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CONSULTING PLANNERS

17 November 2008

Our ref: DHB/07108

The Director-General
NSW Department of Planning
23 – 33 Bridge Street,
SYDNEY NSW 2000

Attention: Ms Megan Webb

Dear Sir,

re: MP 08_0187 Versacold Cold Storage Facility

Reference is made to your letter dated 6 November 2008 requesting a response to the issues raised in submissions made to the exhibition of the Environmental Assessment of the Versacold Cold Storage Facility at Connect @ Erskine Park and to issues raised by the Department of Planning. Our response is as follows.

Matters Raised by Department of Planning

1. Greenhouse Gas and Energy

In response to the request from the Department for further details of the of the measures that would be implemented to reduce greenhouse gas emissions and energy use, the proponent has obtained a report from JDG Consulting which is contained in Attachment 1. This should be read in conjunction with the Greenhouse Gas Emissions assessment by ERM Australia dated 18 September 2008 contained in the EA.

2. Staging

Landscape Drawings have been revised to clarify the treatment of the Stage 2 area prior to the commencement of works for this stage. The area will be hydromulched and maintained as such until future expansion occurs. Details of application rates, operation and after care maintenance have been provided on the revised landscape drawings.

3. Visual Impact

Further visual treatment of the building to minimise visual impacts has been discussed with Penrith City Council. Additional landscaping is proposed along the Lenore Lane elevation to soften the appearance from the street. As a consequence, OSD has been relocated in part to under the car park area. The following measures have been implemented to increase building articulation and visual articulation:

- the internal structural columns along the Lockwood Road and Lenore Lane frontages have been externally placed to break up the façade and add visual

interest. These have been painted and colour-matched to the existing scheme proposed. Painted down pipes have also been used to add vertical elements to the facade;

- the office remains a focal point along the Lenore Lane frontage to provide additional visual interest and address this street frontage. The dock office has also been relocated to the northern elevation (Lockwood Road) to increase the office space fronting Lenore Lane and provide a break in the elevation;
- the docks along Lockwood Road have been redesigned. POD docks have been introduced to replace the conventional flush or recessed docks to add visual interest to the façade. A blue strip element has also been incorporated above the docks. This strip runs the entire length of the elevation;
- the plant room will be rendered and painted to match the proposed warehouse along the Lockwood Road frontage;
- the tank screen structure has been design in accordance with discussion held with Penrith City Council to ensure the tanks are not exposed to the street and screened with materials that are complimentary to the building façade. Additional landscaping will be provided to screen the plant room and fire tanks;
- the building comprises of two different materials to provide contrast – PIR Panels for the main structure and colourbond; and
- the siting of the office along the Lenore Lane frontage. This corner element will provide increased façade variation when viewed from Lockwood Road through the addition of horizontal colour elements. The office has been reduced in size by 200 square metres.

Matters Raised by the NSW Fire Brigade

1. BCA Requirements

The BCA requirements for the development have been addressed by the BCA Preliminary Reported prepared by McKenzie Group Consulting (see Attachment 2). The report has been amended to address the matters raised by the NSW Fire Brigade ("NSWFB") as follows:-

- The floor areas and structure heights provided in the BCA Report have been amended to reflect the amended Architectural Plans provided in Attachment 3.
- A Fire Control Centre ("FCC") is required for the proposed development, as noted in Section 5.0 of the BCA Report. Details of the FCC will be provided at the Construction Certificate stage. It is envisaged that this requirement will be satisfied via a condition of approval requiring compliance with the BCA.
- Points 5 and 6 of the NSWFB's letter have been addressed in the revised BCA report (Attachment 2). The draft fire safety schedule in Appendix D of the BCA Report has been amended to satisfy these requirements relation to Australian Standards.
- Points 7 and 8 of the NSWFB's letter relating to signage and site emergency procedures will be satisfied via a condition of approval, and will be provided prior to occupation of the premises.

2. State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

NSWFB request further details in relation to refrigerant to substantiate the statement in the EA that SEPP No 33 does not apply. The proponent has sought advice from a refrigeration supplier who advises that about 3,000 Kg of ammonia refrigerant would be used in the system. This material would not be stored in one location but would be distributed throughout the operating refrigeration system and used as a refrigerant. The refrigerant used does not constitute a potential hazardous industry because:

- The use is neither an industry or a storage facility for the refrigerant;
- The amount used does not exceed the screening criteria in the Hazardous and Offensive Development Application Guidelines and this is not potentially hazardous.

