



## **BCA ASSESSMENT REPORT**

### **PORT BOTANY INDUSTRIAL ESTATE**

**PREPARED FOR:**  
**GOODMAN PROPERTY SERVICES**  
**(AUST) PTY LTD**

Revision 04

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Project No.: 140382

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17/12/14	03	Updated BCA Report to include design changes to Warehouse B	SR	DG
18/12/14	04	Updated BCA Report to include design changes to Warehouse B & issued for Submission of the S75W Application	SR	DG

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## A. INTRODUCTION

### A.1 BACKGROUND / PROPOSAL

Blackett Maguire + Goldsmith Pty Ltd (BM+G) have been commissioned by Goodman Property Services (Aust) Pty Ltd, to undertake a preliminary review of the proposed development, against the deemed-to-satisfy (DTS) provisions of the Building Code of Australia 2014 (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 development, the subject of this report, is proposed to be located over Lot 1 DP 254392, Lot 1 DP 1078077, Lot 11 DP 109505 and Lot 1 DP 873898, Crown Land Containing Springvale Drain (between Nant Street and Lot 1 DP1078077 and Lot 1 DP254392); and is currently known as Orica Southlands. The new project name for the development is identified as **Port Botany Industrial Estate**.

The site currently has a S75J Project Approval No. 06\_0191 dated 16 April 2012 and S75W Modification dated 14 August 2013 for Remediation and a Warehouse Development Project. The current approval will be subject to a new S75W Modification which forms the purpose of this assessment report to accompany and support the application to the Department of Planning and Infrastructure (NSW Government Planning & Environment).

The proposed development comprises the construction of a new Port Botany Industrial Estate which is Stage 1 of a Master Plan and includes two (2) warehouse buildings with ancillary three (3) level offices/mezzanine storage areas, with recessed loading dock and external carparking facilities. For the purpose of this report and for identification purposes the warehouses have been identified as Warehouse A and Warehouse B with Warehouse A having potential to accommodate four (4) separate Sole Occupancy Units and Warehouse B being designed to accommodate a single tenant which is understood to be TOLL.

There will be service roads and perimeter access roads for emergency vehicles generally around the two (2) Warehouse Buildings however they will be discontinuous. There will also be hardstand areas in between the two (2) Warehouses which will also be separated by a security fence. Access to the site will be via vehicular entrances along the Western side (Coal Pier Road) and Southern side (McPherson Street). The Allotments that serve Stage 1 of the development will be consolidated with the exception of the southern Allotments which will remain under Orica ownership and will have a Right of Carriageway registered with the LPI to permit vehicular and pedestrian access & egress to and from the site from McPherson Street.

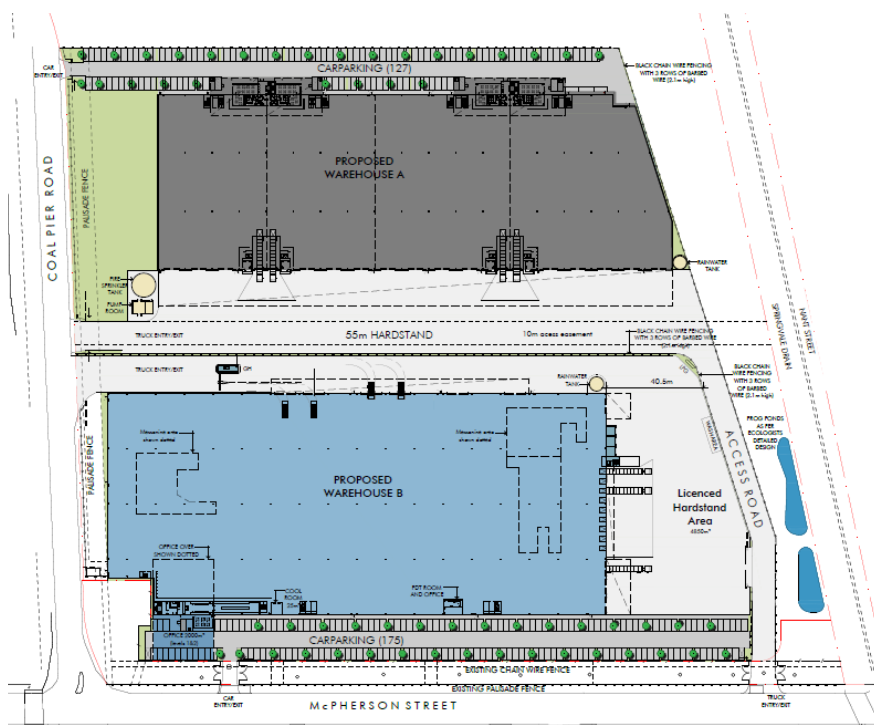


Figure 1 – Excerpt of Master Plan Prepared by Nettletontribe



The principal building characteristics are defined as follows:

**Warehouse A (Consisting of up to Four (4) Warehouse Units):**

- Ground floor common entry lobbies, recreational break out / kitchen / lunch areas, amenities and warehouse loading docks and racking fitout.
- First Floor office areas including common lobbies and amenities.
- Second Floor / Mezzanine storage areas situated directly above the First Floor offices.

