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PROPOSED BIG W DISTRIBUTION CENTRE

HOXTON PARK, NSW AUSTRALIA

PRE PART 3A BCA REVIEW FOR PART 3A SUBMISSION

Report prepared for:	Mirvac Projects Pty Limited Level 26, 60 Margaret St SYDNEY NSW 2000 Attention: Adrian Checchin
Report prepared by:	Philip Chun Building Surveying Suite 404 44 Hampden Road ARTARMON NSW 2064
Report Ref:	10025R02
Job Number:	N10025
Date.	16th February 2010

CONTENTS

DOCUMENT ACCEPTANCE

	Name	Signed	Date
Prepared by	Peter Murphy		16/02/10
Reviewed by	Robert Marinelli		16/02/10

REVISION HISTORY

Revision No.	Prepared by	Description	Date
R02	Peter Murphy	Pre Part 3A BCA Review	16/02/10

1.0 Introduction and Documentation

Introduction

This report contains a design philosophy review concerning the capability of the design to meet Building Code of Australia requirements. The review has found that the fundamental design is capable of meeting the requirements of BCA2009 with the inclusion of fire engineering.

At the request of Mirvac Projects Pty Limited, this report contains details of compliance with respect to the Building Code of Australia 2009 for the proposed construction of a distribution centre building. The proposed distribution centre will include the southern half consisting of a single storey area with hi-racks distributed for the mixed commodities storage while the northern half will consist of platforms and mezzanines for the conveyor system, a confectionery store, enclosure for aerosols, a security store for controlled goods and hi-racks for the storage of mixed commodities. Ancillary areas, plant rooms, finger docks and offices will also be located around the perimeter of the building.

We have reviewed the submitted architectural documentation (provided to date) for compliance with the deemed-to-satisfy provisions of the Building Code of Australia. Where compliance with the deemed to satisfy provisions is not possible a schedule of alternate solutions will be provided. A separate fire engineering report prepared by Aecom Pty Ltd has already been formulated for the departures from the deemed to satisfy provisions.

We have made every attempt to cover the main issues under Parts C, D, E and F of the Building Code of Australia. Areas of the design are still being refined so that resolution will be possible prior to the issue of the Construction Certificate for the works.

Methodology is principally review of the available documentation for the building at this point in time prepared by MNIA Architects.

This report is for the exclusive use of the client and cannot be used for any other purpose without prior permission from Philip Chun & Associates Pty Ltd. The report is valid only in its entire form. "Philip Chun and Associates accepts no responsibility for any loss suffered as a result of any reliance upon such assessment or report other than as being accurate at the date the property was inspected for the purposes of the assessment or report."

Documentation available and assessed

The Design Development scheme assessed comprises of the following design drawings as per the attached drawing schedule.

Drawings
DA01 (C), DA02 (C), DA03 (C), DA10 (B), DA11 (B), DA12 (B), DA13 (B), DA14 (B), DA15 (B), DA16 (B), DA17 (B), DA20 (B), DA21 (B) as prepared by MNIA

2.0 Use and Class of Buildings

The development consists of the construction of a distribution centre for Big W. The proposed building will include the southern half consisting of a single storey area with hi-racks distributed for the mixed commodities storage while the northern half will consist of platforms and mezzanines for the conveyor system, a confectionery store, enclosure for aerosols, a security store for controlled goods and hi-racks for the storage of mixed commodities. Ancillary areas, plant rooms, finger docks and offices will also be located around the perimeter of the building.

Class and use of the various levels of the building are as follows:-

Building Matrix				
Location	**Use**	**Classification**	**Rise in storeys**	**Type of construction**
Ground floor	Hi-racks, offices	Class 5 and 7b	3 (Effective height <25m)	Type B
Level 1	Offices	Class 5	2 (Effective height <25m)	Type B

3.0 Construction and fire resistance ratings

The building is to be constructed of pre-cast concrete and steel construction. The building has been designed to be no greater than 25 metres in effective height.

