



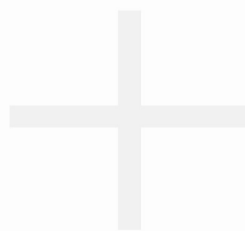
**BLACKETT  
MAGUIRE+  
GOLDSMITH**

**BCA Assessment Report**  
**Metcash State Distribution Centre**  
**Bungarribee Industrial Estate**  
**Huntingwood NSW**

**Goodman**

3 September 2010

Revision 1



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## CONTENTS

<b>A.</b>	<b>INTRODUCTION</b>	<b>3</b>
<b>A.1</b>	<b>BACKGROUND</b>	<b>3</b>
<b>A.2</b>	<b>AIM</b>	<b>3</b>
<b>A.3</b>	<b>PROJECT TEAM</b>	<b>3</b>
<b>A.4</b>	<b>DOCUMENTATION</b>	<b>3</b>
<b>A.5</b>	<b>LIMITATIONS &amp; EXCLUSIONS</b>	<b>4</b>
<b>A.6</b>	<b>TERMINOLOGY</b>	<b>4</b>
<b>B.</b>	<b>ASSESSMENT</b>	<b>5</b>
<b>C.</b>	<b>CONCLUSION</b>	<b>14</b>

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## **A. INTRODUCTION**

### **A.1 BACKGROUND**

Blackett Maguire + Goldsmith Pty Ltd (BM+G) have been commissioned by Goodman, to undertake a preliminary review of the proposed development, against the deemed-to-satisfy (DTS) provisions of the Building Code of Australia 2010 (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 the construction of a new distribution facility, comprising three buildings (for the purposes of our BCA Assessment), including the main warehouse building with ancillary five storey office (known as Building 1), the Fresh/Perishables Temperature Controlled Warehouse (known as Building 2 & Building 3 respectively) and the two level open-deck carpark building.

It is understood that the project is to be staged as follows:

- Stage 1 – The construction of part of Building 1 (Main Warehouse), including the warehouse to Grid A22, the construction of two storeys of the five level main office building, and the construction of the two storey carpark building.
- Stage 2 – Construction of Building 2 (Perishables Freezer and Coolroom), and construction of Building 3 from Grid F1 to F6.
- Stage 3 – Extension of Building 1 Warehouse to Grid A29 from A22 (Stage 1).
- Stage 4a - Construction of the third storey of the five level main office on the northern end of Building 1.
- Stage 4b - Construction of the fourth and fifth storeys of the main office on the northern end of Building 1.
- Stage 5 - Extension of Building 1 from Grid A29 to A33, extension of Building 2 from Grid P12 to Grid 14 and extension of Building 3 from Grid P6 to P10

### **A.2 AIM**

The aim of this report is to:

- Undertake an assessment of the proposed building against the deemed-to-satisfy provisions of the BCA.
- Identify any BCA compliance/fire safety issues that require attention/action for at the Construction Certificate Application stage.

### **A.3 PROJECT TEAM**

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

- Assessment - Dean Goldsmith (Director)
- Report Preparation – Dean Goldsmith (Director)
- Quality Assurance - Luke Oldfield (Senior Building Surveyor)

### **A.4 DOCUMENTATION**

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

- Building Code of Australia 2010 (BCA)
- Guide to the Building Code of Australia.
- Information/documentation provided by the Client



- Architectural plans prepared by Gray Puksand numbered A100/P1, A101/P1, A102/P1, A103/P1, A104/P1, A200/P1, A500/P1 and Architectural plans prepared by Arc numbered BIE-SITE-A000/1, BIE-SITE-A001/1, BIE-SITE-A002/1, BIE-WH2-A001/1, BIE-WH1-A003/1, BIE-SITE-A011/1, BIE-SITE-A012/1, BIE-WH2-A020/1, BIE-WH2-A021/1,
- Marked up amended staging plan provided by Brendon Quinn of Goodman.

## **A.5 LIMITATIONS & EXCLUSIONS**

The limitations and exclusions of this report are as follows:

- The following assessment is based upon a review of the architectural plans for the proposed building only – no site inspection or review of other consultant's drawings have been carried out at this stage.
- No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner should be satisfied that their obligations under the DDA have been addressed.

