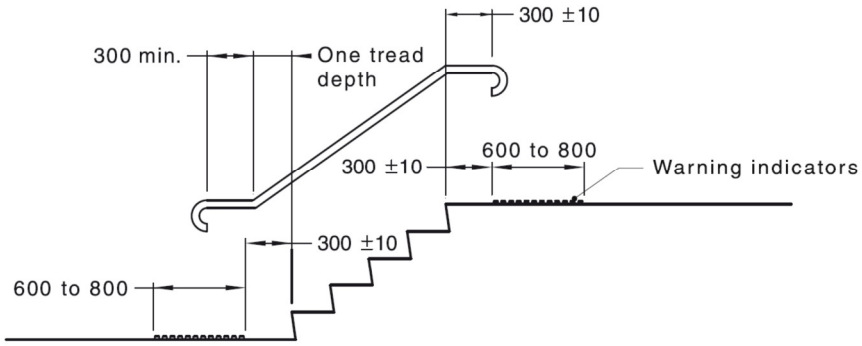

Figure 8: Handrail Details

Source – Section 10.3 of AS1428.1-2009

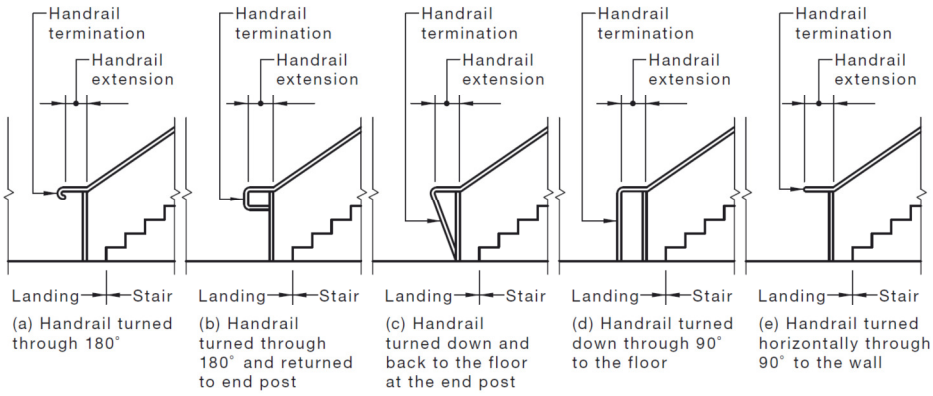

Figure 9: Handrail Details

Source – Section 11.1 and 12 of AS1428.1-2009

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

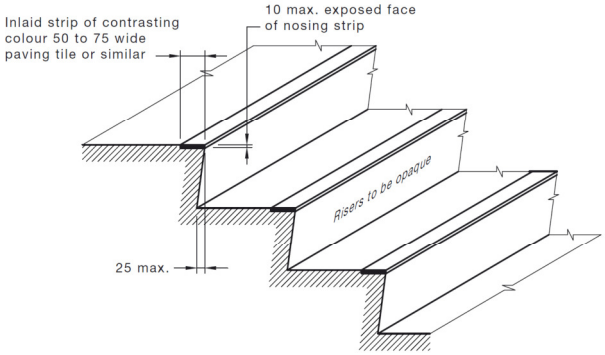

Figure 10: Nosing Details

Source – Section 10.8.1 of AS1428.1-2009

Note: Internal stairways to comply with Section 11 of AS1428.1-2009 and contrast nosings are also to be provided to fire stairs pursuant to Clause 11.1 (f) and (g).

g. BCA Clause D3.3(g) requires that any proposed carpets within the building 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).

h. 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).

i. 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.

j. 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.

k. 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.

l. 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.

17. 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, however, consideration to an exemption for the warehouse areas of each building (on health & safety risk basis) may be appropriate on this project.

18. 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 ten

(10) accessible parking spaces proposed on the site is compliant with the requirements of D3.5.

SECTION E – SERVICES AND EQUIPMENT

FIRE FIGHTING EQUIPEMENT

19. 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. Details demonstrating compliance with the provisions of AS 2419.1 are required to be provided at CC Application stage. It is noted that each of the proposed buildings are proposed to be served from independent fire services/hydrant ring mains that are to be installed as part of the staged development. Details, including the location of booster assemblies and coverage diagrams, are to be provided at CC application stage.

20. 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.

21. 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. It is noted that each of the proposed buildings are to be served from independent fire services infrastructure that are to be installed as part of the staged development. Details, including the location of booster assemblies, are to be provided at CC application stage.

SMOKE HAZARD MANAGEMENT

22. 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 volume of all warehouses 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 an 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

23. 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.

24. 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.

25. 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

26. 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.

27. 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.

28. 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.

29. 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.

30. Clause F1.6 – Sarking

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

Comments: Note.

31. 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

32. 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 Mirvac 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, however, compliance is readily achievable based on the current sanitary facilities numbers shown on the plans.

33. 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

34. 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.

35. 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

All new air conditioned parts of the building are required to satisfy the provisions under Parts J1 (Building Fabric), J2 (Glazing) & J3 (Building Sealing).

Furthermore, the proposed building is required to comply with Parts J5 (Air Conditioning and Ventilating Systems), J6 (Artificial Lighting and Power) and J7 (Hot Water Supply).

Details and design certification are required to be provided from the Architect, Mechanical and Hydraulic Consultants prior to the issue of the Construction Certificate for each building.

C. CONCLUSION

This report contains an assessment of the referenced architectural documentation for the proposed warehouse/industrial development at 60 Wallgrove Road, Eastern Creek 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.