**Warehouse B (Consisting of one (1) Single Warehouse Unit):**

- Ground floor office entry lobby, Storage rooms, cool room, freight /dispatch offices, warehouse loading dock, mezzanine structures, high tech conveyor system and racking fitout.
- and.
- First Floor office areas including break out / kitchen / lunch area, amenities and warehouse link-way.
- Second Floor office areas including conference and training rooms and amenities.

**External Areas:**

- Off street parking provisions to accommodate approx. 304 vehicles.
- Service roads for truck and emergency vehicle operations.
- Landscaping.
- Fire services and other services infrastructure and plant areas.
- External guard house (Warehouse B)

**A.2 Aim**

The aim of this report is to:

- Undertake an assessment of the proposed warehouse development against the Deemed-to-Satisfy (DtS) Provisions of Volume 1 of the National Construction Code Series - Building Code of Australia 2014 (BCA).
- Identify any BCA compliance issues that require resolution/attention for the proposed development.
- Accompany submission of the Section 75W Application to the Department of Planning to enable the Consent Authority to be satisfied that the building design is capable of complying with the BCA and that subsequent compliance with the fire & life safety, health & amenity and energy efficiency requirements of the BCA, will not give rise to design changes to the building which may necessitate the submission of further applications under Section 75W of the Environmental Planning and Assessment Act, 1979.
- Enable the certifying authority to satisfy its statutory obligations under Clause 145 of the Environmental Planning and Assessment Regulation, 2000.
- Enable the certifying authority to satisfy its statutory obligations under Clauses 17 & 18 of the Building Professionals Regulation 2007.

**A.3 PROJECT TEAM**

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

- Steven Rodriguez (Senior Building Surveyor)
- Dean Goldsmith (Director / Peer Review / Quality Assurance)

**A.4 DOCUMENTATION**

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

- BCA 2014
- Guide to the BCA 2014



- Environmental Planning and Assessment Act 1979 (EP&A)
- Environmental Planning and Assessment Regulation 2000 (EP&AR).
- Access to Building Premises Building Standards 2010.
- Fire Engineering Strategy prepared by NDY.
- Architectural plans prepared by Nettleton Tribe Pty Ltd numbered 4244\_DA-01, 4244\_DA-02, 4244\_DA-03, 4244\_DA-11, 4244\_DA-12, 4244\_DA-13, 4244\_DA-15, 4244\_DA-16, 4244\_DA-17, 4244\_DA-18, 4244\_DA-19, 4244\_DA-20, 4244\_DA-21, 4244\_DA-22, 4244\_DA-31, 4244\_DA-41, 4244\_DA-42, 4244\_DA-43, 4244\_DA-51, and 4244\_DA-51 dated 18 December 2014.

## **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 relevant requirements of the BCA as in force at the time 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 1<sup>st</sup> May 2015, as such **BCA 2014** Version applies to the subject development.

## **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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## **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.

### *Fire Resistance Level (FRL)*

The grading periods in minutes for the following criteria-

- (a) structural adequacy; (b) integrity; (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).



## B. BUILDING CHARACTERISTICS

### B.1 BUILDING CLASSIFICATION

The following table presents a summary of relevant building classification items of the proposed warehouse development (x2 Buildings):

▪ <b>BCA Class:</b>	Class 5 (Offices), Class 7a (Under-Croft Carparking) & Class 7b (Warehouse / Ancillary Storage)
▪ <b>Rise in Storeys:</b>	Three (3) - Ground Floor Warehouse/Office Entrances , First Floor Offices & Second Floor Offices and/or Ancillary Storage
▪ <b>Effective Height:</b>	Less than 12m & 25m
▪ <b>Type of Construction:</b>	Type B Construction (Large Isolated Building)
▪ <b>Climate Zone:</b>	Zone 5
▪ <b>Fire Compartment:</b>	Large Isolated Building – Greater than 18,000m <sup>2</sup> & 108,000m <sup>3</sup>

### B.2 FIRE SOURCE FEATURE

The distances from the nearest Fire Source Features are:

Warehouse A	
Boundary / Fire Source Feature	Distance to Fire Source Feature
Northern Side	>3m (From Adjacent Boundary)
Southern Side	>6m (From Warehouse B)
Eastern Side	>3m (from Adjacent Boundary)
Western side	>6m (From Far Boundary of Road)

Warehouse B	
Boundary / Fire Source Feature	Distance to Fire Source Feature
Northern Side	>6m (From Warehouse A)
Southern Side	>3m (From Adjacent Orica Allotment)
Eastern Side	>3m (from Adjacent Boundary)
Western side	>6m (From Far Boundary of Road) & <u>&lt;3m</u> (From Adjacent Orica Allotment – Sth Wst Corner)

***Note 1:** The external walls / openings of Warehouse B which will be exposed to the Southern Boundary (Orica Flood Storage Allotments) between the carparking areas and McPherson Street will be addressed under a Performance Based Alternative Solution by NDY at the Construction Certificate stage.*

***Note 2:** The following assessment assumes that the Allotment/s in Stage 1 will be consolidated, having regard to the fire rating requirements of Spec. C1.1 and the fire services requirements of Section E.*





## 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 B Construction applies to each the two (2) Warehouse Buildings included in the proposed development by virtue of the rise in storeys being three (3) – 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 Three (3) Storeys applies to the two (2) Warehouse Buildings by virtue of the ancillary storage space above the first floor offices in Warehouse A and the mezzanine structures and 2 level offices above the ground floor in Warehouse Unit B.