Matters Raised by Sydney Water

1. Sydney Water Servicing

A Notice of Requirements will be obtained from Sydney Water which will specify works required as a result of the development and any amplification and/or charges applicable. A Section 73 Certificate will be obtained prior to the release of any occupation certificate for the proposed development. It is envisaged that this requirement will be achieved via a condition of approval.

2. Trade Waste

Section 3.4 of the EA acknowledges that the trade waste will be treated on site to the level required by Sydney Water. This will be determined during the detailed design stage for the trade waste facility in the negotiations for a trade waste agreement. It is envisaged that this will be requirement will be addressed by a condition of approval.

Matters Raised by Penrith City Council

1. Earthworks to Facilitate Boundary Adjustment

Works in the north east boundary of the site are to be undertaken as part of the bulk earthworks for the adjoining site to the east by FDC Construction (Lot 197 in DP 1087837) inn accordance with a consent issued by Penrith City Council to DA08/0526.01 approved on 18 August 2008. The earthworks in the north-east corner are required to facilitate a boundary adjustment between the subject lot and Lot 197 in DP 1087837 in order to provide a regular shaped allotment for the construction of the cold storage facility.

Earthworks on the balance of the site have been completed in accordance with major project approval No 06_0208.

Further analysis of the earthworks required to facilitate the construction of the cold storage facility have been undertaken since the EA was lodged with the Department of Planning. In order to minimise excavation and achieve a balance of earthworks across the site which match the pad levels approved as part of the earthworks for the Erskine Park Estate, the Finished Floor Level issued on the Architectural Plans will be required to be raised by 0.8 metres. No import or export of any fill material will be undertaken as part of the proposed works.

2. Landscaping

Council notes that, due to the levels of Lenore Drive in relation to the site there is a need for enhanced landscaping along the Lenore Drive frontage. Furthermore, concern was expressed that the onsite detention basin in the front setback would allow insufficient room for landscaping, which is the intent of providing a front building setback.

In response to this concern, the detention basin has been reduced in size to allow a 5 metres landscape strip to the north and south of the basin between the proposed building and Lenore Lane. Additional rows of bushy, shrub planting and large canopy tree planting have been accommodated in the setback to enhance the screening of the boiling. The plant species have been selected for their bushy habitats and screening capabilities. Amended Landscape Plans have been provided in Attachment 3.

The landscaping works will be undertaken in two stages, as shown on the Landscape Plans.

3. Stormwater

The Council notes that the proposed on site detention and water quality system relies upon the 20 metre landscape setback to Lenore Lane for the basin area. This conflicts with the intent of the landscape setback to provide for a visual buffer to the development by limiting the amount of landscaping that can be achieved. They recommend that the on site detention basin be removed from the landscape setback and relocated as an underground basin within the car park.

The stormwater design has been amended to reduce the size of the detention basin within the 20 metre setback. This will accommodate a 5 metre landscape strip along the northern and southern boundaries of the remaining detention basin. To accommodate this reduction in size of the OSD in the northern building setback, an underground OSD tank within the car park area will be provided with a capacity of 200m³. This arrangement is as discussed with Penrith City Council.

Council also require gross pollutant traps (GTPs) to be utilised to remove rubbish and sediments prior to discharge into the water quality basin. EnviroPods will be fitted to all relevant stormwater pits to filter any sediments from the stormwater prior to discharge.

Council has stated that, in the event of pit blockage within the western driveway and heavy vehicle manoeuvring area, there does not appear to be an overland flow path as there is no overall grade. In the event of pipe blockage the system will not flow overland to the proposed onsite detention system. The proposed stormwater management plan provides for overland flow to be directed to the setback area in the north. Generally the loading dock areas grades at 1 per cent to the north and the car park area grades as 1 per cent to the east with an overland flow path to the north. Even in the event of a major stormwater system blockage, overland flow will still pass through the on-site stormwater detention system which is proposed to be partially located within the setback area.

Council requested a condition of approval that the existing stormwater kerb inlet pit be relocated as required for the new kerb crossing. This is agreed.

4. Fencing

Fencing details are provided on the landscaping plans contained in Attachment 3. Diplomat style fencing is similar to pool palisade fencing and thus will satisfy Councils requirements. This is also commensurate with the proposed development to the west.

5. Signage

No non wall-mounted signage is proposed at this stage. Any future signage will be subject to a development application which will be lodged with Penrith City Council.

6. Visual Impact

Please see the response in regards to the Department of Planning's comments made in reference to the visual interest of the proposed development.

