

Your ref
Our ref 245103/RCW
File ref

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Dear Kate,

University of New South Wales - Science and Engineering Building – SSD 7518 Ecologically Sustainable Design Statement

This letter provides a response to the Section 6 requirements of the Environmental Impact Statement (EIS) within the Secretary's Environmental Assessment Requirements.

There are three distinct requirements within Section 6, which are addressed individually below.

Requirement 1

Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design and ongoing operation phases of the development.

Response

The key objectives of the Regulation are as follows:

- Careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment
- An assessment of the risk-weighted consequences of various options
- "Inter-generational equity", namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations
- "Conservation of biological diversity and ecological integrity", namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration
- Polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,
- The users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste
- Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that

enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems

The University of New South Wales (UNSW) has a commitment to sustainability in the planning, design and management of all new buildings on campus. In order to ensure a high environmental outcome for the proposed Science and Engineering Building, the University has chosen to develop and implement their project-specific sustainability framework.

This framework provides ESD guidance to the project team, from concept through to construction phases of the project. This framework consists of the following main objectives:

- Incorporate good design and management initiatives to encourage sustainable practices during the construction and operation
- Achieve a high level of Indoor Environment Quality, to promote the health and wellbeing of building occupants
- Achieve increasing levels of energy performance above the baseline standard to reduce environmental and economic impacts associated with excessive energy use
- Promote and provide facilities to encourage a shift towards sustainable transport
- Promote the reduction of demand on potable water through water conservation initiatives
- Encourage the use of environmentally preferable low-impact materials
- Encourage reduction of waste disposal to land, air and water through prevention, reuse and recycling and composting
- Encourage the protection and enhancement of biodiversity

ESD principles will be integrated into project with a transparent reporting and monitoring structure that can ensure that the ESD aspiration for the project can be delivered throughout the design, construction and operational phases of the project. This reporting framework will form part of the Environmental Management Plan for the project and will be updated which will be update for the various milestones for the project to track the successful deliver of the ESD initiatives.

Requirement 2

Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice.

Response

The development has been assessed against the Green Star Design & As Built v1 rating tool. As the building design is not fully developed at this stage, the design team has used a combination of available information, expected performance and previous experience to evaluate the building.

The preliminary assessment has shown the building incorporates a significant number of initiatives and principles identified in the various Green Star categories such that it is capable of demonstrating “Best Practice”.

Note that UNSW does not typically assess their buildings against an accredited rating system and does not expect to pursue a formal Green Star accreditation.

Requirement 3

Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy.

Response

The measures that would be assessed in terms of feasibility would include:

Architectural Design

- High performance facades with external sun shading and internal blinds
- Access to daylight and external views via floor to ceiling glazing
- Opportunities for mixed-mode ventilation in office areas

Mechanical Services

- High-efficiency central plant systems
- Low pressure drop ventilation systems with heat recovery
- Manifolded fume exhaust system coupled with low-flow fume cupboards to reduce conditioned makeup air requirements
- High levels of fresh air in both laboratories and offices
- Use of refrigerants with zero ozone depletion potential (ODP)

Electrical Systems

- Efficient LED lighting
- Intelligent occupancy detection and daylight control systems
- Energy sub-metering of building systems
- Spatial and structural provision for future installation of photovoltaic panels

Hydraulic & Fire Systems

- Water-efficient fixtures and fittings
- Use of borehole water supply to offset potable water use

Structural Systems

- Use of recycled steel and fly ash concrete

Materials

- Sustainable materials selection

Waste & Recycling

- Construction and operation waste recycling optimisation

Transport

- Reduced car parking provision
- Access via public transport

Furthermore, this building has significant parallels to the recently completed and adjoining MSEB, and as such incorporates elements benefited from the design development, review and operation of this building.

We trust that this statement satisfies the requirements of Section 6. If you have any questions, please don't hesitate to contact me.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'RW' or similar initials, followed by a stylized flourish.

Ryan Wilson
Senior Engineer