The fundamental concept of fire rating for the building will be as per the following table:

Big W Distribution Centre

Building component	Class 5 and7b (as one compartment)
Internal loadbearing walls and columns	240/-/-
Roofs	-/-/-

Different occupancy classes are to be fire separated via a firewall or alternatively both adjoining components may adopt the higher FRL requirements. This may apply to the ground floor level.

The roof covering is to be non-combustible construction where the building is provided with sprinkler protection.

The following services are to be separated from the remainder of the building via a 120/120/120 FRL:-

- Switchroom
- Lift motor rooms
- Boilers
- Essential services generator systems

Any electrical substation located on the ground floor level must be separated from any other part of the building by construction having an FRL of not less than 120/120/120 and have self closing fire doors with a fire rating of -/120/30.

Fire compartment areas and volumes

Big W Distribution Centre

The building exceeds maximum area and volume limitations for type B construction and therefore has been assessed as a "large Isolated Building" under BCA C2.3 (b) it is therefore required to be protected throughout with a sprinkler system and a smoke exhaust system. Perimeter vehicle access is also to be provided in accordance with BCA C2.4.

Protection of Openings

Any openings within 3 meters of the side boundaries (excluding Street boundaries) are to be protected in accordance with C3.4 of the BCA 2009. As the building is more than 3m from any fire source feature there is no requirement for the protection of openings.

4.0 Access and Egress

Principles

The buildings' egress system has been assessed and designed to ensure compliance with the following principles:

- Every floor of the building is provided with at least one exit as the building has an effective height less than 25 metres.
- The maximum distance of travel to an exit in Class 5, 7b & 8 building will be 40 metres, and to a point of choice will be 20 metres, the distance between alternate exits is not to exceed 60 metres with the exception of;
  - Extended travel distances in the distribution centre contrary to Clause D1.4 & D1.5 of the BCA.
- The distance between alternate exits is to be not less than 9 metres.
- The construction and discharge of stairs, landings, thresholds, balustrades and handrails will need to meet the requirements of the BCA.
- All paths of travel are to be a minimum of 1000mm in clear width with the exception of;
  - Width of aisles in the mezzanine platforms of the pickup modules is 876mm and 941mm.
  - There is also an Empty Pallet Removal Mechanism (EPRM) that is situated on both sides of the aisle which will reduce clear width at the motor location to 600mm, contrary to D1.6(b)(ii)
- Widths of exits and corridors must be sufficient to provide safe passage for occupant egress.

At this stage the proposed buildings will be compliant (with the exceptions as noted above); however should any variations from the above arise during design development phase then justification will be provided by a fire engineer prior to the issue of a construction certificate.

Access Considerations for Persons with Disabilities

- Access for persons with disabilities must meet the requirements of AS 1428.1.
- Access for persons with disabilities will be needed to the entry door to all common areas i.e. office, amenities, warehouse areas etc. All doors need to be either 870mm or 920mm leaf so as to open at least 800mm clear.
- Lifts – All lifts should be provided with accessible features in accordance with E3.6.
- Braille and tactile signage complying with AS 1428.1 is required to identify each sanitary facility for persons with disabilities.

Should any variations from the above arise it will require that justification be provided by a consultant in a performance based assessment and alternate solution prior to the issue of a construction certificate.

5.0 Fire Services and Equipment

The following is a status of the services required and to be provided to the buildings.