#### 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 building/s are Class 5, 7a & 7b – Large Isolated Buildings of Type B 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 warehouse buildings.

### 6. Clause C2.3 – Large Isolated Buildings

A Large Isolated Building that exceeds 18,000 m<sup>2</sup> in floor area or 108,000 m<sup>3</sup> in volume, is required to be—

- (i) protected throughout with a sprinkler system complying with Specification E1.5;
- (ii) provided with a perimeter vehicular access complying with C2.4(b).

*Comments:* The proposed warehouse building/s will each exceed the area and volume limitations set out in Table C2.2 and as such they are required to be sprinkler protected throughout and provided with perimeter vehicular access in accordance with Clause C2.4 (see notes below) pursuant to the 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 perimeter access roads and turning bays will generally be designed to comply with the BCA and Fire & Rescue Guidelines (Policy No.4) however a few departures have been identified as matters requiring further attention by the project Fire Safety Engineer.

*Alternative Solution:* The following non-compliance issues are required to be addressed as an Alternative Solution by the Fire Safety Engineer - refer to the numbered points below and the diagram over page for details of the proposed non-compliance issues:

#### Warehouse A:

1. Vehicular Access will only be provided around three (3) sides of the building and is therefore discontinuous along the Eastern side due to site constraints associate with the Flood Storage Areas on the site. Suitable turning provisions will however be available along the Southern and Northern sides to facilitate brigade operations.
2. Additionally, the Western side will have the furthest part of the required 6m access road located at distances greater than 18m from the external walls of the building (approx.47m).

#### Warehouse B:

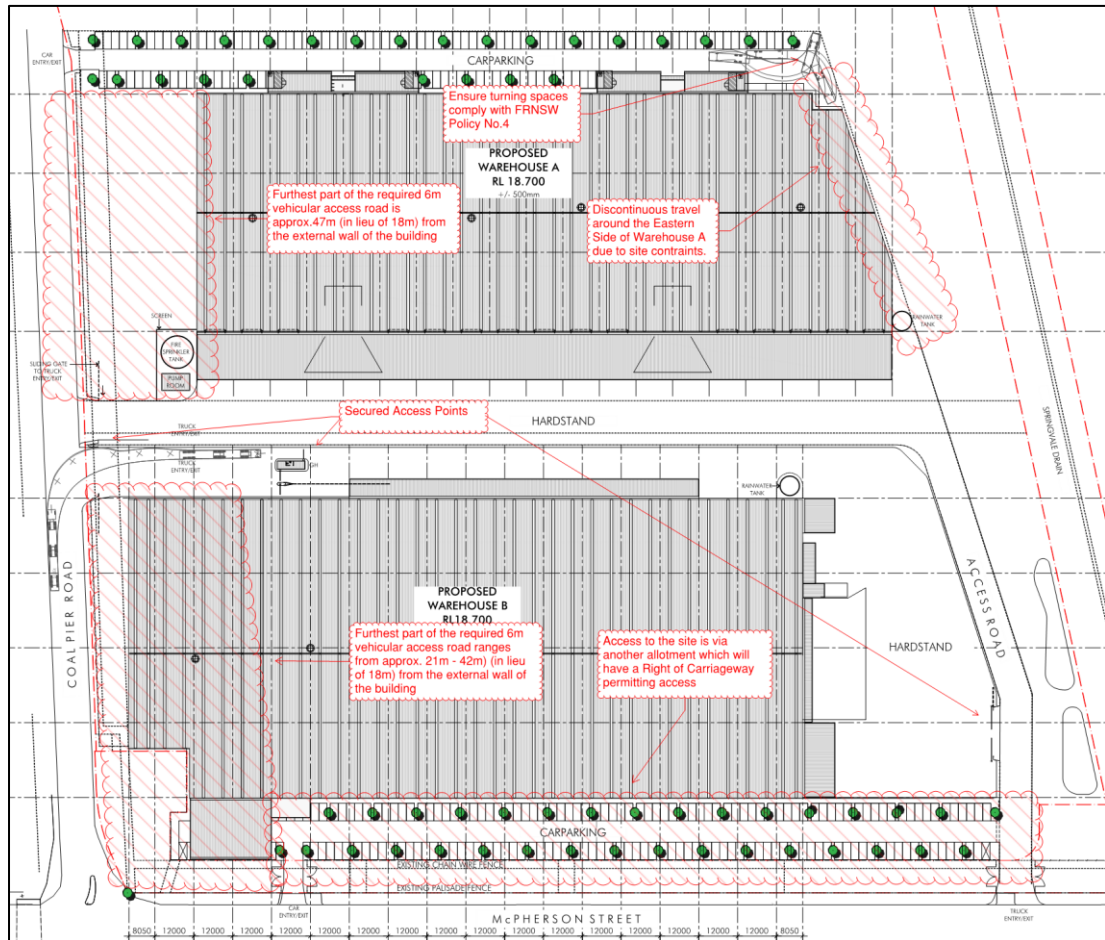
3. Vehicular Access will be provided around all four (4) sides of the building however the Western & South-Western side will have the furthest part of the required 6m access road located at distances greater than 18m from the external walls of the building (distances ranging between 21m and 42m).
4. Additionally, access to the site from McPherson Street necessitates brigade vehicles crossing via a separate allotment which will have a Right of Carriageway.

