Executive Summary

RMIT has a vision to be urban in orientation and creativity, shaping sustainable cities and drawing inspiration from the challenges and opportunities they provide. Bold high level commitments clearly articulated by the University Executive through the Australian Technology Network (ATN) Declaration of Commitment and the Strategic Plan have driven substantial and systematic changes. From an emissions reduction target, to the largest Energy Performance Contract in the Southern Hemisphere. From a ‘community of practice’, to dedicated sustainability staff in the Learning and Teaching Unit. From research interests, to sustainability research institutes and campuses as living laboratories. From a city block, to global partnerships solving urban sustainability issues.

This briefing looks at the journey RMIT has taken to embed sustainability across Learning and Teaching, Research and Operations since 2008 and highlights current initiatives.

Highlighting the Sustainability Journey

In January 2008 Professor Margaret Gardner, Vice-Chancellor and President of RMIT University signed the Australian Technology Network (ATN) Declaration of Commitment to Local, National and Global Sustainability, which pledged to make sustainability a focus in the University’s teaching and learning programs, research, infrastructure and operations. Since then a range of initiatives had taken place across the organisation to embed sustainability.

2008
- Vice Chancellor signs ATN Declaration of Commitment to Local, National & Global Sustainability.
- ATN Emissions Reduction Target set.
- Grassroots level ‘community of practice’ develops to support academics in embedding sustainability in the curriculum.

A component of the ATN agreement was a target that RMIT would reduce its greenhouse gas emissions by 25% by 2020 (2007 baseline). To drive these high level commitments, the University has made significant investments in infrastructure and process improvement. The establishment of the Sustainability Committee (the Committee) in 2009 brought together leaders from across the University and tasked them to embed sustainability within their portfolios. A clear mandate was set in the Strategic Plan that RMIT would address sustainability in its urban context and be at the forefront of technology and design to tackle global problems.

2009
- Sustainability Committee formed.
- RMIT becomes jointly the first Fair Trade University.
- School of Fashion and Textiles begins 'Curriculum Change to Embed Sustainability' project.
- Infrastructure Plan states target Green Star ratings.
- Operational Working Groups established on infrastructure, procurement, climate change adaptation and green IT.
- Strategic Sourcing and Procurement add sustainability to core position descriptions.
Under the auspice of Committee operational working groups were established on issues, such as infrastructure, procurement, climate change adaptation and green IT. The key to the success of these groups (which continue today) is that they bring together operational staff and academic experts in relevant fields. For example, experts from the Climate Change Adaptation Research Group were brought together with the Internal Audit and Risk Department. The Climate Change Risk Management Plan produced by the group is unique in the global tertiary sector. The findings have been embedded into the University’s enterprise risk register and the group is drafting a Climate Change Adaptation Plan for RMIT.

2010

- Sustainability Committee establishes regular reporting to VCE.
- Strategic Plan consultation process commences, the Committee provides input.
- RMIT joins the Victorian Greener Government Buildings (GGB) Program.
- The Rooftop Renewable Energy Training Facility is constructed for the School of Vocational Engineering.
- Sustainability embedded into Bachelor of Arts (Textile Design).
- Advanced Manufacturing Precinct achieves 5* Green Star Design rating with first commercial installation of hybrid solar lighting technology.
- Francis Ormond Building the first integrated fit out of a heritage building to achieve a 5* Green Star Design rating.

The breadth of change across Learning and Teaching since 2008 has been substantial across all Colleges and Schools. Initially a grassroots ‘Community of Practice’ generated practical case studies of how sustainability could be embedded into the curriculum. One early success was the School of Fashion and Textile’s Bachelor of Arts (Textile Design) program winning both the Premier’s Sustainability Award and the Green Gown Award. The Sustainability Committee then commissioned audits of sustainability in Learning and Teaching and Research, which generated interest and activity at senior levels. The Dean of Learning and Teaching joined the Committee in 2012 and has since utilised core business activities, such as Work Integrated Learning and TEQSA audits to encourage a consistent approach to Education for Sustainability (EFS). In 2013 a Senior Advisor, Strategic Initiatives in the Learning and Teaching Unit was tasked with embedding sustainability further and building capacity which has gained significant traction.

