BLACKETT MAGUIRE+ GOLDSMITH

30 October 2013

Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Sir / Madam,

Re: Proposed modifications for additional Viewing Room to Warehouse 1, Bungarribee Industrial Estate, Huntingwood, approval MP10-0140.

Enclosed are copies of the BCA Assessments for both the Metcash Base Building and the Project Mustang Extension works applicable to Warehouse 1 at the Metcash facility, Bungarribee Industrial Estate, Huntingwood that is the subject of the proposed modifications.

The following BCA clauses shall be affected by the proposed additional viewing room within the warehouse. Below is the summary of the applicable requirements of the clauses that relate to the proposed new viewing room. All of the other requirements of the attached BCA reports remain unaffected by the proposed modifications.

1. BCA Clause C1.10: Early Fire Hazard Properties

Floor, wall and ceiling linings are required to comply with the requirements under specification C1.10. 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 Clause D1.4: Exit Travel Distance

The proposed viewing room will not result in any non-compliance with regards to egress distances. However, comment is required from the Base Building Fire Engineer (Rawfire) confirming proposed modifications do not impact upon the recommendations of the Fire Engineering report for both the Base Building and Project Mustang.

3. BCA Clause D1.5: Distances Between Alternative Exits

The proposed viewing room does not impact upon the distance between alternative exits. However, comment is required from the Base Building Fire Engineer (Rawfire) confirming proposed modifications do not impact upon the recommendations of the Fire Engineering report for both the Base Building and Project Mustang.

4. BCA Part D3: Access for People with Disabilities

Where the areas associated with the new addition would be deemed to be inappropriate for people with a disability due to the particular purpose for which the area is used or would pose a health or safety risk to people with a disability, access would not be required from the main entry to the new addition. Details are to be provided by Metcash to the Access Consultant for review and comment. A report from an Access Consultant in this regard is required at CC Application stage.

5. Clause E1.3: Hydrants

The new viewing room is required to be provided with Hydrant coverage complying with AS 2419.1 – 2005. Details and design certification is to be provided by the Hydraulic Consultant for review and comment as part of the Construction Certificate assessment.

Note 1: External Hydrants are to be located not less than 10 metres from the external walls of the subject building or within 10 metres of an electrical substation. In addition, an external Hydrant may be located against the external wall of the building and protected by a radiant heat shield with an FRL of not less than 90/90/90 for a distance of 2 metres either side of the outlets and 3 metres above the external ground level. Please note

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Hydrant located under awnings will be considered as an internal Hydrant having regards to coverage.

6. Clause E1.4: Fire Hose Reels

The buildings are required to be served by Fire Hose Reels complying with this clause and AS 2441 – 2005. Details and design certification is to be provided by the Hydraulic Consultant for review and comment as part of the Construction Certificate assessment.

Note 1: Hose Reels are required to be located within 4 metres of an exit.

7. Clause E1.5: Sprinklers

Having regards to our comments under C2.3 in the BCA Assessment Report, the building requires sprinkler protection under the Large Isolated Building provisions. As such, the sprinkler system is required to be designed in accordance with BCA Specification E1.5 and AS 2118.1 – 1999.

8. Clauses E4.2 & E4.5: Exit Signs and Emergency Lighting

Exit Signs and Emergency Lighting are required to be provided in accordance with AS 2293.1 – 2005 throughout the new portion of the building.

Note: All exit signs must be located not higher than 2.7 metres above floor level

9. Part F4: Light and Ventilation

Artificial lighting is to be provided in the building in accordance with AS/NZS 1680.0. Certification will be required from an Electrical Consultant at CC Application stage and from the Contractor prior to the issue of the Occupation Certificate.

The building is required to be ventilated in accordance with AS 1668.2. Certification will be required from a Mechanical Consultant at CC Application stage and from the Contractor prior to the issue of the Occupation Certificate.

10. Section J – Energy Efficiency

The viewing room is required to satisfy the Energy Efficiency requirements under this section. We understand that the proposed addition will not be a Conditioned Space and therefore the requirements Parts J1 (Building Fabric), J2 (External Glazing), J3 (Building Sealing), and J5 (Air-conditioning & Ventilation Systems) will not apply.