Fire services

Fire Hydrants	Fire hydrants are to be provided throughout to AS 2419.1-2005. except hydrant coverage is to be covered by external hydrant outlets as well as internal to provide the necessary coverage. Where external hydrants have been proposed they must be more than 10m from the building or protected by a fire rated wall in accordance with clause 3.2.2.2 of AS2419. The proposed reduced width of shield walls will require an exemption under clause 144 of the EP&A Regulation as required by NSWFB. Hydrant booster location within 10 metres of a building is to be protected by a 90 minute fire rated wall extending 2 metres either side of booster and 3 metres above the level of the valve outlet. Where this is not achieved an exemption under clause 144 of the EP&A Regulation is required by NSWFB. The location of the boosters needs to be approved by the NSW Fire Brigade. Internal hydrants may be required along the centre line of the centre where coverage from external hydrants is not provided.
Fire Hose-Reels	Fire hose-reels should be arranged to provide for full coverage to the building in accordance with AS 2441-2005. It has been proposed that 50m long hose reels are to be used. Fire engineered alternate solution required Some of the fire hose reels will be located more than 4m from an exit. Fire engineered alternate solution required
Sprinklers	A sprinkler system complying with Factory Mutual (FM) requirements as well as AS 2118.1-1999 is to be provided. The design will be to the satisfaction of the fire engineer Location of the sprinkler valve room needs to face directly to the street or open space.

Variations from the above will require that justification will be provided by a fire engineer.

Fire Control Room

A Fire Control Room is located at ground floor level in a building located near the gatehouse. The variation from Spec E1.8 is to be approved by NSWFB.

Smoke hazard management

All air handling systems in the building will shut down in the case of fire. Activation of the mechanical air handling systems will be upon the activation of a smoke detector or other alarm or sensory device.

The installation should comply with Specification E2.2b Smoke Exhaust Systems however will not comply and will be justified through fire engineering due to the nature and large size of the building

Lift systems

- All lifts must be accessible for people with disabilities and provided with the following:
- Fitted with car control buttons and handrails complying with AS 1735.12.
- Internal floor dimensions not less than 1400mm x 1100mm.
- Clear opening of the doorway to be not less than 900mm.
- Fitted with door opening sensory devices.

Emergency Lighting, Exit Signs and Warning Systems

Exit and emergency lighting	Requirements
A system of emergency lights and exit signage will be installed in the buildings to E4.2, E4.4 – E4.8 and AS 2293.1-2005.	Electrical services consultant to provide electrical drawings for review with the construction certificate.

6.0 Health and amenity issues

The following criteria detail the required sanitary facilities to be provided.

Sanitary facilities

Sanitary facilities in class 5 parts should be provided as follows;

- Male employees require 1 closet pan per 20 employees, 2 urinals will serve 50 employees, 1 urinal thereafter for every 50 employees and 1 washbasin per 30 employees.
- Female employees require 1 closet pan per 15 employees and 1 washbasin per 30 employees.

Sanitary facilities in class 7 parts should be provided as follows;

- Male employees require 1 closet pan per 20 employees, 2 urinals will serve 50 employees, 1 urinal thereafter for every 50 employees and 1 washbasin per 20 employees.
- Female employees require 1 closet pan per 15 employees and 1 washbasin per 20 employees.

Total population is to be confirmed by the client so as to ensure adequate facilities provided.

Swing and operation of doors to the WC's

Doors to fully enclosed sanitary compartments to open outwards, or slide or have 1.2 metres clear space between door and closet plan or be readily removable from the outside of the sanitary compartment in accordance with the BCA.

Room Sizes

The ceiling minimum height of 2.4m will be provided to areas except kitchens, corridors, sanitary facilities and storage areas. Compliance is readily achievable. Plant rooms need to be checked and the correct heights allowed in the design.

Light and ventilation

The offices within distribution centre are required to have a mechanical ventilation system or air conditioning system complying with AS1668.2 and AS/NZ3666.1
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7.0 Energy Efficiency

The building will be designed in accordance with the requirements of part J of the BCA in terms of energy efficiency.

Access for maintenance

The following criteria must be observed in the special design of the plant areas apart from the issues that may be raised by the Energy Efficiency consultants.