#### Site Access:

5. Access to the site will be controlled access and there will be secured access entrances, gates at the main entrance and guard / gate houses that will need to be considered.



**Note:** 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 CP9.



**Figure 2 - Areas of Non-Compliant Perimeter Vehicular Access per BCA C2.4.**

## 8. 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 Building/s. Note the battery store/charge areas that may require fire separation.



## 9. 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 than -/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.

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

## PROTECTION OF OPENINGS

### 10. Clause C3.2 – Protection of Openings in External Walls

Openings in external walls that are required to have an FRL, which are to be exposed to a fire-source feature, are required to be protected in accordance with C3.2(a) & C3.2(b).

Openings in an external wall that is required to have an FRL must –

- (a) If the distance between the opening and the fire-source feature to which it is exposed is less than –
  - (i) 3 m from a side or rear boundary of the allotment; or
  - (ii) 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or
  - (iii) 6 m from another building on the allotment that is not a Class 10, be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and
- (b) If the required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand.

**Comments:** Due to the configuration and position of Warehouse B and its proximity of its openings in the external walls (under-croft and office areas) being situated within 3m of the fire source features associated with the Orica Allotment to the South-West, will therefore require further consideration with the provisions of this clause and BCA clause C3.4.

**Alternative Solution:** Notwithstanding the departures noted above, we understand that similar to the provisions associated with the rationalisation of fire ratings to the external walls (as noted below under BCA Spec C1.1), the exposed openings will also be the subject to an Alternative Solution by the Fire Safety Engineer.

**Note:** The above non-compliance issues are required to be addressed as an Alternative Solution by the Fire Safety Engineer to demonstrate compliance with Performance Requirement CP2.

### 11. Clause C3.15 – Openings for Services Installations

All opening for services installations in building elements required to be fire-resisting with respect to integrity and insulation must be protected in accordance with the provisions of Spec. C3.15.

**Comments:** Note for compliance during construction.



## **SPECIFICATIONS**

### **12. 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 B Construction. In this regard the proposed building elements are required to comply with BCA Specification C1.1 Table 4.

*Comments:* Due to the configuration and position of Warehouse B and its proximity to the adjacent Orica Allotment to the South-West, the external non load bearing walls are required to be of non-combustible construction and achieve minimum FRL's of 240/240/240 mins for a distance of 3m from the fire source features. Load bearing walls have greater requirements (i.e. FRL's required up to 18m away).

Additionally, the internal columns supporting the First Floor office space, Second Floor ancillary storage space, under-croft carparking areas and internal mezzanine areas within Warehouse Buildings A and B will require 240/--/-- mins FRL's and any load bearing walls will need to achieve the same FRL and be constructed of concrete or masonry construction.

*Note:* The floors do not necessitate an FRL under BCA Spec C1.1 for Type B Construction. Furthermore, the higher Class 7b FRL's will be adopted throughout the building to negate the need for fire separation between the offices and warehouse/storage areas.

*Alternative Solution:* We understand that the following departures will be addressed as an Alternative Solution by the Fire Safety Engineer - refer to the numbered points below:

1. Omission of FRL's to the external walls of Warehouse Building B (South-Western Side).
2. Reduced FRL's to all the internal columns supporting the first and second floor levels, mezzanine structures etc from 240 mins to 120 mins in Warehouse Buildings A and B.

*Note:* 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 CP1 & CP2.

### **13. Specification C1.10 – Fire Hazard Properties.**

This Specification sets out requirements in relation to the fire hazard properties of linings, materials and assemblies in Class 2 to 9 buildings as set out in the Tables.

*Comments:* Refer to comments under Clause C1.10 above – certification will be required at both CC and OC Application stages.

### **14. Specification C1.11 – Performance of External Walls in Fire**

This specification contains measures to minimise in the event of fire the likelihood of external walls collapsing outwards as complete panels and the likelihood of panels separating from supporting members.

*Comments:* Structural Design certification and details demonstrating compliance are required to be provided at CC Application stage.

## **SECTION D – ACCESS & EGRESS**

### **PROVISION FOR ESCAPE**

#### **15. Clause D1.3 – When Fire Isolated Stairways & Ramps are Required**

This clause specifies the requirements for when fire isolated stairs or ramps are required in buildings based upon the number of storeys that they interconnect and the classification of the building.

