



RMIT University Learning and Teaching The Matter of Landscape: Sustainable Design Strategies for RMIT City Campus



Institutional Profile

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

Section 1: About the project

Summary

This project involved designing, developing and evaluating green roofs to demonstrate best practice sustainable design. The project began with a series of comparative precedent and best practice case studies, background research on various typologies, growth mediums and plant materials. From these initial studies pilot green roof modules were developed. The modules tested suitable vegetation and alternative growth mediums. The project was then taken into a living laboratory context, where third-year students built, maintained, and monitored the performance of the green-roof modules.

Project partners

- Professor Sueanne Ware
- Dr. Judy Rogers
- Karolina Barkowicz
- Michael Howard
- RMIT Property Services Group



2013 Finalist's Case Study

Section 2: The results

The problem

Many of the claimed sustainability benefits of green roofs are anecdotal. This project focused on establishing frameworks for evaluation, linking research with learning and teaching outcomes.

The approach

Through the new application of existing products, technologies and services the project resulted in a more holistic approach to green-roof design and construction. The research team used a combination of planting palettes, soil combinations and cladding systems to improve the social and environmental sustainability of green roof tops, linking research with learning and teaching outcomes.

Our goals

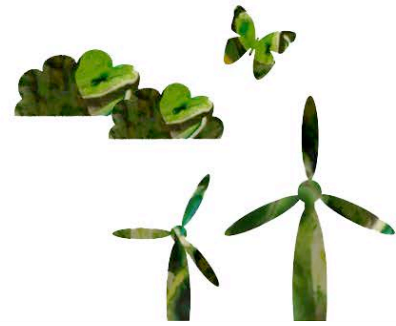
The goals of the project were to develop an approach for evaluating the performance of green roofs and to involve students in a live research project.

Obstacles and solutions

Obstacles	Solutions
<ul style="list-style-type: none"> OHS for roof spaces 	<ul style="list-style-type: none"> OHS check of building roofs conducted by Property Services Group prior to construction of the pilot project
<ul style="list-style-type: none"> Varying student skill sets and capability 	<ul style="list-style-type: none"> Tailor course assignments to include group projects ensuring various student skill sets are distributed among student groups
<ul style="list-style-type: none"> Less technology available to small scale pilot projects 	<ul style="list-style-type: none"> Schedule exclusive workshop time for students throughout the semester, maximizing opportunity to utilize and access university resources. Collaboration with other disciplines within the university and industry professionals to gain greater expertise and further the project outcomes

Performance and results

The project improved knowledge of shorter food miles, self-sustained carpeting planting schemes and ornamental garden qualities. Performance evaluation of the green roof pilot project enabled the development of design guidelines, identified future avenues of research and further contributed knowledge towards the sustainable benefits of green roofs. Academic refereed publications and conferences relating to sustainable discourse, policy development and green infrastructure are a result of this on-going research led learning and teaching initiative.



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Section 3: The future

Lessons learned

Stage two of the project aims to:

- Undertake cross evaluation and benchmarking of further best practice examples of existing green roofs both locally and internationally;
- Conduct further research into, and evaluation of environmental monitoring techniques for green roofs;
- Undertake further environmental monitoring of pilot green roof modules to include the development and testing of techniques to evaluate biodiversity and productive landscapes benefits as well as microclimatic conditions;
- Build and evaluate planting modules at a larger scale with species that can support biodiversity and edible landscapes, and contribute to more inhabitable microclimates and socially sustainable amenity.
- Test recycled materials and cladding systems.
- Develop and test a Post Occupancy Evaluation Systems for the roof garden pilot project to inform future design development, focusing on space utilization, stakeholder engagement and satisfaction. The Post Occupancy evaluation will involve the collection of both qualitative and quantitative data through a combination of methods including observation, interviews and focus groups.

Sharing your project

The project has been presented at a national urban design conference and an international sustainability conference. Key publications to date include:

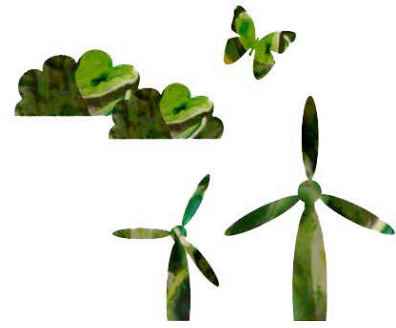
Bartkowicz, Howard and Rogers 'Greens Skins'; reconsidering green roofs as sustainable infrastructure' paper presented at 6th International urban design conference, Sydney, sept 2013. Published in conference proceedings.

Rogers, J 2013 'Green, Grey or Brown: Green Roofs as Sustainable Infrastructure' in C.A. Brebbia (ed) *Sustainable Development and Planning VI* WIT Press, UK.

The research from this project has contributed to the Growing Green Guide, Victoria's Guide to Green Roofs, Walls and Facades developed by the City of Melbourne.

The project outcomes have contributed to and informed current university building projects by providing industry professionals with a manual of best practice design and construction techniques that can be employed during green roof constructions.

A component of the project promoted 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. The informal mentoring program has resulted in a number of students gaining ongoing employment opportunities.



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What has it meant to your institution to be a Green Gown Award Australasia finalist?

Recognition of the work completed to date is welcome and provided the impetus for stage 2 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.wordpress.com/>