2011

- Strategic Plan published with sustainability central to the vision.
- Sustainability outlined as a core value in the University Academic Plan and Research Plan.
- Climate Change Risk Assessment project commences with Internal Audit and Risk and the Climate Change Adaptation Research Group.
- RMIT hosts Green Skills Symposium.
- School of Fashion and Textiles Sustainable L&T Project wins Green Gown and Premiers Sustainability Award.
- RMIT becomes the sole educational sponsor of the Sustainable Living Festival.
- RMIT hosts Fairly Educated Conference (Fair Trade Student Initiative).
- RMIT becomes a signatory to the City of Melbourne’s 1200 Buildings Retrofit program.
- Audit of sustainability in research undertaken.

A clearly articulated proposition that sustainability research attracts funding was evidenced in a research audit commissioned by the Sustainability Committee in 2013. The audit showed continued growth in sustainability research grant funding across the University, particularly in the field of ‘sustainable cities’. A total of 608 (or 41.7%) of funded projects across the university between 2007 and 2011 were classified as related to sustainability. These projects attracted over $56 million in research funding (37.06% of the University’s total grant income) and 15% of weighted research publications over the five years under review.
As a tangible measurement of the success of sustainability at RMIT there have been significant reductions in resource consumption. According to figures from 2013, greenhouse gas emissions have reduced by 18% based on a 2007 baseline. During the same period energy is down by 17% and water has reduced by 10% based on EFTSL.

The Sustainable Urban Precincts Program (SUPP) will meet and exceed the ATN 25% emissions reduction target ahead of the 2020 deadline. Annually reducing RMIT’s CO₂ by 30,000 tonnes per year, making a significant contribution to the City of Melbourne’s zero net emissions goal. Leveraging the infrastructure works are five Learning and Teaching Projects, six research projects and 10 PhD Scholarships which are underway to address broad sustainability issues, such as behaviour change, building retrofits and green IT.

The University has had a long-standing commitment to ensure that changes to the built environment demonstrate leadership excellence in sustainable design and innovation. RMIT values the Green Star framework, as a clear and consistent model to recognise sustainability achievements. RMIT’s Design Hub has achieved a 5 Star Green Star Rating and is an exemplar of design excellence, having since been awarded the Australian Institute of Architects’ Victorian Architecture Medal.

The Swanston Academic Building (SAB), RMIT’s latest 5 Star Green Star benchmark education facility, provides a world-leading learning facility with high utilisation rate and exceptionally high user satisfaction. Winner of the Premier’s Sustainability Award, the building delivers a carbon intensity approximately 35% lower than average. Through a virtual timetabling strategy the project achieved a 15% space saving, before
construction, resulting in $30 million in cost savings. RMIT is currently participating in the Green Star Interiors and Communities pilot to transfer knowledge, demonstrating the University’s commitment to improve community and industry outcomes.

2014

- GGB Project is launched and renamed Sustainable Urban Precincts Program (SUPP) to acknowledge broader impact of project on the sustainability of RMIT.
- RMIT joins pilot of the GBCA Green Star Communities and pilots Interiors rating tool on New Academic Street Project.
- Learning and Teaching Unit creates sustainability toolkit, fellowships program and professional development resources.
- Committee funds the School of Property Construction & Project Management investigate the sustainability impact of RMIT alumni in industry.
- Ten three and a half year sustainability PhD scholarships are awarded to candidates, funded through SUPP.
- Development of a Climate Change Adaptation Plan commences.
- Urban Learning Lab project develops a methodology for evaluating sustainability in the Post Occupancy Evaluation process.