*Comments:* The exit stairs serving the First Floor offices and Second Floor ancillary storage areas connect three (3) storeys in a sprinkler protected building and as such are not required to be fire isolated in accordance with D1.3(b).



## 16. 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: Egress provisions will be required to be provided from the recessed loading docks by either way of stairways into the warehouse or doors in the external walls. Additionally, the exit travel distances in certain parts of both of the Warehouse/s depart from the DTS provisions by virtue of the racking installations and size of the buildings and will therefore be subject to justification by Performance Based Alternative Solutions from the Fire Safety Engineer.

Alternative Solution: Egress distances have been assessed and are considered to be non-compliant with the requirements of Clause D1.4, in the following areas:

### Warehouse A:

1. Extended exit travel distances from the furthest part of the main warehouse floor to the nearest exit of approx.60m (in lieu of 40m). We recommend the fire engineering assessment permits distances of up to 70m to allow for construction and fitout tolerances.
2. Extended exit travel distances from the furthest part of the Second Floor Mezzanine Storage Level to the single exit stair will be approx. 30m in lieu of 20m.

### Warehouse B:

3. Extended exit travel distances from the furthest part of the main warehouse floor to the nearest exit of approx.65m (in lieu of 40m). We recommend the fire engineering assessment permits distances of up to 80m to allow for construction and fitout tolerances.
4. Egress from Warehouse B necessitates crossing of the Orica Allotment on the Southern side of the site to reach open space and the public Road.
5. Extended exit travel distances from the furthest part of the floor to an exit stair on the elevated mezzanine structures are expected upon finalisation of the fitout and stair locations and it has been assumed to be approx.30m (in lieu of 20m).
6. Extended exit travel distances from the furthest point of the floor to a 'point of choice' where egress is available in alternate directions from the Office Levels in Warehouse Unit B is approx.25m (in lieu of 20m).

**Note:** 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.

## 17. 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 exit travel distances in the building depart from the DTS provisions by virtue of the racking installations and size of the building and will therefore be subject to justification by Performance Based Alternative Solutions from the Fire Safety Engineer.

Alternative Solution: Egress distances have been assessed and are considered to be non-compliant with the requirements of Clause D1.5, in the following areas:

### Warehouse A:

1. Extended travel distances between alternative exits within the main warehouse floor are approx.115m (in lieu of 60m). We recommend the fire engineering assessment permits distances of up to 120m to allow for construction and fitout tolerances.





#### **Warehouse B:**

2. Extended travel distances between alternative exits within the main warehouse floor are approx.115m (in lieu of 60m). We recommend the fire engineering assessment permits distances of up to 120m to allow for construction and fitout tolerances.
3. Egress from Warehouse B necessitates crossing of the Orica Allotment on the Southern side of the site to reach open space and the public Road.

**Note:** *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.*

#### **18. 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.

In addition to the above, it is to be noted that all exit paths are required to have a minimum clear height of 2m and 1980mm through doorway openings per D1.6(a).

Comments: Population numbers for the proposed warehouse units are required to be provided by Goodman and Toll 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 with the proposed exits included in the current design drawings. Based on the proposed population numbers for the retail and café tenancies as calculated in accordance with D1.13, compliance with the provisions of D1.6 is achieved in all parts of the building

#### **19. Clause D1.9 – Travel by Non-fire-isolated Stairways or Ramps**

Sub-clauses (a) to (f) set out the prescribed travel distances to be provided in required exits of Class 2 to 9 buildings and Class 4 parts of buildings. The sub-clauses set out the maximum distances to be taken into account for the various uses in each Class of building.

Comments: The proposed exit stairs within the office and storage mezzanine levels / structures are capable of achieving compliance with D1.9 - further details are to be provided at CC application stage.

#### **20. Clause D1.10 – Discharge From Exits**

Requires that an exit must not be blocked at the point of discharge. Barriers such as bollards must be installed to prevent vehicles from blocking the discharge from exits.

This clause also provides the methods of construction, location and separation, at exit discharge points for all building Classes.

Comments: All discharge points from the building are required to be protected in accordance with the requirements of this clause.

#### **21. Clause D1.13 – Number of Persons Accommodated**

Clause D1.13 and Table D1.13 are used to calculate the anticipated number of people in particular types of buildings so that minimum exit widths and the required number of sanitary and other facilities can be calculated. This clause and table are not to be used for non-BCA purposes.

Comments: In accordance with the comments under D1.6 above population numbers for the proposed warehouse unit is to be provided by Goodman and Toll for each of the proposed warehouse units.

### **CONSTRUCTION OF EXITS**

#### **22. Clause D2.3 – Non-fire-isolated Stairways & Ramps**

This clause requires that required non-fire-isolated stairways and ramps must be either constructed in accordance with D2.2 or the alternative options set out in D2.3 (a) to (c).