*Please note that whilst the BCA specifies a minimum standard of compliance with AS1428.1 and Part D3 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the Disability Discrimination Act 1992 (DDA). The DDA is a complaint based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the building owner should be satisfied that their obligations under the DDA have been addressed.*

- The Report does not address matters in relation to the following:
  - i. Local Government Act and Regulations.
  - ii. Occupational Health and Safety Act and Regulations.
  - iii. WorkCover Authority requirements.
  - iv. Water, drainage, gas, telecommunications and electricity supply authority requirements.
  - v. Disability Discrimination Act 1992.
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## **A.6 TERMINOLOGY**

*Building Code of Australia* - 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 NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

*Construction Certificate* - Building Approval issued by the Certifying Authority pursuant to Part 4A of the Environmental Planning & Assessment regulation 1979.

*Fire Resistance Level (FRL)* - means 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 adjoining 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.

*Occupation Certificate* - Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 4A of the Environmental Planning & Assessment regulation 1979.

*Open space* - means 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 Deemed-to-Satisfy 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 Deemed-to-Satisfy Provisions; or
- (c) a combination of (a) and (b).

*Sole occupancy unit* - means 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. ASSESSMENT**

The following is a summary of relevant areas of BCA Compliance that would need to be addressed to prior to the submission of the Construction Certificate Application.

In summary, the key building characteristics have been identified as follows:

BCA Classification:	<u>Building 1</u> : Class 5 (Offices) & Class 7b (Warehouse) <u>Buildings 2 &amp; 3</u> : Class 5 (Offices) & Class 7b (Warehouse) <u>Carpark Building</u> : Class 7a (Carpark)
Rise in Storeys:	<u>Building 1</u> : Five (5) <u>Building 2 &amp; 3</u> : Two (2) <u>Carpark Building</u> : One (1)
Type of Construction:	<u>Building 1</u> : Type A - Large Isolated Building <u>Building 2 &amp; 3</u> : Type C - Large Isolated Building <u>Carpark Building</u> : Type C
Effective Height:	<u>Building 1</u> : Greater than 12m & Less than 25m <u>Building 2 &amp; 3</u> : Less than 12m <u>Carpark Building</u> : Less than 12m



<p>Approx. Floor Area &amp; Volume:</p>	<p><u>Building 1:</u> Stage 1 Floor Area – 47,600m<sup>2</sup>; Stage 3 Floor Area 61,500m<sup>2</sup>; Stage 4a/4b Floor Area –67,850m<sup>2</sup>; Stage 5 Floor Area – 76,400m<sup>2</sup> and Volume : To be confirmed by Arc for each Stage.</p> <p><u>Building 2 &amp; 3:</u> Stage 2 Floor Area –24,500m<sup>2</sup>; Stage 5 Floor Area –31,200m<sup>2</sup>; and Volume : To be confirmed by Arc for each Stage.</p> <p><u>Carpark Building:</u> Not Applicable – refer to Clause C2.2 below</p> <p><i>Note: The floor areas of the awnings attached to both Building 1 and Building 2/3 have not been included in the calculations above. As such confirmation of the floor area and volume of the areas covered by the awnings on each building will be required.</i></p>
<p>Minimum Fire Service Required:</p> <p><i>Note: Refer to section E below for further details regarding applicable fire services requirements for each building.</i></p>	<p>Fire Hydrants</p> <p>Fire Hose Reels</p> <p>Sprinklers</p> <p>Portable Fire Extinguishers</p> <p>Smoke Exhaust</p> <p>Stretcher Lift (Building 1 only)</p> <p>Emergency Lighting</p> <p>Exit Signage</p>

Note: The Carpark Building consists of a two level carpark facility with a bridge across linking it with the Building 1 main office. The proposed carpark is open on all four sides and as such is defined as an “open-deck” carpark, pursuant to Clause A1.1. In this regard confirmation of the size of the ventilation openings will be required to be provided by Arc and/or Gray Puksand to confirm 50% openings are achieved on two opposite sides.

