



RMIT University Skills for Sustainability

The Matter of Landscape: Sustainable Design Strategies for RMIT City Campus

Section 1: About the project

Summary

The Matter of Landscape links university operations, research, teaching and learning with community and industry engagement. The project began in 2013 with comparative precedent case studies of green roofs along with background research on various typologies. The project was then taken into a living laboratory context, where third-year students designed, built, maintained, and monitored the performance of green-roof modules. Stage two of the project in 2014 built on these outcomes on another site. Student-led environmental monitoring including the development and testing of techniques to evaluate biodiversity, productive landscape benefits as well as microclimatic conditions along with the construction of additional green roof modules. The student teams also developed Master Plans for RMIT city campus that identifies opportunities for campus greening. The final stage of the project in 2014 focused on undertaking Post Occupancy Evaluations of the roof garden pilot project.

Project partners

- Professor Sueanne Ware
- Dr. Judy Rogers
- Karolina Barkowicz
- RMIT Property Services Group
- RMIT Sustainability Committee
- RMIT Student Union

The project has been developed in Partnership with Property Services, RMIT's Sustainability Committee and Climate Adaptation Project that is situated in the School of Global, Urban and Social Studies. In addition industry engagement has been a focus from the outset with guest lecturers and sessional teachers drawn from industry. Students have also worked with industry professionals to develop their planting and cladding schemes as well as maintenance schedules for the green roof modules. RMIT student union is also a key partner having planted and maintained vegetable plots.



Institutional Profile

- HEI
- 23,440 students
(includes full and part time students)
- 2500 staff
- Urban



2014 Highly Commended Case Study

Section 2: The results

The problem

Many of the claimed sustainability benefits of green roofs are anecdotal and often generalized. This project focused on establishing frameworks for evaluation including case studies, environmental monitoring and post occupancy evaluation.

The approach

The project focuses on evaluating the performance of green roofs across the three poles of sustainability. Case study research involves evaluating existing projects using a sustainability indicator framework. The design and construction of green roof pilot modules by 3rd year students aims to test plant performance with a particular focus on biodiversity. Environmental monitoring and post occupancy evaluation follow construction of the modules. Industry engagement within course curriculum provided expertise, technical advice and ongoing teaching support throughout the project.

Our goals

The goals of the project are to develop approaches for evaluating the performance of green roofs and to involve students in a live research project.

Obstacles and solutions

OHS issues for roof spaces	OHS check of building roofs conducted by Property Services Group prior to construction of the pilot project. Access is limited. Balcony is open one afternoon per week. When open for a larger event security is present.
Climatic Conditions	On-going evaluation of the green roof modules will help to identify the most robust species and mitigate the impact of climate over time. Findings will be used to identify suitable species in the future.

Performance and results

Students designed and constructed green roof modules and fostered interdisciplinary learning and external industry collaboration. Students with the advice of industry proposed four different planting and cladding schemes, all focussing on enhancing biodiversity. The project teams and consultations also expanded beyond the RMIT LA Program to include RMIT's student union. Members of the Union constructed and maintain edible food plots, thus enhancing and adding to the diversity of students and disciplines involved.

Students also conducted a Post Occupancy evaluation of the site. Post Occupancy Evaluations (POEs) in external and public spaces are valuable to ascertain both physical micro-climatic and human comfort data as well as social occupation of the site. They measure both potential and effective design works. On going data collection includes: environmental performance - through measuring air quality, storm water quality, thermal comfort, noise reduction and biodiversity, sun-shade ratios at peak times, temperature as well as mapping user occupation and recording their activities in the space.



2014 Highly Commended Case Study

Section 3: The future

Lessons learned

Identified the need for building interdisciplinary dialogue and for strengthening learning outcomes through the sharing of knowledge and skills across disciplines.

Sharing your project

Dissemination of outcomes has been a key focus for TMOL 2. Strategies have included not only academic publications. The project provided a 'hands on' learning experience for the wider public through facilitating workshops such as the Green Roof Workshop at Melbourne Open House. A component of the project provided space for students to engage and collaborate with industry professionals, resulting in a greater awareness for the pilot project as well as professional support and feedback opportunities

What has it meant to your institution to be highly commended at the Green Gown Awards Australasia?

Recognition of the work completed to date is welcome and provided the impetus for stage 3 of the project that will build on what has been learnt to date.

Further information

<http://sustainability.edu.au/material/teaching-materials/matter-landscape-sustainable-design-strategies-rmit-city-campus/>

<http://thematteroflandscape.com>