In addition, details and design certification is to be provided from the Electrical and Hydraulic Consultants in relation to Part J6 (Artificial Lighting and Power) and Part J7 (Hot Water Supply).

Note: If the above assumptions regarding conditioned space are incorrect, Parts J1, J2, J3 & J5 will require certification at CC Stage.

In conclusion, it is to be noted that the proposed works do not significantly alter the assessment and thus; no further recommendations have been made to the previous report *'Revision 1'* dated *15th November 2012 and base building BCA Report, 'Revision 4' dated 20 October 2011.*

If you have any further questions on the matter, do not hesitate to contact me.

Kind Regards

Dean Goldsmith
Director
Blackett Maguire + Goldsmith Pty Ltd

Appendix 1: Base Building BCA Assessment

BCA Assessment Report

Metcash State Distribution Centre
Bungarribee Industrial Estate
Huntingwood NSW

Goodman

20 October 2011

Revision 4

CONTENTS

REPORT STATUS				
DATE	**REVISION**	**STATUS**	**AUTHOR**	**REVIEWED**
17.08.2010	0	Draft issued to client for review	DG	LO
03.09.2010	1	Final Report for submission with Part 3A	DG	LO
31.01.2011	2	Additional BCA Assessment of Stage 1 Arch. Drawings	DG	LO
04.05.2011	3	Final Assessment	DG	LO
20.10.2011	4	Correction of Error in D1.4 Assessment	DG	LO

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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 Giles Tribe 100/H, 200/L, 201/A, 202/A, 250/K, 251/H, 252/D, 280/B, 281/A, 300/H, 301/J, 302/C, 303/G, 304/A, 400/H, 401/G, 402/G, 403/E, 410/D, 411/C, 412/A, 413/B, 450/F, 452/F, 460/C, 461/B, 900/C, 901/C, 902/D, 910/A.
- 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:	Building 1: Class 5 (Offices) & Class 7b (Warehouse) Buildings 2 & 3: Class 5 (Offices) & Class 7b (Warehouse) Carpark Building: Class 7a (Carpark)
Rise in Storeys:	Building 1: Five (5) Building 2 & 3: Two (2) Carpark Building: One (1)
Type of Construction:	Building 1: Type A (Main Office) and Type C (Warehouse) – Large Isolated Building – refer to C1.4 below. Building 2 & 3: Type C – Large Isolated Building Carpark Building: Type C

Effective Height:	Building 1: Greater than 12m & Less than 25m Building 2 & 3: Less than 12m Carpark Building: Less than 12m
Approx. Floor Area & Volume:	Building 1: Stage 1 Floor Area – 47,600m^2; Stage 3 Floor Area 61,500m^2; Stage 4a/4b Floor Area –67,850m^2; Stage 5 Floor Area – 76,400m^{2}and Volume : To be confirmed by Arch. for each Stage. Building 2 & 3: Stage 2 Floor Area –24,500m^2; Stage 5 Floor Area –31,200m^2; and Volume : To be confirmed by Arch. for each Stage. Carpark Building: Not Applicable – refer to Clause C2.2 below *Note: The floor areas of the awnings attached to both Building 1 and Building 2/3 have not been included in the calculations above.*
Minimum Fire Service Required: *Note: Refer to section E below for further details regarding applicable fire services requirements for each building.*	Fire Hydrants Fire Hose Reels Sprinklers Portable Fire Extinguishers Smoke Exhaust Stretcher Lift (Building 1 only) Emergency Lighting Exit Signage

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 Giles Tribe at Construction Certificate Application No.2 stage to confirm 50% openings are achieved on two opposite sides.

BCA Section C – Fire Resistance

11. BCA cl. C1.4 Mixed Types of Construction: It is understood that an alternative solution has been proposed in relation to the design of the fire wall separating the office areas and the warehouse areas in Building 1 in relation to the provisions of C1.4 to allow for the warehouse component to be assessed as Type C construction and the Main Office Building to be assessed as Type A construction.

12. 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.

13. 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.

14. 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.

15. BCA cl. C2.3 Large Isolated Buildings: As the compartment size of Building 1 and Building 2 & 3 exceeds 18,000m² and 108,000m³ 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.