### BCA Section C – Fire Resistance

1. BCA cl. C1.10: Early Fire Hazard Properties: Floor, wall and ceiling linings are required to comply with the requirements under specification C1.10 and C1.10a. Certification of design will be required at CC Application stage and test certificates of the proposed linings will be required to be submitted prior to issue of the Occupation Certificate.
2. BCA cl. C1.11 Performance of external walls: Concrete external walls are required to be designed to minimize the likelihood of collapsing outwards in the event of a fire. Design certification will be required to be submitted by a Structural Engineer confirming compliance with Specification C1.11 at the CC Application stage.
3. BCA cl. C2.2 General Floor Area and Volume Limitations: The proposed floor area and volume of the two warehouse buildings exceeds the limitations for all Types of Construction under Table C2.2, and as such the both buildings will be defined as a “Large Isolated Building” - see comments under C2.3 and C2.4 below.



Note: The floor area and volume limitations of Table C2.2 are not applicable to an open deck carpark and as such the floor area and volume of the carpark building is not a compliance issue.

4. BCA cl. C2.3 Large Isolated Buildings: As the compartment size of Building 1 and Building 2 & 3 exceeds 18,000m<sup>2</sup> and 108,000m<sup>3</sup> and the max. ceiling height is greater than 12m both the provision of sprinklers and a smoke exhaust system (required under Table E2.2a and Specification E2.2b) apply to the proposed buildings – refer to comments under Section E below. In regards to Building 1 the provision of smoke exhaust in this building will need to be subject to an alternative solution to address Performance Requirement EP2.2. In addition, in relation to Building 2 & 3 it is assumed that the provisions of sprinklers (in relation to the design of the system) and the provisions of smoke exhaust in the temperature controlled cool rooms and freezer may be an issue that also require the provision of an alternative solution to address Performance Requirement EP2.2

Note 1: Buildings 2 and 3 are interconnected by the common battery recharge area and as such for the purposes of BCA Clause C2.3 they are considered as a single Large Isolated Building for the purposes of Clause C2.3 and the other relevant requirements of Sections C, D, and E of the BCA.

Note 2: Perimeter vehicular access is also required for Building 1 and Building 2/3 to satisfy the Large Isolated Building requirement which is outlined below in C2.4.

5. BCA cl. C2.4 Requirements for Open Spaces and Vehicular Access: A minimum unobstructed width of 6m is required around the building for fire brigades perimeter vehicular access with no part of its furthest boundary more than 18m from the building. Furthermore, vehicular access must have a load bearing capacity and unobstructed height to permit the operation and passage of fire brigade vehicles, and must provide reasonable pedestrian access from the vehicular access to the buildings.

The following compliance issues have been identified with respect to the proposed perimeter vehicular access serving the subject development:

- a) Vehicular access at the south-eastern corner of Building 2 (Stage 5) is provided via the adjoining driveway to the east of the building, however as the driveway is greater than 18m from the eastern external wall it's setback is non-compliant with the requirements of C2.4.
- b) Temporary access roads will be required along the southern end of Building 1 for both Stages 1 and 2, along with the southern end of Building 2 for Stage 2 and the northern end of Building 3 for Stage 2. As the future stages of these buildings are constructed the temporary access roads will need to be removed to facilitate the building works and hence for a period of time each of the buildings will not be provided with perimeter access to one side. Therefore, during the various construction phases the perimeter access to both Building 1 and Buildings 2 & 3 will be non-compliant for a period of time as follows: (i) during the construction phase of Stage 3 (Building 1 non-compliant – southern end) and (ii) construction phase of Stage 5 (Building 1 – southern end and Building 2/3 – southern and northern ends will be non-compliant).
- c) Perimeter Vehicular Access will be provided in the north-west corner of Building 1 will pass directly under the pedestrian bridge connecting the carpark building to the main office entry. The provision of this bridge over the vehicular accessway is not compliant with the requirements of C2.4(a)(iv).



It will be necessary for an alternative solution to be prepared to address these non-compliance issues, in order to demonstrate compliance with Performance Requirement CP9.

6. BCA cl. C2.8 Separation of Classifications in the Same Storey: The different classifications within both Building 1 and Building 2 & 3 (ie. Class 7b Warehouse and Class 5 Office) are required to be separated by a compliant fire walls or the entire storey is required to be constructed with the higher FRL's that are applicable to the Class 7b components. Details of the proposed method of compliance in this regard are to be submitted with the CC Application.

