

## Macquarie University – Building Sustainability into Projects of all Sizes – A Simple Approach

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### **THE RIGHT ENVIRONMENTAL OUTCOMES, STUDENT AND STAFF EXPERIENCE, THE RIGHT INFORMATION ABOUT FACILITIES, DEMONSTRATING LEADERSHIP THROUGH VISION, THE RIGHT PEOPLE**

This Abstract addresses the development and early implementation stages of an Environmentally Sustainable Development Strategy and framework for Macquarie University's Built Environment. The key driver in the strategy's development has been creating the "right" strategy to align campus management and development with the University's strategic drivers.

The key implementation outputs to date have been the development of an on-line eco-footprinting calculator which allows the University to rate existing buildings, guide design and development systems as well as providing opportunities to integrate building management into learning and teaching activities.

#### **Background and Introduction**

During 2011, Macquarie University Property (MU Property) undertook a "Master Planning Process" to align Property Management and Development with broader University strategic goals. Part of this process was development of a framework to integrate Environmentally Sustainable Development (ESD) Strategies across all aspects of the building management cycle, from concept design, through to construction and asset management.

#### **The strategic process**

The vision and systems that were developed respond to:

- How does integrating ESD into the built and natural environments support the strategic business and operational drivers of the University? (why?)
- What environmental, economic, social and governance outcomes are required to support the achievement of the University's strategic goals? (what?)
- What frameworks and systems are required to support a robust and rigorous approach to achieving the identified objectives? (how?)

The stakeholder engagement during the process stages from "why" to "how" drove a requirement specification that outlined criteria which needed to be satisfied to determine the "right" framework to support the strategic vision of the University.

The process identified the following ESD Objectives for University buildings:

- High indoor and outdoor amenity and access
- Living Laboratory(ies) for teaching, learning and research
- Efficiency (in terms of economic, human and natural resource use)
- Ecological, transport and social links to the broader community

The framework for delivery was in four parts covering qualitative and quantitative systems and processes:

- a focus on indoor and outdoor environmental quality through benchmarking
- demonstration projects
- qualitative themes for community building and place-making and
- eco-footprinting

The concept of eco-foot printing has been expanded upon below.

#### **ENVIRONMENT – ECO-FOOTPRINTING – THE RIGHT TARGET**

The framework's keystone is the development of an online eco-footprinting tool. The tool uses international carbon accounting standards applied to information about occupancy, building materials and operational efficiency to provide a "planet" rating for a project. It can be applied while the building is being designed to guide decisions, after it is built as an auditing function, to guide refurbishment and other decisions. It is maintained as a database which manages the University's building information and feeds into sustainability reporting.

The real benefits for the University is that it can be applied to any size of project on a per meter or per occupant basis, and it does not need a "benchmarked equivalent" building, which sometimes does not exist. The target is a visionary one, where global supply and global demand meet at one planet building rating.

#### **STUDENT AND STAFF EXPERIENCE AND PEOPLE – THE RIGHT PEOPLE AND THE RIGHT LESSONS**

The key theme throughout the strategy is to provide opportunities for activities to link to learning, teaching and research outcomes. That has required the involvement of the right academics to work with the Property team during the tool's development. These academics are now working with MU Property on learning and teaching grants to see how curriculum can be developed to support the use of the tool by students to audit Campus Buildings. We are also looking to a program at University of California Berkley, where paid student interns look at the sustainability outcomes associated with a specific building, to see if it can be developed at the University to assist in achieving learning and teaching and efficiency outcomes with the lowest possible overhead.

#### **LEADERSHIP – PROOF OF CONCEPT AND NEXT STEPS**

The leadership task is to drive the University's market towards an understanding of the educational and environmental outcomes of the eco-footprint approach. To date, the University has done two proof of concepts through audits of 5 star Green Star targeted design. The message has been that on a whole of life cycle approach Green Star can sometimes fall far of the mark in terms of adding real value against an eco-footprint standard if credit criteria are not targeted appropriately. For example, the University's study found that if the operational energy targets were 4.5 star NABERS design, there was little life cycle difference in a specific building designed to target 5 star Green Star than in a "standard" non-Green Star building.