16. 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) Vehicular access at the southern end of Building 2 (between Stages 3 and 4) is provided via the driveway to the south of the building, however as the driveway is greater than 18m from the southern external wall ()approx. 22m) it's setback is non-compliant with the requirements of C2.4.

d) Vehicular Access on the western side of Building 2 will be reduced in width to 5.2m at the point in which the egress stairs discharge from the building, which is non-compliant with the minimum 6m clear width requirements of C2.4.

e) 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).

f) Vehicular Access on the southern side of Building 2 will be reduced in width to 5.5m over a 30m section of the driveway, which is non-compliant with the minimum 6m clear width requirements of C2.4.

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.

17. 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.

18. 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.

19. 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.

20. 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.

21. BCA Spec C1.1 Fire Resisting Construction: Building 1 Warehsouse, 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 (Main Office Building) 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 – see FRL requirements listed in the extract below.

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 (Main Office Building) under the Type A provisions of Spec. C1.1 Table 3:

Class 5 - Office
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

22. 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 – Metcash Workshop & IGAD Ullage) Maximum distance to a single exit of 25m.
- Building 1 (Stage 1 - Mens Locker Room) – Maximum exit travel distance of 45m and maximum distance to a point of choice to alternative exits of 25m.
- Building 1 (Dispatch Offices x2) – Level 1 maximum exit travel distances to a single exit of 24.5m on balcony and 22m within office.
- Building 1 (Stages 1, 4A & 4B - Main Office) – Level 1 to 5 complies on an open plan basis (on all 5 levels) – proposed fitout will require further assessment. On the ground level the maximum exit travel distance from the male toilets is 42m and the maximum exit travel distance from the Kitchen store room in the Cafeteria area is 42m.
- Carpark Building (Ground & Rooftop Levels - Stage 1) – Maximum worst case exit travel distances of 75m on Level 1 and 55m on the ground floor level.
- Building 2 (Stage 2 - Warehouse) – Maximum exit travel distances of 70m in freezer.
- 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 55m.
- Building 3 (Stage 2 – Warehouse Fresh Staging Area) – Maximum exit travel distances of 50m.
- Building 3 (Stage 2 – Perishables/Fresh Offices First Floor Outdoor Terrace) – maximum distances to a point of choice to alternative exits of 23m.
- 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.

23. 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 90m.
- Building 1 (Stage 1 - Mens Locker Room) – Maximum distance between alternative exits of 70m.
- Building 1 (Stage 1 - Kitchen) – Maximum distance between alternative exits of 75m.
- 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.

24. BCA cl. D1.7 Travel via Fire Isolated Exits – The discharge of the eastern (Stair 4) and central (Stair 3) 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.

25. 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.

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

27. 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.

28. 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.

29. 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

30. 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[1]	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[1]	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)[2]	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 the Fire Safety Engineer has addressed the provision of smoke hazard management to the two Large Isolated Buildings, via an Alternative Solution.
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.

31. BCA cl.E1.3 Fire Hose Reels: It is noted that an alternative solution is included in the FER for use of 50m hose reels in lieu of the standard AS 2444 length hose reels within Warehouse 2/3.

32. 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 has been detailed in the FER and certification of the design will be required confirming an AS 2419.1 compliant system is able to be provided.

33. 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 has been addressed via an alternative solution – in this regard the relevant Performance Requirement is E2.2b.

34. 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 and this is documented in the FER.

35. 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.

BCA Section F – Health & Amenity

36. BCA Part F3 Sanitary and other Facilities: Staff Population numbers (per Building & per Stage) provided by Metcash have been utilised to confirm that the sanitary facilities proposed achieve compliance with Table F2.3.

	Closet Pans		Urinals		Washbasins		Complies
	Required	Proposed	Required	Proposed	Required	Proposed	Yes/No
Building 1 (Main Office Building) – 120 persons (50 Males / 70 Females)							
Male	3	12	2	4	3	10	Yes
Female	5	12	N/A	N/A	3	10	Yes
Building 1 (Warehouse incl. Dock Offices) – 355 persons (280 Males / 75 Females)							
Male	14	14	7	14	4	16	Yes
Female	5	10	N/A	N/A	4	14	Yes
Building 2/3 (Warehouse incl. Offices) – 144 persons (120 Males / 24 Females)							
Male	6	6	4	15	6	7	Yes
Female	2	4	N/A	N/A	2	4	Yes

In addition, accessible toilet facilities are provided 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.