7. Lighting

A lighting scheme will be designed for the proposed development. It is envisaged that the requirement for a lighting plan will be addressed by a condition of approval and will be satisfied prior to the provision of a construction certificate for the proposed development. The lighting plan will show that no spillage of light will occur from the development.

Matters Raised by Sydney Regional Development Advisory Committee (RTA)

1. Bicycle Facilities

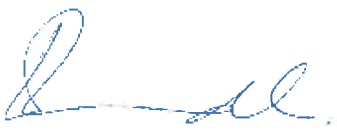
The architectural plans have been amended to include the provision of showers and lockers to encourage bicycle use for travelling to and from the development. The provision of bicycle racking will be shown on the construction certificate drawings. We envisage this will be required by way of a condition of approval.

Revised Drawings

The changes made to the project flowing from the submissions are reflected in a revised set of drawings of the project which are contained in Attachment 3.

Should you require any further information, please do not hesitate to contact the undersigned on 9211 4099.

Yours faithfully,
BBC Consulting Planners



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JDG CONSULTING

17 November 2008

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Attn: **Mr Nader Zreik**

Ref: 08-1559

VERSACOLD FACILITY - CONNECT INDUSTRIAL ESTATE – ERSKINE PARK GREENHOUSE GAS & ENERGY – STATEMENT OF REDUCTION STRATEGY

With reference to the above project, we advise that the following Greenhouse Gas and Energy reduction strategies are proposed:

Preamble:

This statement is based on the premise that electricity supply to this facility will be sourced primarily from coal-fired electricity generation plant supplying the NSW electricity grid. Further it is assumed that the reduction in energy consumption will proportionally reduce the production of greenhouse gas associated with electricity generation.

This statement utilises a factor of 258 tonnes of greenhouse gas production for each gigajoule (GJ) of electricity consumed as established for electricity generated in NSW.

This statement recognises that the proposed VersaCold facility will utilise energy efficient refrigeration plant to establish and maintain temperature requirements at the facility and the further measures stated in the Greenhouse Gas and Energy Reduction Strategy clause are identified as complimentary measures.

Energy Consumption:

The initial stage of the VersaCold facility will comprise ~12,000m^2 of freezers, ~1,500m^2 of administration offices and ~460m^2 of battery charging and workshop. For this stage the derived diversified electrical demand is 1,300kVA for the facility once it is operational. Based on 24/7 operation of the facility, the anticipated annual energy consumption is 28.8 GJ. This equates to 7,428 tonnes of greenhouse gas production per annum.

We note that energy consumption varies dependant on frequency of access to cold storage spaces and from season to season however the thermal mass and storage insulation of the facility together with design and operation will mitigate significant variation in energy consumption from month to month.

Greenhouse Gas and Energy Reduction Strategy:

Separately from the energy consumed by the refrigeration plant which represents ~59% of the maximum demand, the main areas of energy consumption are:

- Air-conditioning of office spares ~ 8%
- Lighting in Annexe and Cold Storage Areas and lighting of office space ~ 9%
- Power to operate dock levellers, roller shutter doors and general power requirements ~ 6%
- Battery charging ~18%

Air-conditioning

The base building design will incorporate effective insulation in the ceiling and roof spaces to reduce thermal demand together with thermal reflective glazing and zone controlled package type air-conditioning plant for the office areas. Chiller plant would be more efficient and would be subject to value analysis criteria.

BMS provisions will manage the air-conditioning plant to ensure energy consumption is minimised while satisfying Code and OH&S requirements for facility occupants.

Lighting

The base building design will incorporate energy efficient light fittings in all areas which will be managed variously by lighting control including management for time and ambient lighting conditions (offices) as well as motion detection of personnel office space and access locations.

In this manner artificial lighting will not be operational unless the respective lit space is being accessed for storage or being used for offices. The lighting will relate to operational and OH&S requirements and generally comply with Australian Standard guidelines.

It is anticipated that an energy consumption reduction in the order of ~30% will be achievable using lighting control measures proposed i.e. lights will be switched off for ~30% of the time.

Power

The base building design will incorporate 3-phase power requirements for dock levellers and roller doors which are more energy efficient that single phase motors.

Management procedures for minimisation of operation of access doors will potentially reduce energy consumption associated with motor operation and operational loss of cold storage conditions.

Battery Charging

The base building design will incorporate a battery charging area complete with 3-phase and single-phase power outlets for battery charging however it is not possible to identify energy saving measures for battery charging.