Comments: The requirements of D2.3 apply to the proposed stairs serving each of the upper levels and mezzanine areas in the two (2) Warehouse Buildings. Details are to be provided of the stair design at CC application stage.

### **23. 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. Sub-clauses (a) to (e) 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.

Comments: This requirement applies to all cupboards containing electrical distribution boards or comms equipment that are located in a path of travel to an exit. In this regard such cupboards are to be enclosed in non-combustible materials and are to be suitably sealed against the spread of smoke.

### **24. Clause D2.8 – Enclosure of Space Under Stairs & Ramps**

A space below a required fire-isolated stairway or ramp in a fire-isolated shaft must not be enclosed to form a cupboard or other enclosed space. If the required stairway or ramp is non-fire-isolated, (including an external stairway) any cupboard underneath must have an FRL of 60/60/60, with a self-closing -60/30 door.

Comments: Applies to the proposed egress stairs serving the upper office levels and any proposed storage enclosures below them on the ground floor level in each of the office areas in the Warehouse Buildings.

### **25. 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.

**Note:** NSW D2.13(a)(ix)(x)(xi).

Comments: Applies to the proposed stairs serving the office upper levels and the external stairs into the Warehouses. Details demonstrating compliance are to be submitted with the CC Application drawings.

### **26. 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.

Comments: Applies to the proposed stairs serving the office upper level. Details demonstrating compliance are to be submitted with the CC Application drawings.

### **27. 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 –

- (i) the doorway opens to a road or open space, external stair landing or external balcony; and
- (ii) the door sill is not more than 190mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.

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

### **28. 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 in sub-clauses (a) to (i) and Tables D2.16(a), D2.16(b) & D2.16(c).

Comments: Applies to the proposed stairs serving the office upper level and all stairs servings as external exits from the warehouse areas. Details demonstrating compliance are to be submitted with the CC Application drawings. Note: The provisions of D2.16(g) and (h)(ii) apply to all external stairs and the stairs in the offices.





## **29. Clause D2.17 – Handrails**

This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings.

Comments: Architect to note, details demonstrating compliance will be required to be included in the CC plans. Handrails serving all stairs and ramps both internally and externally to the building are required to comply with the accessibility requirements of Clause D3.3 and AS 1428.1-2009.

## **30. Clause D2.20 – Swinging Doors**

A swinging door in a required exit or forming part of a required exit must be installed to the requirements of sub-clauses (a), (b) & (c). This clause only applies to swinging doors in doorways serving a required exit or forming part of a required exit. It does not apply to other doorways – see notes in the Guide to the BCA.

Comments: The proposed egress doors all swing in the direction of egress in accordance with D2.20(a) with the exception of the doors to the Ground Floor recreational areas.

## **31. 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 & 1.1m from the floor. This clause prohibits the use of devices such as deadlocks and knobs where knobs must be operated in a twisting motion in accordance with sub-clauses (a) & (b). D2.21 also sets out exceptions in relation to buildings where special security arrangements are required in relation to the uses carried out.

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

# **ACCESS FOR PEOPLE WITH A DISABILITY**

## **32. 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 Units in the proposed buildings in accordance with AS 1428.1-2009. Refer to D3.3 and D3.4 below and the services of an accessibility consultant should be engaged to provide an access report at the CC stage.

## **33. 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 unit, comment will be required from an Access Consultant as to whether a concession under D3.4 or an Alternative Solution can be considered.

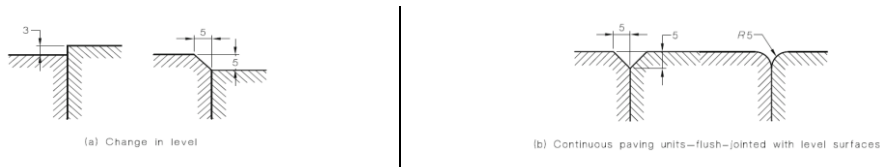
Comments: The following provisions of Clause D3.3 and in turn AS 1428.1-2009 are applicable to the proposed buildings:

- a. Access into the principal entrance of the ground floor main lobby of each warehouse unit and into each retail tenancy 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 roadways on adjoining the site to the main entry of each warehouse unit. In addition, a compliant accessible path is required on the site between the main entrances of each of the buildings/tenancies to the other buildings on the site. Details demonstrating compliance will be required at CC Application.
- c. A passenger lift is required to serve the offices and they are to comply with BCA Clause E3.6 in order to access the necessary storeys identified under Clause D3.1.

The lift floor dimensions must be a minimum of 1.4m x 1.6m for all lifts that travel more than 12m.

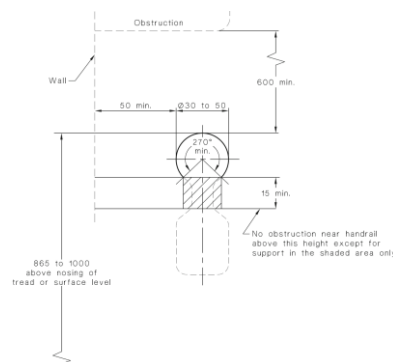
Lift access is technically also required to the Second Floor Mezzanine Levels / structures however there is scope to have this addressed under an Alternative Solution from the Access Consultant. Design details and access report/Alternative Solution are required to be furnished with the Construction Certificate application.