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

38. 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.

Appendix 2: Project Mustang Extension Assessment

BLACKETT MAGUIRE+ GOLDSMITH

BCA ASSESSMENT REPORT

Metcash Distribution Centre
Bungarribee Industrial Estate Huntingwood NSW

PROJECT MUSTANG

Prepared for: Goodman

Project No. 120462

15 November 2012

Revision 1

CONTENTS

REPORT STATUS				
DATE	**REVISION**	**STATUS**	**AUTHOR**	**REVIEWED**
15.08.2012	0	Preliminary BCA Assessment for review by Design Team	LO	DG
15.11.2012	1	BCA Report for DA submission	DG	TH

Prepared by:

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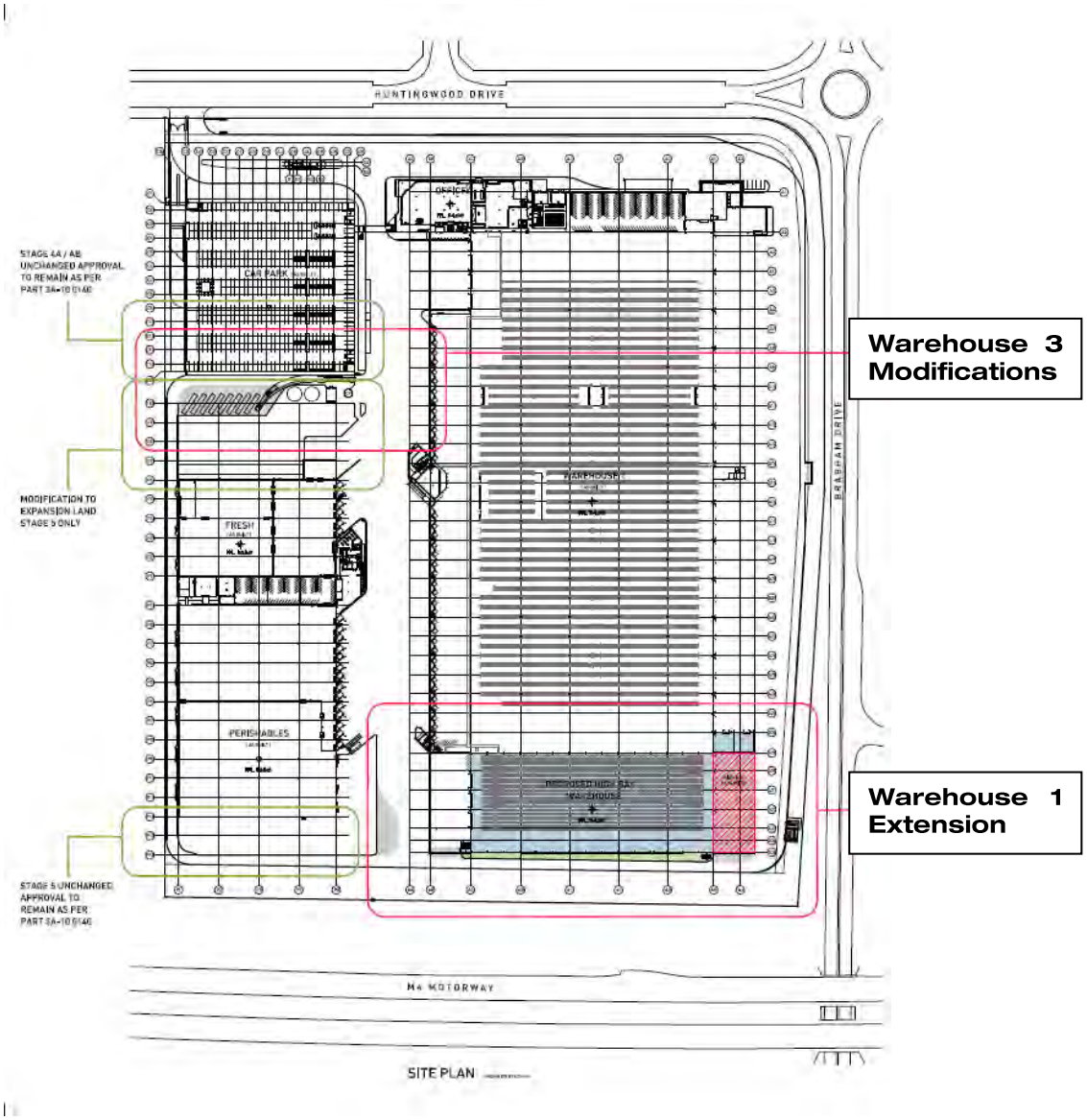
a. Introduction