Note: Consideration may also be given to an alternative solution in relation to this requirement, whereby the relevant Performance Requirements are CP1 and CP2 – refer to comments under Spec. C1.1 below.

7. BCA cl. C2.10 Separation of Lift Shafts: As the proposed lifts in the Building 1 Main Office connect more than 3 storeys they are required to be enclosed in fire rated shafts per C2.10 – the required FRL's for the lift shafts are detailed below under Spec. C1.1. In addition openings in the lift shaft for lift landing doors are to be protected with fire rated doors in accordance with Clause C3.10.
8. BCA cl. C2.12 Separation of Equipment: Any emergency generators, central smoke control plant, lift motor equipment, boilers of battery storage enclosures are required to be fire separated from the remainder of the buildings by construction having a minimum FRL of 120/120/120.
9. BCA cl. C2.13 Electricity Supply Systems: Any electrical substations or switchrooms that sustain emergency equipment are required to be fire separated from the remainder of the building by construction having a minimum FRL of 120/120/120.
10. BCA Spec C1.1 Fire Resisting Construction: Building 2/3 and the carpark building are of Type C Construction and all external walls are greater than 3 metres from a fire source feature, hence no fire ratings are required pursuant to Table 5 and 5.2 of Spec. C1.1.

Building 1 is of Type A construction due to the rise in storeys of the main office (5 levels) and as such in accordance with Table 3 of Spec. C1.1 four hour fire ratings are required to be applied to the building structure (due to the Class 7b classification) – see FRL requirements listed in the extract below. In this regard it is understood that two potential alternative solutions will require consideration including (i) fire rating to the internal columns in the warehouse (required to be 60/-/- FRL) and to the columns incorporated in the external walls of the warehouse (required to be 240/-/-); and (ii) Potential reduction of FRL's to the office structure despite the lack of a fire wall between the office and the warehouse.

Note 1: Any such alternative solutions proposed will need to address compliance with Performance Requirements CP1 and CP2.

Note 2: The following FRL's apply to Building 1 under the Type A provisions of Spec. C1.1 Table 3:

#### **Class 7b - Warehouse**

##### **External Load-bearing Walls**

3m or more from FSF

240/180/90

##### **External Non Load-bearing Walls**

3m or more from FSF

No FRL

##### **Fire Walls**

240/240/240



<b>Load-Bearing Internal Walls/Columns/Beams</b>	240/-/-
<b>Lift and Stair Shafts:</b>	240/120/120
<b>Service Shafts:</b>	240/120/120
<b>Floors:</b>	240/240/240
<b>Roof:</b>	240/90/60

**Class 5 - Office** (If separated from the Warehouse Areas by a compliant Fire Wall)

**External Load-bearing Walls**

3m or more from FSF 120/60/30

**External Non Load-bearing Walls**

3m or more from FSF No FRL

**Fire Walls**

120/120/120

**Load-bearing Internal Walls/Columns/Beams**

120/-/-

**Lift and Stair Shafts:**

120/120/120

**Service Shafts:**

120/90/90

**Floors:**

120/120/120

**Roof:**

120/60/30

*Extract Above: Table 3 of Spec. C1.1*

**BCA Section D - Access and Egress**

11. BCA cl. D1.4 Exit Travel Distance: The proposed buildings do not comply with the 40m exit travel distance requirement under this clause. In this regard the following non-compliances are noted:

- Building 1 (Stages 1, 3, & 5 - Warehouse) - Maximum exit travel distance measured from the central area of the Warehouse in each stage is approx. 110m.
- Building 1 (Stage 1 - Forklift Recharge Area) - Maximum exit travel distance of 45m.
- Building 1 (Stage 1 - Mens Locker Room) - Maximum exit travel distance of 44m.
- Building 1 (Dispatch Offices x2) - Level 1 maximum exit travel distances to a single exit of 24.5m
- Building 1 (Stages 1, 4A & 4B - Main Office) - Complies on an open plan basis (on all 5 levels) - proposed fitout will require further assessment.
- Carpark Building (Ground & Rooftop Levels - Stage 1) - Maximum worst case exit travel distances of 70m (dependant upon exact position of exits it may be reduced to approx. 55m).
- Building 2 (Stage 2 - Warehouse) - Maximum exit travel distances of 70m in freezer.
- Building 2 (Stage 2 - Perishables Offices Ground Floor) - Maximum exit travel distances of 53m and distance to a point of choice to alternative exits of 22m.
- Building 2 (Stage 5) - Maximum exit travel distances of 70m in freezer.
- Building 2 (Stage 2 - Forklift Recharge Area) - Maximum exit travel distances of 55m.
- Building 3 (Stage 2 - Warehouse Fresh 0 to 4 degrees) - Maximum exit travel distances of 60m.
- Building 3 (Stage 2 - Warehouse Fresh 10-14 degrees) - Maximum exit travel distances of 43m.



- Building 3 (Stage 2 – Warehouse Fresh Staging Area) – Maximum exit travel distances of 57m.
- Building 3 (Stage 2 – Fresh Offices Ground Floor Male Change Room) – maximum exit travel distances of 43m.
- Building 3 (Stage 5 - Warehouse Fresh) – Maximum exit travel distances of 60m.

Note 1: The above max. exit travel distances takes into consideration the potential racking layout in the warehouse area of each building, however, a final assessment will be required upon confirmation of final racking layout.

Note 2: An Alternative Solution is required to address the above non-compliances. In this regard the relevant Performance Requirements are DP4 and EP2.2.

12. BCA cl. D1.5 Distances Between Alternative Exits: The proposed buildings also do not comply with the DTS maximum 60m distance required between alternative exits under this clause. The maximum distance between alternative exits was measured in each portion of the building as follows:

- Building 1 (Stages 1, 3 & 5 - Warehouse) - Maximum distance between alternative exits in each stage is approx. 220m.
- Building 1 (Stage 1 - Forklift Recharge Area) – Maximum distance between alternative exits of 80m.
- Building 1 (Stage 1 - Mens Locker Room) – Maximum distance between alternative exits of 115m.
- Building 1 (Stages 1, 4A & 4B - Main Office) – Complies on an open plan basis (on all 5 levels) – proposed fitout will require further assessment.
- Carpark Building (Ground & Rooftop Levels - Stage 1) – Maximum distance between alternative exits of 95m (dependant upon exact position of exits it may be reduced on the ground level).
- Building 2 (Stage 2 – Perishables Warehouse) – Maximum distance between alternative exits of 140m in freezer.
- Building 2 (Stage 5) – Maximum distance between alternative exits of 140m in freezer.
- Building 2 (Stage 2 – Forklift Recharge Area) – Maximum distance between alternative exits of 110m.
- Building 3 (Stage 2 – Warehouse Fresh 0 to 4 degrees) – Maximum distance between alternative exits of 115m.
- Building 3 (Stage 2 – Warehouse Fresh 10-14 degrees) – Maximum distance between alternative exits of 80m.
- Building 3 (Stage 2 – Warehouse Fresh Staging Area) – Maximum distance between alternative exits of 95m.
- Building 3 (Stage 5 - Warehouse Fresh) – Maximum distance between alternative exits of 115m.

Note 1: The above max. distances take into consideration the potential racking layout in the warehouse area of each building, however, a final assessment will be required upon confirmation of final racking layout

Note 2: Similarly to D1.4, an alternative solution is required to address this issue and the relevant Performance Requirements are DP4 and EP2.2.



13. BCA cl. D1.7 Travel via Fire Isolated Exits – The discharge of the eastern and central fire stairs from the Main Office in Building 1 currently do not discharge into open space and as such it will be necessary to modify the ground level design to incorporate fire isolated passageways or a suitably prepare alternative solution will be required for the proposed configuration – in this regard the relevant Performance Requirement is DP5 and EP2.2.

14. BCA cl. D1.6 Dimensions of Exits: The minimum clear height through all exit stairs is required to be a minimum of 2m. In order to determine compliance with D1.6 for each building confirmation of staff numbers (per Building & per Stage) are required to be provided by Metcash with the Construction Certificate Application to confirm if adequate exit width is available from each section of the three buildings for each stage of the project.