Conclusions

1. The facility will be designed to incorporate ecological sustainable construction elements and systems.

2. Operational procedures will be established to manage energy consumption reduction strategies.

3. While lighting control measures might realise energy reduction of 30% of the lighting demand, this represents just 3% of the overall demand of the facility being initially 223 tonnes of greenhouse gas production associated with electricity consumption per annum.

4. Efficiencies in refrigeration and air-conditioning plant operation will affect the most significant potential reduction in greenhouse gas production resulting from electricity consumption.

We trust that this statement satisfies your requirements.

Yours faithfully,

JDG Consulting

John Green

Principal

BUILDING CODE OF AUSTRALIA
PRELIMINARY REPORT

Proposed Versacold Cold Storage

Site D – Lockwood Road, Erskine Park

Prepared By –

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Date	Revision Number	No. of pages	Issue or Description of Amendment	Checked By	Prepared By	Date Approved
17.07.08	A	11	Initial Assessment	Stephen Natilli	Mike Gooley	17.07.08
1.08.08	B	11	BCA Assessment	Stephen Natilli	Mike Gooley	1.08.08
12.09.08	C	11	Final	Stephen Natilli	Mike Gooley	12.09.08
06.11.08	D	11	Minor amendment as per comment received from DOP	Geoff Pearce	Geoff Pearce	06.11.08

EXECUTIVE SUMMARY

McKenzie Group Consulting was engaged by Hansen Yuncken to conduct a BCA assessment of the proposed Industrial Facility located at Site D – Lockwood Road, Erskine Park.

This report nominates relevant BCA prescriptive ('deemed to satisfy') provisions together with areas in which an alternate performance based solution will need to be developed to comply with the performance requirements of the BCA.

The report also provides an overview of relevant provisions for health and amenity for occupants including sanitary facilities for both able bodied occupants and occupants with disabilities as well as general access provisions.

The report highlights key compliance areas associated with the provision of appropriate access and facilities for occupants with disabilities.

The fire safety engineered solution must be referred to the NSW Fire Brigade as part of the Construction Certificate process. Initial consultation with the fire brigade during the development of the FSEB.

Item for consideration by Relevant Authorities and Fire Safety Engineer

1. Emergency Vehicular Access within the landscape zone will require a fire engineered assessment to verify compliance with performance requirement EP2.2 of the BCA.
2. The egress travel distances within the facility area are in excess of the prescriptive travel distances and should be assessed against the relevant provisions of DP4 as follows:

    a. Travel distance to a point of choice to alternative exits will exceed 20 metres (DP4),

    b. Travel distance within the warehouse areas to required exits will exceed 40 metres (DP4 & EP2.2);

    c. Distance between alternate exits within the warehouse area of approximately will exceed 60 metres (DP4 and EP2.2).

2. The smoke hazard management provisions within the facility shall be assessed as part of the fire safety engineering report to verify compliance with performance requirement EP2.2 of the BCA.
3. Proposed Exit Sign Mounting Height greater than 2.7m, to be addressed in accordance with performance requirement EP4.2 of the BCA.
4. Based upon extended travel distances it is likely there will be a shortfall with fire hydrant coverage. A performance based assessment will be required to demonstrate compliance with performance requirement EP1.3.
5. For future leasing flexibility a performance based solution will be required to be undertaken by a fire engineer to address location of hose reels greater than 4m from an exit with regards to performance requirement EP1.1 of the BCA.

1.0 INTRODUCTION

The proposed development involves the construction of industrial warehouse building with two (2) storey office portion within the south-east corner of the building. A loading dock area will be situated at the front of the building with an open car parking area (157 spaces).

The development will consist of stage 1 and 2 as noted on the architectural plans. Stage 1 will have a total building area of 14, 468m^2. This stage will be constructed and operational. Stage 2 consisting of a 10,000m^2 warehouse expansion will occur at a later date once the industrial facility is operational.

The purpose of this report is to provide a general overview of the proposed industrial warehouse building in terms of compliance with the provisions of the BCA (2008).

The issues within the report should be used as an early design guide to the compliance of the proposed new building with the BCA and is generic insofar as the design has progressed. Further checking is required throughout the design process.

Limitations and Exclusions

The information contained within this report is based upon a review of the preliminary architectural drawings (refer to appendix A) and does not include:

- Determining compliance with the Disability Discrimination Act (DDA);
- Determining compliance with Council policies;
- Assessment of architectural drawings against the Occupation Health and Safety legislation.

Current Legislation

The applicable legislation governing the design of buildings is the Environmental Planning and Assessment Act 1979. This Act requires that all new building works must be designed to comply with the BCA.