A.1 Background

Blackett Maguire + Goldsmith Pty Ltd (BM+G) have been commissioned by Goodman Property Services, to undertake a preliminary review of the proposed development, against the deemed-to-satisfy (DTS) provisions of the Building Code of Australia 2012 (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 warehouse addition to the South of the existing Warehouse 1 building, new substation/switchroom structure and an external modification to the Stage 5 Expansion of Warehouse 3. The addition to Warehouse 1 is approximately 8,900m^2 of additional Warehouse floor area. We understand that the proposal includes a high bay automated storage system, that contains stairs and multiple maintenance access platform levels up to a height of 22.34m. It is noted from advice from Metcash Representatives that these maintenance platforms are an open grid style structure that will not be occupied at any time except in infrequent circumstances where breakdowns or irregular serving occurs.

Figure 1 – Site Plan detailing the extent of the warehouse addition.



A.2 Aim

The aim of this report is to:

- Undertake an assessment of the proposed warehouse addition 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:

- Report Preparation – - Dean Goldsmith (Director)
- Quality Assurance – Tony Heaslip (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 2012 (BCA)
- Guide to the Building Code of Australia.
- Information/documentation provided by the Client
- Architectural plan prepared by Giles Tribe Architects
  Drawing No. 12051 01(C), 12051 02(C), 12051 03(C), 12051 04(C), 12051 05(C), 12051 06(C), 12051 06a(A), 12051 07(C),12051 08(C), 12051 09(C), 12051 10(C), and 12051 11(C) dated 24 October 2012

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.
- 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.
- Blackett Maguire + Goldsmith Pty Ltd do not guarantee acceptance of this report by Local Council, NSW Fire Brigades or other approval authorities.
- No part of this document may be reproduced in any form or by any means without written permission from Blackett Maguire + Goldsmith Pty Ltd. This report is based solely on client instructions, and therefore should not be used by any third party without prior knowledge of such instructions.
- In relation to the automated racking system proposed as part of the Warehouse 1 extension our assessment report below is based upon verbal advice from Sean Wildblood (Metcash Representative) during meetings on 20.9.12 and 21.08.12 in relation to the proposed nature of use, occupancy and platform design. In this regard we have been advised that the automated area will be fully fenced, will be in-accessible to staff at all times during operation of the facility, and will only be access infrequently for maintenance under strictly controlled conditions. Because of the nature of this enclosure/equipment we have not applied our BCA assessment to the internal parts of the enclosure as the BCA provisions applicable to the base building warehouse use are not considered to be appropriate to apply to such a unique structure within a building.

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 prior to the submission of the Construction Certificate Application.

In summary, the key building characteristics have been identified as follows for the proposed warehouse addition:

BCA Classification:	Class 7b (Warehouse), Class 5 (Level 1 Office/Viewing Room) & Class 10a (Switch Room & Substation Building)
Rise in Storeys:	Two (2)
Type of Construction:	Type C (Large Isolated Building)
Effective Height:	Less than 12 metres
Floor Area/Volume:	Existing Building: 76,400m^2 and Approx. 915,000m^3 New Addition: 9,285m^2 and Approx. 235,000m^3 **Total:** 85,685m^2 and Approx. 1,150,000m^3
Climate Zone	Zone 6

BCA SECTION C – FIRE RESISTANCE

39. BCA Clause C1.2 – Rise in Storeys

As detailed above the automated racking structure to be constructed within the Warehouse 1 extension will be approx. 22.34m in height and will contain a number of access platforms (and ancillary stairs) for the servicing of the picking equipment for irregular maintenance and/or breakdowns. These platforms are to be constructed of an open steel mesh type material, will not be occupied at any time (other than as detailed above), and will contain no fuel load. Therefore, these platforms do not meet the definition of a floor pursuant to A1.1 and have not been considered in the assessment of the Rise in Storeys of the building (and subsequent designation of Type C Construction).