Note: Based upon the use of each area and the numbers of exits provided compliance with D1.6 appears to be readily achievable.

15. BCA cl. D1.10 Discharge from Exits: Suitable barriers must be installed to prevent exits from being blocked by vehicles and/or storage.

16. BCA Part D2 Construction of Exits: The stair treads and risers, stair landings, door thresholds, balustrades and handrails in each building are required to comply with this part.

Note: Further details will be required prior to issue of the Construction Certificate demonstrating compliance with the above.

17. BCA cl. D2.21 Operation of latch: A door in a required exit, forming part of a required exit or in the 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 hand downward action or pushing action on a single device which is located between 900mm and 1,100mm from the floor.

18. BCA Part D3: Access is required from the allotment boundary and from the carpark building to the principal entry of the main office in Building 1 and to the main entry of Buildings 2 & 3 in accordance with AS1428.1.

Internal access is also required to comply within the each level of the main office, and with the ground level offices in Buildings 2 & 3 - including to the disabled toilet facilities and within the staff amenity areas in each building.

One (1) disabled car parking spaces is required for every 100 carparking spaces provided. Accessible car spaces are to be designed to comply with AS 2890.1.

Signage, including braille & tactile signage where appropriate, is required to comply with BCA clause D3.6 and AS 1428.1 for sanitary facilities and disabled car parking spaces.

Tactile ground surface indicators are required to access ramps and stairways used by the public. Indicators must be Type B and installed in accordance with AS 1428.4.

In addition to the above, given the provisions of the Disability Discrimination Act, it is recommended that an access consultant be engaged to provide further advice in this regard.



## BCA Section E – Services and Equipment

19. Part E Services and Equipment: The following fire safety measures are required for the each building as referenced below:

### Building 1 (Stages 1, 3, 4a, 4b & 5)

- Fire hydrant systems	BCA Clause E1.3 & AS 2419.1-2005
- Hose reel system	BCA Clause E1.4 & AS 2441-2005
- Automatic fire suppression system (sprinklers)	BCA Spec. E1.5 and AS 2118.1-1999
- Portable fire extinguishers	BCA Clause E1.6 and AS 2444-2001
- Smoke Exhaust System <sup>1</sup>	BCA Table E2.2a & Spec. E2.2b and AS/NZS 1668.1-1998
- Stretcher Lift	BCA Clause E3.2
- Emergency Lighting	BCA Clauses E4.2/E4.4 & AS/NZS 2293.1-2005
- Exit Signs	BCA Clauses E4.5, NSW E4.6, E4.8 and AS/NZS 2293.1-2005

### Building 2 & 3 (Stages 2 & 5)

- Fire hydrant systems	BCA Clause E1.3 & AS 2419.1-2005
- Hose reel system	BCA Clause E1.4 & AS 2441-2005
- Automatic fire suppression system (sprinklers)	BCA Spec. E1.5 and AS 2118.1-1999
- Portable fire extinguishers	BCA Clause E1.6 and AS 2444-2001
- Smoke Exhaust System <sup>1</sup>	BCA Clause E2.2a & Spec. E2.2b and AS/NZS 1668.1-1998
- Emergency Lighting	BCA Clauses E4.2/E4.4 & AS/NZS 2293.1-2005
- Exit Signs	BCA Clauses E4.5, NSW E4.6, E4.8 and AS/NZS 2293.1-2005

### Carpark Building (Stage 1)

- Fire hydrant systems	BCA Clause E1.3 & AS 2419.1-2005
- Hose reel system	BCA Clause E1.4 & AS 2441-2005



- Automatic fire suppression system (sprinklers) <sup>2</sup>	BCA Spec. E1.5 and AS 2118.1-1999
- Portable fire extinguishers	BCA Clause E1.6 and AS 2444-2001
- Emergency Lighting	BCA Clauses E4.2/E4.4 & AS/NZS 2293.1-2005
- Exit Signs	BCA Clauses E4.5, NSW E4.6, E4.8 and AS/NZS 2293.1-2005