- 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. Note: This applies to each end of the lobby on each level of the building which is currently non-compliant.
- 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:

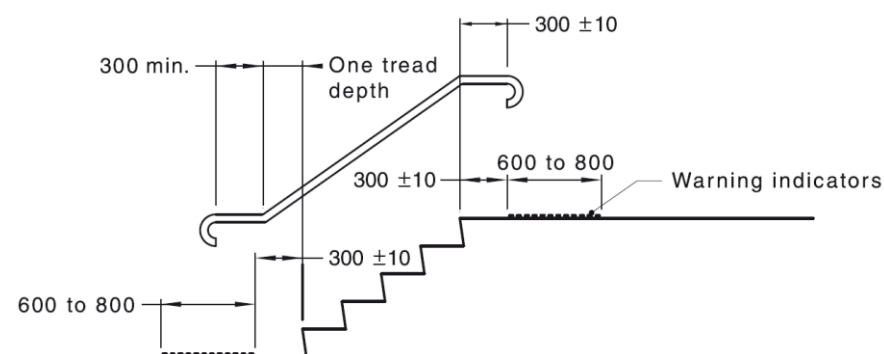


**Figure 3: Trip Free Surfaces – Section 7.2 of AS1428.1-2009**

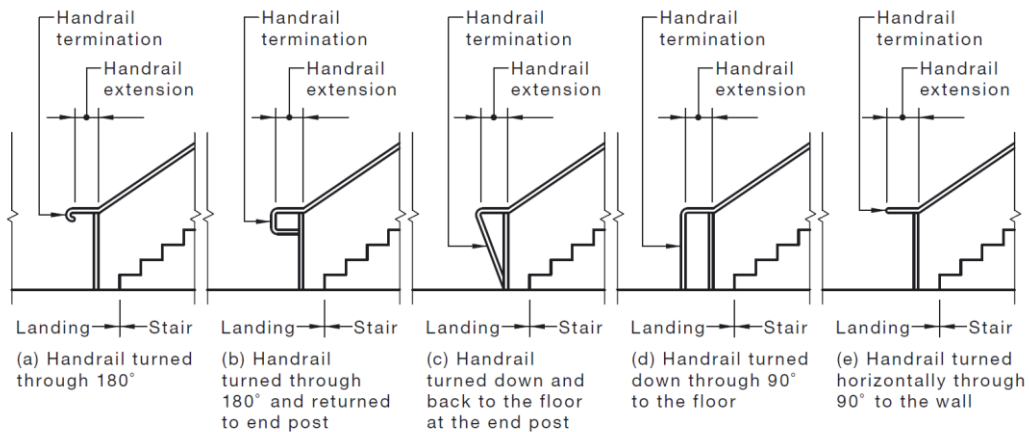
- f. Each stairway is required to be accessible and are required to be designed and constructed in accordance with the requirements specified under Section 10 and 11 of AS1428.1-2009 that includes handrails on either side;



**Figure 4: Handrail Details – Section 10.3 and 12 of AS1428.1-2009**

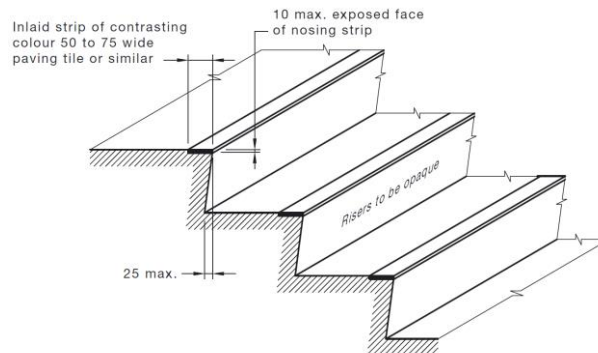


**Figure 5: Handrail Details - Section 10.3 of AS1428.1-2009**



**Figure 6: Handrail Details – 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 7: Nosing Details – 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.

#### **34. 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 in this case.

#### **35. 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 accessible parking proposed on the site is compliant with the requirements of D3.5.

#### **36. Clause D3.6 – Signage**

This section provides requirements for signage in buildings required to be accessible By Part D3.

*Comments:* Signage will be required to identify accessible facilities, an ambulant accessible facility and the paths to accessible pedestrian entries (where required).

#### **37. Clause D3.8 – Tactile Indicators**

This clause provides for the installation of tactile indicators in buildings required to be accessible and must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway, escalator, passenger conveyor, ramp, overhead obstruction or an accessway meeting a vehicular way, except for areas exempted by D3.4.

*Comments:* Compliant tactile indicators are required in all areas of the buildings to all ramps, stairs, paths approaching a driveway and any overhead obstructions less than 2m in height.

#### **38. Clause D3.11 – Ramps**

Ramps may be used as part of an accessway where there is a change of level and must comply with the requirements set out in AS1428.1.