40. BCA Clause C1.10: Early Fire Hazard Properties

Floor, wall and ceiling linings are required to comply with the requirements under specification C1.10. 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.

41. BCA Clause 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.

42. BCA Clause C2.2: General Floor Area and Volume Limitations

The proposed floor area and volume of the existing building, including the proposed addition, exceeds the limitations for all Types of Construction under Table C2.2, and as such the building, will be defined as a "Large Isolated Building" - see comments under C2.3 and C2.4 below.

43. BCA Clause C2.3: Large Isolated Buildings

As discussed under C2.2, the building is deemed to be a Large Isolated Building and therefore there are no limitations on fire compartment size. We have noted that the new addition will include an addition 9,265m^2 of Floor Area and approximately 235,000m^3 of Volume to the existing building. It should be noted that the height of the new addition is 26.845 metres above Ground Floor level.

Given the compartment size of existing building, including the proposed addition exceeds 18,000m² and 108,000m³ and the maximum ceiling height is greater than 12m both the provision of sprinklers, complying with Specification E1.5 and AS 2118.1 – 1999 and a smoke exhaust system (required under Table E2.2a and Specification E2.2b) will apply – refer to comments under Section E below.

Note 1: We understand that the provision for smoke exhaust will be subject to an Alternative Solution to address Performance Requirement EP2.2 in line with the base building Fire Engineering Report.

Note 2: Perimeter vehicular access is also required to be provided to the new addition in accordance with C2.4 below.

44. BCA Clause C2.4: Requirements for Open Spaces and Vehicular Access

A roadway for emergency vehicles with a minimum unobstructed width of 6m is required around the building 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.

Details are to be provided with the Construction Certificate application confirming the width of the perimeter roadway and the setback from the proposed addition.

Note 1: The perimeter access road in the South East corner of the new addition appears to be greater than 18 metres from the building. As such, either design changes or modifications to the Base Building Fire Engineered Alternative Solution addressing the Performance Requirement CP9 is required in consultation with Fire & Rescue NSW.

Note 2: The proposed modifications to the north-west corner of Warehouse 3 (stage 5) are compliant with the provisions of C2.4.

45. BCA Clause C2.13: Electricity Supply System

Where an electricity substation is proposed to be located within the warehouse addition, it will be required to be separated from the remainder of the building in construction having an FRL of not less than 120/120/120 and provided with a self-closing -/120/30 fire door.

46. BCA Spec C1.1: Fire Resisting Construction

The proposed Warehouse addition is required to satisfy the requirements of of Spec. C1.1 as applicable to Type C Construction. In this regard, the external walls are greater than 3 metres from a Fire Source Feature, hence no fire ratings are required to the external walls or any other primary building elements pursuant to Table 5 of Spec. C1.1.

BCA SECTION D – ACCESS AND EGRESS

47.BCA Clause D1.4: Exit Travel Distance

Having regards to the size of the new addition, the exit travel distances will not comply with the 40 metre requirement to an exit. In this regard we note that egress distances from the staging area directly to the north of the caged automated enclosure is approximately 140m to an exit from the worst affected central areas of the warehouse and there is also a potential point of choice to alternative exits non-compliance of up to 30m. Fully detailed design of this staging area is required to determine the exact egress distances from this area at the CC stage and prior to the development of the Fire Engineering Brief.

As indicated above an Alternative Solution is required to address the Performance Requirements DP4 and EP2.2 in consultation with Fire and Rescue NSW, in relation to the egress distances associated with the warehouse extension and the areas around the installation of the automated racking system.

Note 1: No assessment of the egress distances has been carried out on the areas and platforms within the fully enclosed automated racking system, as we have been advised by Metcash that this area is fully fenced, and is in-accessible to staff during operation of the facility. In this regard, we have been advised that the only access into this enclosure is under strictly controlled circumstances where infrequent maintenance is required and special OH&S procedures will be implement to fully manage this process.