NSW SECTION J ENERGY EFFICIENCY

NSW J8.2 Access for maintenance
Access for maintenance must be provided to—
(a) all services and their components, including—
(i) time switches and motion detectors; and
(ii) room temperature thermostats; and
(iii) plant thermostats such as on boilers or refrigeration units; and
(iv) outside air dampers; and
(v) reflectors, lenses and diffusers of light fittings; and
(vi) heat transfer equipment; and
(b) adjustable or motorised shading devices.

8.0 Alternate solutions / fire engineering

The building design will require some alternate solutions as per report prepared by Aecom Pty Limited. The current alternate solutions required to satisfy BCA include but may not be limited to the following;

- Extended travel distances of more than 40m, D1.4 (c)
- Extended distances of more than 20m to a point of choice, D1.4(c)
- Extended distances between the exits of more than 60m, D1.5 (C)(iii).
- The unobstructed widths of each exit or path of travel to an exit is less than 1m D1.6 (b)(i)
- The increased distance of more than 18m from the building for perimeter vehicle access C2.4(b)(ii) is to be engineered.
- The reduced size of the shield wall to the external hydrants contrary to the requirements of AS2419.1
- The locations of hydrants externally to the building, E1.3(b)(v) are to be engineered.

- Reduction to the smoke extraction system quantities and compliance with Specification E2.2b to be engineered.
- The increased length of the fire hose reels as well as their location more than 4m from an exit or internal hydrant E1.4(c)(iv)(B)
- The exit signage E4.8(a) placed contrary to the requirements of AS2293
- Fire Control Room to be located remote from the building, Specification E1.8
- Non fire rated columns to the warehouse area contrary to the requirements of specification C1.1

9.0 Approvals from the New South Wales Fire Brigade

The following issues may need approval from the New South Wales Fire Brigade and in some cases concurrence will be sought through an application for departures from the deemed to satisfy provisions:-

- Fire Engineered alternate solutions as prepared by others as noted above. This may vary once a further assessment of the drawings is completed, but will not affect Part 3A submission.

10.0 Conclusion

We have assessed the architectural building design to date and have reviewed the scheme with respect to the Building Code of Australia. The assessment has found that the fundamental design is capable of meeting the requirements of the BCA 2009 with the inclusion of fire engineering. The design is at a point where the inherent BCA philosophies have been checked and development consent can be sought. The finer details with respect to BCA 2009 compliance can be finalised prior to the issue of a Construction Certificate.

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PROPOSED DICK SMITH ELECTRONICS DISTRIBUTION CENTRE

HOXTON PARK, NSW AUSTRALIA

PRE PART 3A BCA REVIEW FOR PART 3A SUBMISSION

Report prepared for:	Mirvac Projects Pty Limited Level 26, 60 Margaret St SYDNEY NSW 2000 Attention: Adrian Checchin
Report prepared by:	Philip Chun Building Surveying Suite 404 44 Hampden Road ARTARMON NSW 2064
Report Ref:	10026R02
Job Number:	N10026
Date.	16th February 2010

CONTENTS

DOCUMENT ACCEPTANCE

	Name	Signed	Date
Prepared by	Peter Murphy		16/02/10
Reviewed by	Robert Marinelli		16/02/10

REVISION HISTORY

Revision No.	Prepared by	Description	Date
R02	Peter Murphy	Pre Part 3A BCA Review	16/02/10

1.0 Introduction and Documentation

Introduction

This report contains a design philosophy review concerning the capability of the design to meet Building Code of Australia requirements. The review has found that the fundamental design is capable of meeting the requirements of BCA2009 with the inclusion of fire engineering.

At the request of Mirvac Projects Pty Limited, this report contains details of compliance with respect to the Building Code of Australia 2009 for the proposed construction of a distribution centre building. The proposed distribution centre will include a single storey area with hi-racks distributed for the mixed commodities storage, a conveyor system and mezzanine, an enclosure for aerosols and flammable liquids. Ancillary areas, plant rooms, finger docks and offices will also be located around the perimeter of the building.