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

### **SECTION E – SERVICES AND EQUIPMENT**

#### **FIRE FIGHTING EQUIPEMENT**

#### **39. 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 500m<sup>2</sup> 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. Notwithstanding the requested information the following departures are envisaged and will therefore be subject to justification by Performance Based Alternative Solutions from the Fire Safety Engineer.

*Alternative Solution:* Hydrant system departures are expected to be non-compliant with the requirements of Clause E1.3, in the following areas:



1. The location of the hydrant booster will not be in sight of each of the main entries of the proposed Warehouse buildings and as such will be non-compliant with AS 2419.1-2005.
2. Internal Attack hydrant will be located beneath the awning structures which will need to be assessed as external hydrants for coverage (dual heads with 2 lengths of hose for coverage).
3. Omission of radiant heat protection to external walls where hydrants are located within 10m of the building.

**Note:** 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 EP1.3.

#### **40. 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 500m<sup>2</sup>.

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.

#### **41. 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 having 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 (x2) are required to be sprinkler protected throughout in order to address the requirements of Clause C2.3 and Table E1.5. Details demonstrating compliance are to be provided at the CC application stage.

Suction valves are to ensure that they are positioned in locations away from the building and are capable of facilitating fire brigade appliance numbers and operational requirements. Details to be provided prior with the CC application.

#### **42. Clause E1.6 – Portable fire extinguishers**

Portable fire extinguishers must be provided as listed in Table E1.6 and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.

Comments: Fire extinguishers will be required to be installed in the proposed building in accordance with Table E1.6.

### **SMOKE HAZARD MANAGEMENT**

#### **43. 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 the warehouse buildings are greater than 18,000m<sup>2</sup> and 108,000m<sup>3</sup> respectively and the proposed ceiling heights will exceed 12m, automatic smoke exhaust systems are required.



Alternative Solution: Smoke Exhaust provisions are expected to be rationalised systems that will depart from the requirements of Clause E2.2 and AS1668.1-1998 and be subject to justification by Performance Based Alternative Solutions from the Fire Safety Engineer

Note: 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 EP2.2.

## LIFT INSTALLATIONS

### 44. 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.

### 45. 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.

### 46. 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 – having regard to Office 1.

## EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS

### 47. 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.

### 48. Clause E4.4 – Design & Operation of Emergency Lighting

Every required emergency lighting system must comply with AS2293.1.

Comments: Electrical Consultant to note.

### 49. 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.

### 50. Clause E4.6 – Direction Signs

If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.

**Note:** NSW E4.6.

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





#### **51. Clause E4.8 – Design & Operation of Exit Signs**

Every required exit sign must comply with AS/NZS 2293.1 and be clearly visible at all times when the building is occupied by any person having the legal right of entry into the building.

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

### **SECTION F – HEALTH & AMENITY**

#### **DAMP AND WEATHERPROOFING.**

#### **52. 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.

#### **53. 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.

#### **54. Clause F1.6 – Sarking**

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

*Comments:* Note.

#### **55. 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**

#### **56. 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 under D1.13 above proposed population numbers are to be provided by Goodman for each warehouse unit to assess if the proposed toilet facilities within the building are adequate to achieve compliance with Table F2.3 - details are to be provided at CC Application stage for assessment of Table F2.3 in this regard.

#### **57. 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 appear to be generally compliant 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.

#### **58. Clause F2.5 – Construction of Sanitary Compartments**

- (a) Other than in an early childhood centre sanitary compartments must have doors and partitions that separate adjacent compartments and extend –
  - (i) from floor level to the ceiling in the case of a unisex facility; or
  - (ii) a height of not less than 1.5m above the floor if primary school children are the principal users; or
  - (iii) 1.8 above the floor in all other cases.
- (b) The door to a fully enclosed sanitary compartment must-
  - (i) open outwards; or
  - (ii) slide; or
  - (iii) be readily removable from the outside of the sanitary compartment,

unless there is a clear space of at least 1.2m, measured in accordance with **Figure F2.5** between the closet pan within the sanitary compartment and the doorway.

*Comments:* Details demonstrating compliance are to be submitted with documentation for the CC Application.

### **LIGHT AND VENTILATION**

#### **59. 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.

#### **60. 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**

### **61. 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 warehouse buildings and all parts of the retail building. Design details and/or certification of design will be required to be submitted with the application for a Construction Certificate.

### **62. 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 warehouse buildings and all parts of the retail 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.

### **63. 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 warehouse buildings and all parts of the retail building. Details or certification that the proposed design complies with the requirements of **Part J3** will need to be submitted with the application for a Construction Certificate.

### **64. 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.

### **65. 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.

### **66. 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.

### **67. PART 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.

## **D. CONCLUSION**

This report contains an assessment of the referenced architectural documentation for the proposed warehouse development known as Port Botany Industrial Estate at Coal Pier Road & McPherson Street, Botany NSW against the Deemed-to-Satisfy Provisions of the BCA 2014.

Arising from the review, it is considered that the proposed development can readily achieve compliance with the relevant provisions of the BCA.