Note 2: Further details are required on the configuration of the automated storage system, having regards to how it is accessed by maintenance staff, along with the height of the conveyor systems and the design of any proposed stair walk overs required to reduce egress distances in the staging area. Although we have not assessed the egress distances within the caged area or on the maintenance platforms, it is considered appropriate that the controlled access into the caged areas needs to be clearly documented in the Fire Engineered alternative solution report and specific information provided on the emergency management procedures that are to be implemented if a fire event occurred whilst the automated racking system is shut down and being accessed by maintenance staff.

Note 3: The proposed alterations to the NW corner of Warehouse 3 will not alter the previous base building worst case egress distances within the building, however, at the CC Application stage for these works, revised Fire Modelling & a revised base building FER will be necessary to address the proposed configuration change in relation to the previous egress assessment.

48. BCA Clause D1.5: Distances Between Alternative Exits

The proposed addition does not comply with the DTS maximum 60m distance required between alternative exits under this clause.

Similarly to our assessment under D1.4, the staging area to the north of the enclosed automated racking system is non-compliant and has distance between alternative exits of up to 220m, when measured clear of awnings on each side of the building.

An Alternative Solution is required to address Performance Requirements DP4 and EP2.2 in consultation with Fire and Rescue NSW, in relation to the subject non-compliances identified.

Note: The notes under D1.4 above are also applicable to our assessment of D1.5.

49. BCA Clause D1.6: Dimensions of Exits

The minimum clear height in a path of travel to an exit must not be less than 2m. In addition, the width of a path of travel to an exit must not be less than 1 metre. Further details on the automated storage and retrieval system and areas accessed by staff are to be provided for our review under this clause.

It is considered that the aggregate egress widths from the new addition can achieve compliance with the requirements under this clause particularly given the a large proportion of the floor area is unoccupied space within the enclosed automated racking system. Regardless, details are required on the maximum number of additional staff within the new addition for our review.

Note: Any stairs proposed over conveyers etc. are required to have a clear width of not less than 1 metre measured between handrails.

50. BCA Clause D1.10: Discharge from Exits

Suitable barriers such as bollards are to be installed to prevent exits from being blocked by vehicles and/or storage, both internally and externally to the building.

51. BCA Part D2: Construction of Exits

The stair treads and risers, stair landings, door thresholds, balustrades and handrails are required to comply with this part.

Note 1: Further details will be required prior to issue of the Construction Certificate demonstrating compliance with the above.

Note 2: The provisions of Part D2 are not considered applicable to the internal parts of the automatic racking system as these areas are in-accessible to the occupants of the building, except in the case of maintenance where trained staff access the area under strictly controlled conditions.

52. BCA Clause: D2.20 Swinging Doors

All exit doors are required to swing in the direction of egress. Details are to be provided with the Construction Certificate drawings.

53. BCA Clause: 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 1100mm from the floor.

54. BCA Part D3: Access for People with Disabilities

Having regards to the "Affected Part" provisions under the Disability (Access to Premises) Standard, access is required for people with disabilities through the main entry of the building to the new addition in accordance with the requirements under AS 1428.1 – 2009. A review of the existing entry and the path of travel to the new addition would be required in this regard.

We understand that an Alternative Solution by an Access Consultant current is in place for the Base Building works. In this regard, further advice and comments may be required in relation to access form the main entry to the new addition.

Note: Where the areas associated with the new addition would be deemed to be inappropriate for people with a disability due to the particular purpose for which the area is used or would pose a health or safety risk to people with a disability, access would not be required from the main entry to the new addition. Details are to be provided by Metcash to the Access Consultant for review and comment.

BCA SECTION E – SERVICES AND EQUIPMENT

55. Clause E1.3: Hydrants

The new addition is required to be provided with Hydrant coverage complying with AS 2419.1 – 2005. Details and design certification is to be provided by the Hydraulic Consultant for review and comment as part of the Construction Certificate assessment.

Note 1: We understand that an Alternative Solution is being considered for Hydrant coverage to the new addition in relation to coverage within the automated racking system enclosure. In this regard, advice will be required from the Fire Safety Engineer and Fire and Rescue NSW and the relevant Performance Requirement is EP1.3.