We have reviewed the submitted architectural documentation (provided to date) for compliance with the deemed-to-satisfy provisions of the Building Code of Australia. Where compliance with the deemed to satisfy provisions is not possible a schedule of alternate solutions will be provided. An initial fire engineering report prepared by Beca Pty Ltd has already been formulated for the departures from the deemed to satisfy provisions however Aecom has now been appointed as the Fire Engineer.

We have made every attempt to cover the main issues under Parts C, D, E and F of the Building Code of Australia. Areas of the design are still being refined so that resolution will be possible prior to the issue of the Construction Certificate for the works.

Methodology is principally review of the available documentation for the building at this point in time prepared by MNIA Architects.

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Documentation available and assessed

The Design Development scheme assessed comprises of the following design drawings as per the attached drawing schedule.

Drawings
DA01 (C), DA02 (C), DA03 (C), DA04 (C), DA05 (C), DA06 (B), DA07 (B), DA08 (B), DA11 (B), DA12 (A) as prepared by MNIA.

2.0 Use and Class of Buildings

The development consists of the construction of a distribution centre for DSE. The proposed building will include a single storey area with hi-racks distributed for the mixed commodities storage, a conveyor system and mezzanine, an enclosure for aerosols and flammable liquids. Ancillary areas, plant rooms, finger docks and offices will also be located around the perimeter of the building.

Class and use of the various levels of the building are as follows:-

DSE Distribution Centre

Building Matrix				
Location	**Use**	**Classification**	**Rise in storeys**	**Type of construction**
Ground floor	Hi-racks, offices	Class 5 and 7b	2 (Effective height <25m)	Type C

3.0 Construction and fire resistance ratings

The building is to be constructed of pre-cast concrete and steel construction. The building has been designed to be no greater than 25 metres in effective height.

The fundament concept of fire rating for the building will be as per the following table:

DSE Distribution Centre

Building component	Class 5 and7b (as one compartment)
External walls (loadbearing) (3m or more)	-/-/-
Roofs	-/-/-

Different occupancy classes are to be fire separated via a firewall or alternatively both adjoining components may adopt the higher FRL requirements. This may apply to the ground floor level.

The roof covering is to be non-combustible construction where the building is provided with sprinkler protection.

The following services are to be separated from the remainder of the building via a 120/120/120 FRL:-

- Switchroom
- Lift motor rooms
- Boilers
- Essential services generator systems

Any electrical substation located on the ground floor level must be separated from any other part of the building by construction having an FRL of not less than 120/120/120 and have self closing fire doors with a fire rating of -/120/30.

Fire compartment areas and volumes

DSE Distribution Centre

The building exceeds maximum area and volume limitations for type C construction and therefore has been assessed as a "large Isolated Building" under BCA C2.3 (b) it is therefore required to be protected throughout with a sprinkler system and a smoke exhaust system. Perimeter vehicle access is also to be provided in accordance with BCA C2.4.

As the rise in storey's of the building does not exceed 2, on the basis of construction as a large isolated building under C2.3(b) the building will be assessed as Type C construction.

Protection of Openings

Any openings within 3 meters of the side boundaries (excluding Street boundaries) are to be protected in accordance with C3.4 of the BCA 2009. As the building is more than 3m from any fire source feature there is no requirement for the protection of openings.

4.0 Access and Egress

Principles

The buildings' egress system has been assessed and designed to ensure compliance with the following principles:

- Every floor of the building is provided with at least one exit as the building has an effective height less than 25 metres.
- The maximum distance of travel to an exit in Class 5 & 8 building will be 40 metres, and to a point of choice will be 20 metres, the distance between alternate exits is not to exceed 60 metres with the exception of;
  - Extended travel distances in the distribution centre contrary to Clause D1.4 & D1.5 of the BCA.
- The distance between alternate exits is to be not less than 9 metres.
- The construction and discharge of stairs, landings, thresholds, balustrades and handrails will need to meet the requirements of the BCA.
- All paths of travel are to be a minimum of 1000mm in clear width with the exception of;
  - Width of aisles in the mezzanine platforms of the pickup modules is 876mm and 941mm.
  - There is also an Empty Pallet Removal Mechanism (EPRM) that is situated on both sides of the aisle which will reduce clear width at the motor location to 600mm, contrary to D1.6(b)(ii)
- Widths of exits and corridors must be sufficient to provide safe passage for occupant egress.