The application of compliance with the particular version of the BCA is the date of application is made for a construction certificate with the Certifying Authority.

2.0 PRELIMINARIES

1. Building Assessment Data:

The following BCA Parameters will apply to this Building:

The building has been assessed as a large-isolated building and must be designed to comply with Clause C2.3 and C2.4 of the BCA.

Part of Project	Building C
Classification	5, 7b
Number of Storeys Contained	2
Rise In Storeys	2
Type of Construction	Type C
Effective Height (m)	16 m

The proposed new warehouse building (stages 1 and 2) has been divided into the following uses and classifications:

Part of Project	BCA Classification	Approx. Floor Area (m^2)	Approx. Volume (m^3)	Assumed Population
Warehouse	7b	21,965 m^2	347,120 m^3	80*
Offices	5	1,140 m^2	3,321 m^3	140*
Battery Room	7b	450 m^2	1,215 m^3	ancillary
Total		**23,555 m^2**	**351,656 m^3**	**246**

Notes:

1. * Please note that the estimated population numbers contained in the above table have been derived from a reverse calculation of Sanitary Facility numbers, pursuant to Clause F2.3 of the BCA.
2. The floor areas have been adjusted without ancillary areas such as sanitary facilities, corridors, shelving and or racking layouts in storage areas.
3. A building height of 16 metres has been allowed for in the warehouse/ processing facility thus the above table has allowed 16 metres for the purposes of this report.

2. Structural Provisions:

Any new structural works are to comply with the applicable requirements of AS/NZS1170.1.

Glazing is to comply with AS1288, and AS2047.

Prior to issue of the Construction Certificate structural certification is required to be provided.

3. Development Consent:

A Development Application is required for the development. A copy of the approval and associated endorsed drawings will be required prior to issuing the Construction certificate for that component of works. The endorsed drawings and all relevant conditions will need to be satisfied and accurately reflect the construction drawings.

3.0 SECTION C – FIRE RESISTANCE

1. Fire Resistance:

The building must be designed to comply with Type C Construction with the fire resistance of building elements complying with Table 5 of Specification C1.1 (refer to summary of FRL's – Appendix 2).

Based upon the external walls of the building being setback greater then 3.0m from the side boundaries and adjacent buildings within the allotment the external walls are not required to achieve a fire resistance level (FRL).

2. Fire Compartmentation

The building has been assessed as a large-isolated building in accordance with Clause C2.3 of the BCA. Stage 1 will be constructed and operational independent of stage 2. The floor area of the building for Stage 1 is approximately 14,468 m^2 with the volume exceeding 108, 000 m^3 and with the construction of Stage 2 the total floor area of the building will be approximately 24,450m^2.

The proposed building shall be served by the following:

1. protected throughout with an automatic sprinkler in accordance with Spec. E1.5; and
2. smoke exhaust system in accordance with specification E2.2b; or
3. smoke-and-heat vents in accordance with specification E2.2c;
4. Perimeter vehicular access complying with Clause C2.4 (b).

It is understood that a 6.0m wide temporary fire brigade access will be provided along the western external walls of the completed building (stage 1) that provides a vehicular access that connects between Lockwood Road and Lenore Drive. Once the whole building (stage 1 and 2) is complete a permanent fire brigade access will be provided around the perimeter of the building (as described above).

Compliant vehicular access will not be available within the 20.0m wide landscape setback around the perimeter of the building. Emergency Vehicular Access within the landscape zone will require a fire engineered assessment to verify compliance with performance requirement EP2.2 of the BCA.

Smoke hazard management will require a fire engineered assessment to verify compliance with performance requirement EP2.2 of the BCA.

The office portion must be fire-separated from the warehouse by a firewall or each building element in the storey must be designed to have the higher FRL prescribed in specification C1.1 for the element for the classification concern.

Other passive fire protection issues that will need to be addressed in detailed documentation phase include:

- Emergency power supply,
- Emergency generators,
- Electricity supply,
- Boilers or batteries,
- Hydrant Pump rooms,
- Sprinkler Pump Rooms,

To be separated from the remainder of the building by construction achieving a minimum fire resistance level of 120 minutes.

The fire hazard properties of fixed surface linings and mechanical ductwork will also need to be addressed within the detailed documentation phase pursuant to specification C1.10 Building Code of Australia.

4.0 SECTION D – ACCESS EGRESS

1. Provision for Escape:

The egress provisions from the proposed building are provided via external doorways dispersed around the perimeter of the building, while the offices within level 1 are served via two (2) internal stairways.