Note 2: External Hydrants are to be located not less than 10 metres from the external walls of the subject building or within 10 metres of an electrical substation. In addition, an external hydrant may be located against the external wall of the building and protected by a radiant heat shield with an FRL of not less than 90/90/90 for a distance of 2 metres either side of the outlets and 3 metres above the external ground level. Please note Hydrant located under awnings will be considered as an internal hydrant having regards to coverage.

Note 3: the Hydrant Block Plan at the Hydrant Booster, Pump Room and FIP are required to be upgraded having regards to the new addition, any additional Hydrants and the location of isolation valves.

56. Clause E1.4: Fire Hose Reels

The buildings are required to be served by Fire Hose Reels complying with this clause and AS 2441 – 2005. Details and design certification is to be provided by the Hydraulic Consultant for review and comment as part of the Construction Certificate assessment.

Note 1: Hose Reels are required to be located within 4 metres of an exit.

Note 2: We understand that an Alternative Solution is proposed to reduce or delete the number of Hose Reels provided within the new addition in the internal parts of the new automated racking system enclosure. In this regard, advice is required from the Fire Safety Engineer and Fire and Rescue NSW and the relevant Performance Requirement is EP1.1.

57.Clause E1.5: Sprinklers

Having regards to our comments under C2.3 above, the building requires sprinkler protection under the Large Isolated Building provisions. As such, the sprinkler system is required to be designed in accordance with BCA Specification E1.5 and AS 2118.1 – 1999.

Note 1: We understand that an appropriately designed suppression system ie proposed to serve the new addition including the automated racking system and that system will be compliant with Spec E1.5 and AS 2118.1 – 1999.

58. Clause E1.6: Portable Fire Extinguishers

Portable fire extinguishers are to be provided in accordance with AS 2444.

59. Part E2.2: Smoke Hazard Management

Under Table E2.2a, Large Isolated Buildings which exceed 18,000m2 in floor area or 108,000m3 in volume must be provided with automatic smoke exhaust complying with Specification E2.2b.

We understand that an Alternative Solution (per the base building FER) is proposed to provide Manual Smoke Clearance fans in lieu of Smoke Exhaust under this clause addressing the Performance Requirements EP2.2.

60. Clauses E4.2 & E4.5: Exit Signs and Emergency Lighting

Exit Signs and Emergency Lighting are required to be provided in accordance with AS 2293.1 – 2005 throughout the new portion of the building and particularly in the staging areas that will be regularly utilised by staff during normal operating hours of the facility.

Note: All exit signs must be located not higher than 2.7 metres above floor level.

BCA Section F – Health and Amenity

61. Clause F2.3: Facilities in Class 3 to 9 Buildings

Details of proposed additional staff numbers are required from Metcash to confirm the to assess the adequacy of the existing number of sanitary facilities, having regard to the provisions of Table F2.3.

Note: We understand that the new addition does not include additional toilet facilities.

62. Clause F2.4: Accessible Sanitary Facilities

We have noted that the existing building is served by an accessible toilet facility complying with AS 1428.1 within the main office portion of the building. In this regard there is no requirement under Table F2.4 to provide additional compliant accessible facilities as part of the proposed warehouse extension.

Note: We understand that the new addition does not include additional toilet facilities.

63. Part F4: Light and Ventilation

Artificial lighting is to be provided in the building in accordance with AS/NZS 1680.0. Certification will be required from an Electrical Consultant at CC Application stage and from the Contractor prior to the issue of the Occupation Certificate.

The building is required to be ventilation in accordance with AS 1668.2. Certification will be required from a Mechanical Consultant at CC Application stage and from the Contractor prior to the issue of the Occupation Certificate.

BCA Section J: Energy Efficiency

64. Section J – Energy Efficiency

The warehouse addition is required to satisfy the Energy Efficiency requirements under this section. We understand that the proposed addition will not be a Conditioned Space and therefore the requirements Parts J1 (Building Fabric), J2 (External Glazing), J3 (Building Sealing), and J5 (Air-conditioning & Ventilation Systems) will not apply.

In addition, details and design certification is to be provided from the Electrical and Hydraulic Consultants in relation to Part J6 (Artificial Lighting and Power) and Part J7 (Hot Water Supply).

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 is achievable, however full details demonstrating compliance are required to be submitted with the Construction Certificate Application.