*Notes:*

1. It is understood that a Fire Safety Engineer has been engaged to address the provision of smoke hazard management to the two Large Isolated Buildings, whilst taking into consideration the requirements of the NSW Fire Brigades. The relevant Performance Requirement to this alternative solution is EP2.2.
  2. The provision of sprinklers to the open deck carpark has been referenced due to the connection of the carpark to Building 1 via the pedestrian bridge. If sprinklers are not proposed to be installed in the ground level of the carpark building, it will be necessary to obtain input from a fire services consultant on the relevant separation requirements between sprinklered and non-sprinklered areas pursuant to AS 2118.1 and BCA Spec. E1.5.
  3. The standards of performances nominated above may vary as a result of the proposed fire engineered alternative solutions.
  4. The above is not a Fire Safety Schedule for the purposes of cl. 168 of the Environmental Planning & Assessment Reg. 2000.
20. BCA cl.E1.4 Hydrants – It is noted that the proposed three buildings will be served by a single hydrant system with multiple ring mains to the two Large Isolated Buildings. The configuration of this system will need to be detailed in the FEB and confirmation will be required if an AS 2419.1 compliant system is able to be provided for a site of this size – input from a fire services consultant is required in this regard to confirm whether an alternative solution will be necessary. It is also noted that the ring mains that will be provided to both Building 1 and Building 2 & 3 will be configured to suit the completed Stage 5 of the development and as such consideration should be given by the Hydraulic Engineer to any potential coverage issues this may create for the earlier completed stages of the projects, ie. Stages 1 & 3 for Building 1 and Stage 2 for Buildings 2 & 3.
21. BCA Table E2.2a Smoke Hazard Management General Requirements – As indicated above the provision of smoke exhaust in the various parts of the two Large Isolated Buildings will require an alternative solution as it is assumed DTS compliant systems are not likely to be provided – in this regard the relevant Performance Requirement is E2.2b.
22. BCA cl. E1.8 Fire Control Centre – Due to their size, both of the two Large Isolated Buildings require a fire control centre under Clause E1.8 in isolation. However, it is noted that a single fire control centre for the site will be utilized in conjunction with the 24hr manned Guard House. As such an alternative solution will be required for the proposed single Fire Control Centre arrangement – the relevant Performance Requirement in this regard is EP1.6.



23. BCA cl. E1.10 Special Hazards: Consideration will need to be given to any additional fire services requirements that are applicable to the proposed buildings based upon the planned dangerous goods storage in Building 1. Advice from the fire safety engineer is required in this regard.

#### **BCA Section F - Health & Amenity**

24. BCA Part F3 Sanitary and other Facilities: Staff Population numbers (per Building & per Stage) will be required to be provided by Metcash in order to confirm if the sanitary facilities proposed achieve compliance with Table F2.3.

In addition, accessible toilet facilities will be required within both Building 1 and Buildings 2 & 3 in accordance with the requirements of Table F2.4 - details confirming that the design of each facility is compliant with AS 1428.1 are to be submitted with the CC Application.

Note: In accordance with F2.5 the construction of sanitary compartments must have doors and partitions 1.8 metres above floor level and doors to fully enclosed sanitary compartments must be removable from the outside where they swing inwards.

25. BCA Part F4 Light and Ventilation: All artificial lighting must comply with AS 1680. Mechanical ventilation must comply with AS 1668.2.

26. Section J - Energy Efficiency: The energy efficiency provisions of Section J are applicable to all three Buildings (including the carpark), and as such, a report will be required to be submitted prior to issue of the Construction Certificate which details how compliance is being achieved.

In this regard Parts J1 - Building Fabric, J2 - External Glazing, J3 - Building Sealing and J5 - Air Conditioning and Mechanical Ventilation are only applicable to the office components of the Building 1 and Buildings 2 & 3. Part J6 - Artificial Lighting and Power, and Part J7 - Hot water supply, apply to all buildings.

#### **C. CONCLUSION**

Based upon the above comments and our assessment of the preliminary drawings it is considered that compliance with the relevant DTS provisions and Performance Requirements identified within this report are readily achievable, however full details demonstrating compliance are required to be submitted with the CC Application.

Signed

Dean Goldsmith  
**Director - Blackett Maguire + Goldsmith**