

10758co002/dv/dv

15.10.2010

JBA Urban Planning
Level 7,
77 Berry Street,
North Sydney,
NSW-2060

Attention: Vivienne Goldschmidt

MEMO: ESD - PART 3A PRINCE OF WALES CAHMS DIRECTOR GENERAL REQUIREMENTS

Please find below initiatives in response to the Director General requirements for application MP 10_0096 at the Randwick Health Campus, High Street, Randwick relevant to the Ecologically Sustainable Design.

DG Requirement 5 – ESD (Item 1)

The project will be designed to comply with the deemed-to-satisfy provisions of Section J - Energy Efficiency of the Building Code of Australia 2010.

The development will incorporate ESD principles in the design. The design will be implemented as part of the construction by the selected contractor. The ongoing operation phases of the building will be managed by the hospital in accordance with the maintenance manuals.

DG Requirement 5 – ESD (Item 2)

The development will be considering the following ESD initiatives which will assist to minimise the buildings ongoing energy use and assist with the energy management of the building:

ELECTRICAL SERVICES:

1. All submains servicing distribution boards, mechanical boards and other major control cabinets shall be metered and be linked to the building management system (BMS) for energy auditing, energy monitoring and troubleshooting.
2. Cross-Linked Polyethylene (XLPE) and Low Smoke Zero Halogen (LSZH) cables shall be used in the electrical distribution systems in place of traditional PVC type cabling.
3. Motion sensors, timers and daylight sensors shall be used where appropriate to control the internal artificial lighting in the development to reduce energy usage. Lighting circuits shall be designed to provide high flexibility and not control large/multiple areas with one switch.
4. The building management system will have the ability to control lighting circuits within the major corridors of the extension building to allow the hospital to switch off lighting that is not specifically required at any point in time.
5. The lighting system shall incorporate energy efficient lamps, use of luminaires with high light output ratios, and be coupled with lighting controls in selected common spaces to reduce energy consumption.

6. External artificial lighting shall be designed to minimise light spillage and shall incorporate day light sensors.
7. Emergency lighting within the hospital will make use of long life LED fittings

MECHANICAL SERVICES

Following mechanical services initiatives are being considered for this project:

- High efficiency, low loss water cooled chillers, selected to give the optimum coefficient of performance.
- The use of efficient refrigerants that are compliant with the Kyoto protocols. (i.e. having low ozone depletion potential and low global warming potential).
- Outside air economy cycles on all appropriate air handling systems.
- Multi zone air handling units designed to provide the minimum amount of heating or cooling to zones, thus minimising the possibility of reheating.
- A fully automated Building Monitoring and Control system to schedule and optimise plant to maximise efficiency.
- A chiller optimisation system designed to minimise the specific energy used for cooling, by scheduling cooling towers and chillers in response to the load and ambient conditions.
- The use of variable speed drives on all appropriate fan and pump systems, coupled with high efficiency motors.
- High efficiency gas fired boilers to provide heating. The cost effectiveness of condensing boilers will also be investigated.
- The use of condenser water heat exchangers to pre-heat the incoming cold water feed to the domestic hot water system.

HYDRAULIC SERVICES

- 3 Star WELS rated water closets, having an average volume per flush of 4 litres.
- 3 Star WELS rated urinals, having an average volume per flush of 2 litres.
- 3 Star WELS rated tapware, having a flow rate of 9 litres per minute.
- 3 Star WELS rated showers, having a flow rate of 9.0 litres per minute.
- 50,000 Litres of rainwater storage and non potable water supply for irrigation & heat rejection.
- Gas boosted solar hot water system which provides 50% annual contribution.

ARCHITECTURAL

- Efficient facade treatments which will provide shading and improve thermal performance
- Provision of energy efficient glazing to improve thermal transmittance as required
- The square shaped footprint produces an efficient facade surface area
- Daylight glare control treatments such as blinds
- The internal planning locates primary patient and open work spaces to the perimeter to maximise opportunities for natural light. Enclosed spaces have been located in the centre of the plan.
- opportunity for patient and office areas to have access to external views
- the site is not of ecological value having previously been a quarry
- There will be no cut and fill and minimal removal of top soil
- Landscape planting will be appropriate to site and climatic conditions
- Where possible all timber and composite timber products will be sourced from sustainable timber supplies.

STRUCTURAL

The main structural ESD initiatives include the following:

Concrete

- Replacement of Ordinary Portland Cement (OPC) with supplementary cementitious materials.
- Use of at least 20% slag aggregates.
- Timber formwork to be from re-used timber, post consumer recycled timber or Forest Stewardship Council (FSC) Certified timber.

The use of recycled aggregates is generally not practical for structural applications and as such this initiative will not be pursued.

Steel

- Maximise use of high strength steel grades.
- 60% or greater of the fabricated steelwork to be supplied by a steel fabricator accredited to the Environmental Sustainability Charter of the Australian Steel Institute (Currently there are very few accredited fabricators in NSW. So this may not be practical to achieve).
- 60% of reinforcing steel to be produced using energy reducing processes in its manufacturer such as Polymer Injection Technology (Currently reinforcing steel is produced only by OneSteel. Once again this may not be practical to achieve).

The above steel initiatives are based on the current GBCA requirements. But it should be noted that to achieve any Green Starpoints with this system, at least 95% of the steel for a project must be sourced from a steel maker with a valid ISO 14001 Environmental Management system and be a member of the World Steel Association Climate Action Program (WSA CAP). Currently in Australia, only OneSteel and BlueScope comply with these requirements.

DG Requirement 5 – ESD (Item 3)

The environmental performance of the new development will be assessed by using the Environmental performance tool for government buildings, developed by the NSW Government.

The Environmental Performance Guide for Buildings (EPGB) is a high environmental performance guide for NSW Government Buildings developed by the Policy Services Division of the NSW Department of Public Works and Services.

As per TS-11, it is a mandatory regulatory requirement for all government buildings to provide an Environmental performance report (EPR) at the end of each design stage, in the form of an electronic Excel file. This will be undertaken by the project team.

For the proposed CAMHS development, EPGB performance reporting would address all of the five categories:

- Resource consumption
- Environmental loadings
- Quality of indoor environment
- Functionality
- Wider planning issues

Yours sincerely



Diksha Vijapur
ESD Analyst