A review of the travel distances to required exits has identified non-compliances with the DTS provisions of the BCA. These include:.

1. The travel distance within the high racking area to the point of choice to alternative exits exceeds 20.0m;
2. The travel distances from the furthest point within the warehouse to the closest exit doorway exceeds 40.0m;
3. Due to the size of the warehouse the travel distances to alternative exits exceeds 60.0m

The abovementioned extended travel distances will be assessed as part of the fire engineering assessment of the building to achieve compliance with the performance requirements of the BCA. The relevant performance requirement in this instance include DP4 and EP2.2.

Minimum dimensions of 1000mm and 2000mm height to be provided within exits, with the paths of travel should provide a minimum width of 1000mm (note that all maintenance access, cat walks, etc may comply with AS1657 in which case a 600mm clear width is required).

The current design documentation has adequate egress widths from all areas of the building with the fire isolated stairs being 1.0 metres clear in width.

Doorways are permitted to contain a clear opening width of 750mm with a height of 1980mm as part of the egress requirements. Access for persons with disabilities however requires a clear doorway opening width of 800mm (i.e. minimum 870mm door). The details provided allow for the correct egress widths.

2. Construction of Exits

lobbies must swing in the direction of egress.

Electrical distribution boards and switchboards along the path of travel to required exits must be enclosed in non-combustible construction with doorways suitably sealed against the smoke spreading from the enclosure.

Other detailing issues that will need to be addressed include door hardware, exit door operation, stair construction, handrail and balustrade construction, details of the egress provisions to the road.

3. Access for Occupants with Disabilities:

Access for people with disabilities can be provided via the main entrance doorways of the building and to the disabled toilet and areas normally used by the occupants, within the ground floor level.

Access for people with disabilities are not required to the 1st floor level as a passenger lift is not proposed to be installed. Access and facilities within the ground floor level will be able to comply with Part D3 and AS 1428.1.

Access to be provided to and within the building pursuant to AS1428.1 as follows:

Stairway:

The stairway within the office portion must be designed to comply with Clause 9 of AS 1428.1. This will require the stairs to have solid risers, contrast strip to the nosing of treads, continuous handrail that extend at least one tread width plus 300mm from the last riser.

Doorways:

All doors within the ground floor level being designed to ensure that the clear widths and circulation spaces are in accordance with AS1428.1 (generally 870mm minimum door and 470mm latch side clearance). Detailed information will need to be developed as part of the design.

Car parking:

Generally parking spaces complying with AS2890.1 and should be provided at a rate of 1 in 100 required spaces for persons with disabilities, in accordance with Table D3.5 of the BCA.

Signage:

As part of the detailed design package, specifications will need to be developed indicating:

- Sanitary Facility Identification Signs (note that they are to comply with BCA Specification D3.6 and include the use of Braille, tactile, etc and be placed on the wall on the latch side of the facility);
- "Disabled" sanitary facility sign in accordance with the universal standard (as detailed in AS1428.1).

5.0 SECTION E – SERVICE AND EQUIPMENT

1. Fire Services:

The following fire services are to be provided throughout the building:

- An automatic sprinkler system in accordance with the relevant provision of clause E1.5 of the BCA and AS 2118.1-1999 (Including Occupant Warning),
- Fire hydrants in accordance with clause E1.3 of the BCA and AS 2419.1-2005,
- Fire hose reels in accordance with clause E1.4 of the BCA and AS 2441-2005,
- Fire control centre in accordance with specification E1.8 of the BCA;
- Portable Fire Extinguishers in accordance with Clause E1.6 of the BCA and AS 2444-2001,
- Emergency lighting, exit signage and directional exit signage is required throughout the building in accordance with Part E of the BCA and AS/NZS 2293.1

2. Fire Hydrants

The building is required to be provided with a booster assembly as part of the fire hydrant requirements.

The buildings should be served by fire hydrants located in order to provide coverage in accordance with AS 2419.1-2005.

Based upon extended travel distances it is likely there will be a shortfall with fire hydrant coverage. A performance based assessment will be required to demonstrate compliance with performance requirement EP1.3.

3. Fire Hose Reels:

The facilities will need to be provided fire hose reels in accordance with BCA Clause E1.4 and AS2441-2005.

To be located within 4m of exits and provide coverage within the building based on a 36m hose length.

For future leasing flexibility a performance based solution will be required to be undertaken by a fire engineer to address location of hose reels greater than 4m from an exit with regards to performance requirement EP1.1 of the BCA.