The most valuable outcomes from the Sustainability Committee activities have been generated from the ‘Living Laboratory’ projects. Utilising University infrastructure for academic and research projects not only provides research benefits, industry case studies and student experiences, but also provides high quality outcomes for the operational functions of the University.

The ‘Matter of Landscape Project’ with the School of Landscape Architecture has, since 2012, been continually evolving. Funded by the Committee, the project has provided hands-on experience for undergraduate students and a practical research space to study various growing conditions for green roofs and walls. The industry outcomes have been equally valuable; the project produced a comprehensive Sustainable Landscape Design Standard for Property Services and they are now developing a Post Occupancy Evaluation process for outdoor infrastructure as part of a continuous improvement process. The project conducted a Green roof feasibility study on the roof of RMIT Building 2 as part of the City of Melbourne’s Growing Guide, which is now used as a practical case study for other organisations in Melbourne.

Learning and Teaching – Sustainability Fellowships Awarded

The Sustainability Committee is currently funding a trial of Learning and Teaching for Sustainability (LTfS) Fellowships. The roles will focus on the collaborative advancement of sustainability in the curriculum across RMIT, or within a specific discipline or industry-profession. They will provide support to leading educators who undertake strategic, high-profile activities in areas of importance to the University in LTfS.

Dr James Wong from the School of Property, Construction and Project Management and Dr Yoko Akama from the School of Media and Communication have been awarded Learning and Teaching for Sustainability (LTfS) Fellowships for 2014. They will be developing LTfS curriculum resources to enhance the student learning experience and outcomes for sustainability - with the intention of enhancing their graduate employment outcomes.

The primary focus of the Fellowships is on collaborative and innovative projects with an industry-focus that advance LTfS in the curriculum across RMIT. The Fellows will create strategic, high-quality curriculum resources and learning activities that relate to sustainability, both within the University and across the global tertiary sector.
Learning and Teaching – Project Updates

Professional Development

The Learning and Teaching for Sustainability (LTfS) project will be conducting a workshop at this year’s Learning and Teaching Expo, titled ‘Enabling Graduates… Learning and Teaching for Sustainability – Naturally…’ The workshop is for staff who are interested in developing assessment tasks and curriculum that enhances student learning outcomes in Sustainability as it relates to their discipline.

The workshop focuses on student, alumni and staff experience and ideas that excite and increase relevant graduate learning outcomes in Sustainability and their subsequent contributions to their inter/disciplinary professional, industry and communities.

Following on from this workshop the first LTfS Professional Development workshop ‘Enabling Graduates: Designing Learning and Teaching for Sustainability’ is scheduled for the 21 October 2014. This will be included in the ongoing developME program and will run once a semester in each subsequent year.

Graduate Sustainability Industry Impact Study

One of the six Graduate Attributes developed by RMIT explicitly addresses issues of sustainability. This attribute, ‘Environmentally Aware and Responsible’, subscribes the university to developing its graduates’ abilities to recognise environmental and social impacts and to provide leadership on sustainable approaches to complex problems. The Sustainability Committee is funding the ‘Sustainability Beyond the Boundaries’ Graduate Sustainability Industry Impact Study to assess whether sustainability capabilities developed in undergraduate programs are acknowledged and used by professional graduates.

The proposed project will be run across the School of Property, Construction and Project Management (PCPM) and the School of Global, Urban and Social Studies (GUSS). The study will involve students from six disciplines and will be conducted by a key researcher in each School. The first stage, to be undertaken in 2014, aims to develop a methodology for assessing the degree to which RMIT’s programs deliver on this attribute, and to test the methodology on two sample courses.

The outcome of the project, specifically the tested survey methodology, will contribute to ensuring that the EIS activity is effectively and efficiently delivering the required graduate attribute, which in turn delivers environmentally and socially responsible decisions, actions and behaviour within the context of RMIT, and in the professional situations of the graduates.