At this stage the proposed buildings will be compliant (with the exceptions as noted above); however should any variations from the above arise during design development phase then justification will be provided by a fire engineer prior to the issue of a construction certificate.

Access Considerations for Persons with Disabilities

- Access for persons with disabilities must meet the requirements of AS 1428.1.
- Access for persons with disabilities will be needed to the entry door to all common areas i.e. community facilities, meeting rooms, café, general store, medical suites etc. All doors need to be either 870mm or 920mm leaf so as to open at least 800mm clear.
- Braille and tactile signage complying with AS 1428.1 is required to identify each sanitary facility for persons with disabilities.

Should any variations from the above arise it will require that justification be provided by a consultant prior to the issue of a construction certificate.

5.0 Fire Services and Equipment

The following is a status of the services required and to be provided to the buildings.

Fire services

Fire Hydrants	Fire hydrants are to be provided throughout to AS 2419.1-2005. An internal fire control centre is proposed adjacent to the reception area of the offices. Hydrant booster location within 10 metres of a building is to be protected by a 90 minute fire rated wall extending 2 metres either side of booster and 3 metres above the level of the valve outlet. Where this is not achieved an exemption under clause 144 of the EP&A Regulation is required by NSWFB. The location of the boosters needs to be approved by the NSW Fire Brigade. Location of the fire hydrants to the building will need to be assessed and agreed with the NSWFB.
Fire Hose-Reels	Fire hose-reels should be arranged to provide for full coverage to the building in accordance with AS 2441-2005. Location of the fire hose reels to the building will need to be assessed and agreed with the NSWFB.
Sprinklers	A sprinkler system complying with AS 2118.1-1999 and FM Global requirements is to be provided. The design will be to the satisfaction of the fire engineer. Location of the sprinkler valve room needs to be directly to the street or open space.
Portable Fire Extinguishers	Portable fire extinguishers shall be installed in accordance with AS2444-2001 according to the risk classification such as plant rooms, electrical rooms, commercial kitchens.

Variations from the above will require that justification will be provided by a fire engineer.

Fire Control Room

An internal fire control centre is proposed adjacent to the reception area of the offices. Further details in accordance with Specification E1.8 required prior to issue of a construction certificate. Any variation from Spec E1.8 is to be approved by NSWFB.

Smoke hazard management

All air handling systems in the building will shut down in the case of fire. Activation of the mechanical air handling systems will be upon the activation of a smoke detector or other alarm or sensory device.

The installation should comply with Specification E2.2b Smoke Exhaust Systems however will not comply and will be justified through fire engineering due to the nature and large size of the building

All air handling systems in the building will generally be for the temperature control of the building however will be made available to the NSWFB for post-fire smoke exhaust with fire rated cabling and controls situated in the Fire Control Room.

The NSWFB have indicated that they would prefer no mechanical smoke control during a fire, subject to the fire engineering analysis.

Emergency Lighting, Exit Signs and Warning Systems

Exit and emergency lighting	Requirements
A system of emergency lights and exit signage will be installed in the buildings to E4.2, E4.4 – E4.8 and AS 2293.1-2005.	Electrical services consultant to provide electrical drawings for review with the construction certificate.

Occupant warning systems	Requirements
An occupant warning and intercommunication system will be installed in the high-rise buildings in accordance with E4.9 of the BCA and AS 1670.4-2004 & AS 4428.4.	Fire services consultant to provide fire drawings for review with the construction certificate. Note occupant warning strobes may be required if ambient sound pressure levels exceed 95DBA

6.0 Health and amenity issues

The following criteria detail the required sanitary facilities to be provided.