4. Sprinkler System

Based upon the building being assessed as a large-isolated building then the whole building must be served by an automatic sprinkler system in accordance with specification E1.5 and AS 2118.1. Special consideration being given to the design of the sprinkler system that serves the high rack storage area within the warehouse which is defined as an 'occupancy of excessive hazard' under table E1.5 of the BCA.

The sprinkler value enclosure being situated within an enclosure which has direct access to a road or open space suitable for use by the fire brigade.

5. Fire Control Centre

A fire Control centre is required to serve a building with a floor area greater than 18,000m^2. Based upon the combined floor area of stage 1 and 2 being approximately 23,816m^2 then the whole building must be served by a fire control centre.

A fire control centre must be located in a building that egress does not involve a change in levels which in aggregate exceeds 300mm.

6. Smoke Hazard Management:

Smoke hazard management provisions are required as part of the fire safety engineering assessment to verify compliance with performance requirement EP2.2 of the BCA. However allowance should be made for smoke clearance facility as required by the NSW fire Brigades.

7. Exit Signs & Emergency Lighting:

Emergency Lighting and signs indicating exit location and paths of travel to exits to be provided in accordance with Part E4 of the BCA and AS2293. The design documentation currently provided emergency lighting and exit signage.

Please note that as Exit Signs are proposed to be mounted higher than 2.7m from the FFL, owing to the operational requirements of the subject development, this scenario will be required to be assessed as part of the Fire Engineering Solution for the subject site, in accordance with Performance Requirement EP4.2 of the BCA.

Note: The exit signs are to be the 'running man' symbol.

6.0 HEALTH AND AMENITY

1. Sanitary Facilities:

Persons with Disabilities

The sanitary facility for persons with a disability is to comply with the associated provisions of AS1428.1.

Bathroom Construction

Where bathrooms or rooms containing water closets have the WC within 1200mm of the doorway, the door shall be either sliding, open outwards, or be provided with removable hinges. The current details allow for the accessible sanitary facilities to have an outward swinging doorway.

The facility would require the following sanitary facilities should the area be fully occupied:

Building	Occupant Number		WC	Urinal	Basin
Warehouse	Male	45	3	2	2
	Female	45	3	N/A	2
	Unisex Wheel Chair Accessible		1	N/A	1
Office	Male	22	2	1	2
	Female	22	2	N/A	2
Total Required			**11**	**3**	**9**

Based upon the calculated population of the building the number of sanitary facilities to be provided being based upon the above schedule. .

If the estimated population numbers are inaccurate, please provide revised numbers for our office to assess the number of sanitary facilities required based upon calculated persons accommodated within the building.

2. Light and Ventilation:

Artificial lighting complying with AS/NZS1680.0 is to be incorporated with the final detailed design to be developed to confirm this.

Mechanical ventilation and artificial light is to be provided in accordance with Part F4 of the BCA.

7.0 ENERGY EFFICIENCY

1. Energy Efficiency:

The office portion of the building that shall be conditioned (i.e. any form of climate control) and therefore be required to comply with the energy provisions of the BCA 2008.

The building has been identified as being located within a Climate Zone 6.

Options available are:

- Comply with Verification method JV3

Or

- Comply with the deemed to satisfy provisions in relation to:
- Building Fabric
- External Glazing
- Building dealing
- Air movement
- Air conditioning and ventilation systems
- Artificial light and power
- Hot water supply

Certification from an appropriately qualified engineer should be provided for either option with a report / computations outlining how compliance is achieved.

Deemed to Satisfy Design

The following deemed to satisfy energy measures would be applicable to the project.

Roof and Ceiling Construction:

Roofs and or ceilings are to be constructed to provide an R rating of 3.2.

External Walls:

External walls are to be constructed to provide an R rating of 1.8.

Floors:

Floors are to achieve an R rating of 1.0.

Glazing:

This section relates to the conductance and solar heat gain of the windows, taking into consideration of the type of window frame, orientation and whether there are overhangs / shadings.

A glazing calculator will be required to be undertaken and results provided for assessment.

Building Sealing:

A seal to restrict air infiltration must be fitted to each edge of the external doors and openable windows. The seals may be foam or compressible strip, fibrous seal or the like. The main entry doors must have either an airlock, or self closing doors, or a revolving door.

Miscellaneous exhaust fans must be fitted with a sealing device such as a self closing damper.

An evaporative cooler must be fitted with a self closing damper.

