Stage 3B ESD Principles Statement

Context:

Lismore is located within a valley surrounded by ridgelines. The town is subject to a specific microclimate which leads to higher than typical temperatures - as compared to the rest of the region, and severe fog.

It is a subtropical climate and experiences mild to warm temperatures ranging from an average annual maximum temperature of 25.4 degrees Celsius and minimum of 13.4 degrees Celsius.

Environmental Concept Design:

Following is a summary of the ESD strategies identified for Lismore Base Hospital. This describes how ESD principles will be incorporated into the design of the building.

Measures will be incorporated to minimise consumption of resources, water and energy.

Due to the nature of the building, certain limitations exist in terms of the built form and building services strategy. This has been a consideration when determining the most suitable ESD initiatives.

As a NSW health project it is also required that the project complies with the NSW Health Engineering Services and Sustainable Development Guidelines (Technical Series TS-11). The proposed ESD initiatives for the development are intended to assist in achievement of these requirements, and facilitate high environmental outcomes. A holistic approach to ESD has been taken. Strategies in environmental management, passive design, energy, water and transport have been considered.

ESD Strategies:

Environmental Management:

Environmental Management will ensure that the best outcomes are achieved.

_Commissioning and building tuning will be performed in accordance with relevant codes to ensure that the building operates efficiently.

_A building users guide will be made available to the occupants and staff with information on environmental features of the building, including how to occupy the building correctly.

Passive Design

Incorporating passive design principles is an effective method of reducing energy consumption and increasing quality of the indoor environment. It is imperative that the form of the building manages the impact of the external environment to reduce the requirement for space heating, cooling and lighting. Through the implementation of appropriate passive design, it will be possible to mitigate the impact of external weather conditions on the internal spaces to provide a comfortable internal environment with minimum energy consumption.

_Maximised daylight to increase the quality of the indoor environment and reduce reliance on artificial lighting:

The building has high levels of glazing to the facades. This will assist in providing daylight to the perimeter spaces. Lighting controls such as daylight sensors in perimeter zones should be incorporated to reduce the lighting demand.

_Thermal mass to stabilise indoor air temperatures:

The building has a high thermal mass, with floor and wall extents made from concrete. By allowing sun to warm the mass in winter and shading it in summer, more stable indoor air temperatures can be achieved, reducing the space heating and comfort cooling, and improving thermal comfort for the occupants.

_High performance materials to prevent thermal losses and gains through the building envelope:

Roof R Value to comply with section J as a minimum

Walls R Value to comply with section J as a minimum

Double glazed windows and high performance glazing where required.

Insulation will mitigate the impact of external weather conditions on the indoor environment.

Services:

Electrical Services:

Efficient lighting control strategies and effective monitoring will reduce electrical demand for the building:

_Efficient lighting – for external and internal purposes.

_Lighting zoning and sensors –Ensure that lighting is not on when it is not required e.g. in an empty room or space. Inclusion of motion sensors in rooms other than patient bedrooms will enable adequate control of lighting.

_Connection to a BMS – a BMS will collate the meter readings for easy interpretation and analysis.

_Services including security, access control, intercom, nurse call, distress alarm, etc to all comply with TS11 and required Australian and legislative requirements/standards.

Mechanical Services:

_The system proposed is based on the requirement to provide economical capital and running cost options, as well as simple maintenance (via level 7 plant) including future proof technologies.

_New Building Management Control System is proposed to be included and connect to the existing Hospital system.

_The mechanical services have been selected to be of the highest efficiency within the restrictions imposed by the nature of the facility.

Hydraulic Services:

Reduce water demand with water efficient practices and efficient fittings.

Quality of Indoor Environment and Places of Respite:

As part of the holistic approach to sustainability, the indoor environment will be maintained to a high quality. This enhances the comfort and wellbeing of occupants.

In addition to increasing the daylighting to the building, the following initiatives will be implemented:

_Noise control – Ensure that noise levels from building services are not excessive, or disruptive to occupants

_High frequency ballasts – Ensure that uncomfortable flickering does not disturb occupants

_External views – Allow occupants to feel connected to the outside environment

Materials:

Material selection will aim to reduce the environmental impact of the building's construction through the use of sustainable materials in construction, recycling and waste minimisation (construction and operation).

Adequate storage will be provided within the building to allow for storage of recyclable waste. This encourages good management of waste streams from the building.

Materials selection can also have a significant impact on the quality of the indoor of the building.

_Sustainable materials will be sourced where practical.

_Products will be selected which contain low levels of VOC's - Paints, adhesives, sealants, flooring, wall and ceiling coverings and mattresses.

_Flooring, joinery, furniture, ceilings, walls and partitions will be selected that are environmentally sensitive in their design and production. This includes recycled content, design for disassembly, longevity, and product stewardship.