Sanitary facilities

Sanitary facilities in class 5 parts should be provided as follows;

- Male employees require 1 closet pan per 20 employees, 2 urinals will serve 50 employees, 1 urinal thereafter for every 50 employees and 1 washbasin per 30 employees.
- Female employees require 1 closet pan per 15 employees and 1 washbasin per 30 employees.

Sanitary facilities in class 7 parts should be provided as follows;

- Male employees require 1 closet pan per 20 employees, 2 urinals will serve 50 employees, 1 urinal thereafter for every 50 employees and 1 washbasin per 20 employees.
- Female employees require 1 closet pan per 15 employees and 1 washbasin per 20 employees.

Total population is to be confirmed by the client so as to ensure adequate facilities provided.

Swing and operation of doors to the WC's

Doors to fully enclosed sanitary compartments to open outwards, or slide or have 1.2 metres clear space between door and closet plan or be readily removable from the outside of the sanitary compartment in accordance with the BCA.

Room Sizes

The ceiling minimum height of 2.4m will be provided to areas except kitchens, corridors, sanitary facilities and storage areas. Compliance is readily achievable. Plant rooms need to be checked and the correct heights allowed in the design.

Light and Ventilation

The offices within distribution centre are required to have a mechanical ventilation system or air conditioning system complying with AS1668.2 and AS/NZ3666.1

7.0 Energy Efficiency

The building will be designed in accordance with the requirements of part J of the BCA in terms of energy efficiency.

Access for maintenance

The following criteria must be observed in the special design of the plant areas apart from the issues that may be raised by the Energy Efficiency consultants.

NSW SECTION J ENERGY EFFICIENCY

NSW J8.2 Access for maintenance
Access for maintenance must be provided to—
(a) all services and their components, including—
(i) time switches and motion detectors; and
(ii) room temperature thermostats; and
(iii) plant thermostats such as on boilers or refrigeration units; and
(iv) outside air dampers; and
(v) reflectors, lenses and diffusers of light fittings; and
(vi) heat transfer equipment; and
(b) adjustable or motorised shading devices.

8.0 Alternate solutions / fire engineering

The building design will require some alternate solutions as per the draft report prepared by Beca Pty Limited. The current alternate solution required to satisfy BCA includes but may not be limited to the following;

- Extended travel distances of more than 40m, D1.4 (c)
- Extended distances of more than 20m to a point of choice, D1.4(c)
- Extended distances between the exits of more than 60m, D1.5 (C)(iii)
- The increased distance of more than 18m from the building for perimeter vehicle access, C2.4(b)(ii) is to be engineered.
- Removal of the Smoke Exhaust System according to Specification E2.2b
- The locations of hydrants at each end of the aisle reducing coverage of the centre, E1.3(b)(v)
- The location of the fire hose reels more than 4m from an exit or internal hydrant and removal of hoses from the distribution area E1.4(c)(iv)(B)
- The exit signage E4.8(a) placed contrary to the requirements of AS2293 will need to be engineered.

9.0 Approvals from the New South Wales Fire Brigade

The following issues may need approval from the New South Wales Fire Brigade and in some cases concurrence will be sought through an application for departures from the deemed to satisfy provisions:-

- Fire Engineered alternate solutions as prepared by others as noted above. This may vary once a further assessment of the drawings is completed, but will not affect Part 3A submission.

10.0 Conclusion

We have assessed the architectural building design to date and have reviewed the scheme with respect to the Building Code of Australia. The assessment has found that the fundamental design is capable of meeting the requirements of the BCA 2009 with the inclusion of fire engineering. The design is at a point where the inherent BCA philosophies have been checked and development consent can be sought. The finer details with respect to BCA 2009 compliance can be finalised prior to the issue of a Construction Certificate.