Air conditioning & Ventilation systems:

An air conditioning unit must be capable of being inactivated when the building is not in use, and where the system has motorized outside air and return dampers, close the dampers when the air conditioning unit or system is inactivated.

Where it is proposed to zone areas, thermostats for each area are to be provided.

When the air flow rate is greater the 1000 L/s the total motor shaft power of the fans in the system should not exceed 15 W/m^2.

Time Switch:

Power supply to an air conditioning system, or ventilation system or heating system by a timer.

Heating and chilling systems:

Systems that provide heating and chilling for air conditioning must have piping insulated.

An air cooled condenser fan motor, other than one that is part of a package system must not use more than 15W of motor shaft power for each kW of heat rejected.

The fan of a closed circuit cooler must not use more than:

- Propeller or axial – 500W of motor shaft power for each l/s of cooled fluid,
- Centrifugal – 670W of motor shaft power for each l/s of cooled fluid.

The fan of an evaporative condenser must not use more than:

- Propeller or axial – 18W of motor shaft power for each l/s of heat rejected,
- Centrifugal – 22W of motor shaft power for each l/s of heat rejected.

Interior Artificial Lighting:

The maximum design illumination load is not to exceed 10W/m^2.

Artificial lighting must be controlled by a time switch or occupant sensor.

APPENFIX A – DESIGN DOCUMENTATION

The following architectural plans prepared by Sppace Design was used in the assessment and preparation of this report:-

DRAWING NO.	TITLE	ISSUE	DATE
VC-LE-DA-001	Development Application Site Plan	C	12.09.2008
VC-LE-DA-002	Development Application Warehouse Floor Plan	P2	23.07.2008
VC-LE-DA-003	Development Application Racking Plan	P2	23.07.2008
VC-LE-DA-004	Development Application Overall Roof Plan	P2	23.07.2008
VC-LE-DA-100	Development Application Office Floor Plans	P2	23.07.2008
VC-LE-DA-200	Development Application Elevations	P2	23.07.2008
VC-LE-DA-210	Development Application Section	P2	23.07.2008

APPENFIX D – DRAFT FIRE SAFETY SCHEDULE

Based upon the documentation reviewed to date, the following schedule of essential fire measures and other measures must be installed within the building.

(Pursuant to Clause 168 of the Environmental Planning and Assessment Regulation 2000)

	Items to be inspected or tested as nominated by the relevant authority	Deemed to satisfy installation standard/code/conditions of approval
1.	Automatic Fire Suppression System	BCA Spec. E1.5 & AS 2118.1 – 1999,
2.	Building Occupant Warning System activated by the Sprinkler System	BCA Spec. E1.5 & AS 1670 – 2004
3.	Emergency Lighting	BCA Clause E4.2, E4.4 & AS/NZS 2293.1 – 1998
4.	EWIS	BCA Clause E4.9 & AS 1670.4 - 2004 & AS 4428.2 – 2004
5.	Emergency Evacuation Plan	AS 3745 – 2002
6.	Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS/NZS 2293.1 – 1998
7.	Fire Control Centres and Rooms	BCA Spec. E1.8
8.	Fire Blankets	AS 2444 – 2001
9.	Fire Dampers	BCA Clause C3.15, AS 1668.1 – 1998 & AS 1682.1 & 2 – 1990
10.	Fire Doors	BCA Clause C3.2, C3.4, C3.5, C3.6, C3.7 & C3.8 and AS 1905.1 – 1997
11.	Fire Hose Reels (*)	BCA Clause E1.4 & AS 2441 – 2005
12.	Fire Hydrant System (*)	Clause E1.3 & AS 2419.1 – 2005
13.	Fire Seals	BCA Clause C3.15 & AS 1530.4 – 1997
14.	Lightweight Construction	BCA Clause C1.8 & AS 1530.3 – 1999
15.	Mechanical Air Handling System (*)	BCA Clause E2.2, AS/NZS 1668.1 – 1998 & AS 1668.2 – 1991
16.	Paths of Travel	EP&A Reg 2000 Clause 186
17.	Perimeter Vehicular Access (*)	BCA Clause C2.4
18.	Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001
19.	Smoke Hazard Management System (*)	BCA Part E2 & AS/NZS 1668.1 – 1998
20.	Smoke and/or Heat Alarm System	BCA Spec. E2.2a & AS 3786 – 1993
21.	Warning and Operational Signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 – 1997, BCA Clause C3.6, D2.23, E3.3 & H101.8

Notes:
* These essential fire safety measures will be subject to a fire safety engineering assessment.