



Green Gown Awards
Australia

Student Engagement

2020 Case Study

WESTERN SYDNEY
UNIVERSITY



Campus-based Living Labs for teaching, research and engagement

An interest group within The Environment and Sustainability Research Theme identified Living Labs as a strategic opportunity a few years ago, leading to an international literature review which identified the range of applications worldwide. Definitions included 'collaborative testing of solutions in a living social environment', with 'stakeholders and end users involved in a process of co-construction'. Parallel to this, the emerging Environmental Sustainability team in Western's Office of Estate and Commercial was involved with these conversations, and chose to establish Living Labs as a core platform for engagement and collaborative inquiry into campus-based sustainability.

An organic process followed, with the ES team working to facilitate engagement in multiple campus situations with Academic and Technical staff who then included these situations into their teaching and learning curricula and in some cases research activities. Examples of internal and external collaborators are as follows. For an ecological remnant of significant cultural heritage near Parramatta River, students of Communication Arts undertook videography of critical conversations associated with the site, and Environmental Education students visited the site to discuss the opportunities around the stories and bush regeneration activities underway.

Associated with the Engineering hub in Penrith, solar installations (rooftop and carpark) have been made accessible with a group of electrical engineers investigating opportunities for optimisation. Adjacent to this site, a developing carpark solar installation is being monitored by a researcher to address urban heat issues.

Other engineering collaborations have included building energy modelling, use of CO₂ concrete for biosecurity structures, and a developing IoT and BIM modelling of the Penrith library. The nearby Werrington campus has a re-development process incorporating a principle of engagement through Living Labs.

On the peri-urban campus of Hawkesbury, long standing Living Labs associated with the established water recycling and commercial farm. These have been the focus of multiple student activities with the Sustainable Agriculture program, including propagating Chinese medicinal herbs, interrogating IoT installations for precision agriculture, aspects of regenerative agro-ecology, and the Show team; a student peer mentored group who take our cattle to regional shows.

To date, these initiatives have contributed to the establishment of a research partnership with Sydney Water Corporation regarding stormwater wetlands and nutrient offsets, along with contributing to an international collaboration on the cultivation of Chinese medicinal herbs.



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Environmental & Social Benefits

The benefits of Living Labs relate to the 3 top learnings outlined below. Firstly, Living Labs have led to a greater awareness by students and staff of the campus assets and resources available to them for teaching and learning resources, all of which operate within social and organisational contexts relevant to the broader community. This supports integrated knowledge and skills of value to the students' graduate attributes; developing their citizen scholarship and professional practice. These contexts also expose the students to the complex and embedded nature of real world problems, and therefore the need for multidisciplinary perspectives, teamwork and strategic partnerships. All initiatives address multiple SDGs due to their complex systemic nature, as reflected in the webpages identified above.



Leadership & Engagement

Our Living Lab strategy is not just a singular initiative, but a broad developing portfolio of collaborative engagement of relevance to all students, academic areas of expertise, and operational and professional staff. We know that we need to prepare our graduates to have attributes ready to engage the considerable civic challenges we face in our society. By developing this program systematically and collaboratively we can 'walk the talk' in engaging complex issues of environmental sustainability in our campuses as a platform for engaging those same issues in our homes, organisations, and communities.

Wider Societal Impact

The most important aspect of Living Labs is as one of many contributing factors to the experiences of our students and their graduate attributes around their ability to engage complex embedded social and environmental issues in their professional lives. As Alumni, the diaspora of graduates is the most important contribution of Universities to the local, regional and international communities from where their students come. Regionally, we hope these initiative help Western to continue to enhance its 'street credibility' as a pragmatic teaching and research organisation addressing the emerging issues of our time, having local community, industry and government coming to Western for collaboration.

As an integrated operational and teaching and learning strategy, we see it as an example of the confronting 'new normal' faced by traditional Universities, not just in the face of the current pandemic, but how we continue to redesign our delivery and service models to stay relevant to the changes in our society and environment.



Top 3 Learnings

Accessibility and breadth of environmental, cultural, and technical resources on our campuses

Opportunity for developing citizen and professional practice in embedded campus situations

Criticality of collaboration in supporting sustainability outcomes and graduate attributes