Nothing comparable to this depth of assessment of educational activity has been attempted in the field of sustainability before (and possibly not in any field). There are many examples of assessments of students’ perceptions at the end of a course, and sometimes at the end of their program, but not in the context of their professional roles where their competencies have been related back to specific educational experiences, i.e. the EIS curriculum they experienced.

The findings of the project will inform the Program Annual Review process, and will provide evidence of program quality, viability and relevance against the graduate attributes. This will assist in ensuring that we are offering students the most appropriate, quality experience that will assist them in determining their own future.

Multidisciplinary, Multimodal, Mobile Learning (M3) e-assessment for LTfS

Increasingly, students and staff across the higher and vocational education sectors are using mobile learning (e.g. Blackboard mobile - mBb) for collaborative, truly global learning. The ‘M3 e-assessment for LTfS’ project will develop and trial the efficacy of one multidisciplinary, multimodal mobile Learning and e-assessment resource that will subsequently be transferable to other discipline-combinations, and professional-industry collaborations. The project will involve staff from across disciplines to create e-assessment tasks that will evidence their students learning outcomes.

Students and staff will be able to connect environmental, socio-cultural and economic benefits of sustainability across diverse disciplines and industries without expensive, environmentally intense, complex and repetitive on-campus sessions. Self-selection of project topics within given parameters will enable learners to create innovative LTfS solutions to relevant educational or industry issues.
Research – SUPP Project Highlights

Within the Sustainable Urban Precincts Program (SUPP) a total of $2,730,994 has been allocated to fund six research project and ten associated PhD scholarships.

SUPP Research Project Framework

The two project examples (detailed below) demonstrate the complementary nature of the multi-disciplinary projects. These research projects will be used to leverage additional funding and to create a hub of sustainability research innovation.

Buildings Engineered for Urban Sustainability

**Performance Assessment, Forecasting and a Toolkit for Selection of Performance-Based Retrofits.**

**Project Leader:** Dr Ian Ridley, School of Property Construction and Project Management

The target outcome of the research project is to develop design tools and methods that significantly advance the performance of building energy retrofits. The analysis will strengthen the understanding of the links between productivity, energy efficiency and occupant satisfaction on the RMIT campus.

iCO2mmunity

**Designing Adaptive and Responsive Environments for Greener Behaviours.**

**Project Leader:** Dr Flora Salim, School of Computer Science and Information Technology

Firstly, the project will investigate methods for monitoring individual and group carbon footprints in relation to their daily activities and behaviours, utilising technology to localise user movements, space occupancy and energy use within RMIT.

Secondly, the project will engage building users on sustainability issues by creating awareness of greener behaviours and choices through:

- delivering personalised and persuasive location-based services on smartphones and/or public displays
- testing new organic user interfaces that sense user’s presence to provoke curiosity and engagement with the information being delivered.
Event Highlights – Global Collaboration Series

As part of the Sustainable Urban Precincts Program, AECOM (one of the Industry Partners and Technical Peer Reviewers) are hosting a series of Global Collaboration sessions at RMIT. Previous sessions have been wide-ranging and structured to provide the maximum benefit to the University discussions. It is clear that there is strong alignment between RMIT’s strategic objectives and those set by similar tertiary institutions in the United States.

On 31 July 2014 a teleconference was held with the Senior Engineer from California State University with attendance from Property Services and academic staff with related research interests from across RMIT. California State University has delivered multiple Energy Conversation Measures through Energy Performance Contracts (EPC) over the last 15 years. The session gave an overview of the infrastructure renewal program across 11 of the University’s 23 campuses.

Staff Highlight

Michael Anderson has been appointed at the new Manager, Utilities Measurement and Verification in the Sustainability Team in Property Services. He serves on the Sustainability Committee in the Carbon Management Operational Working Group.

Michael will be responsible for the measurement and verification of the EPC component of the SUPP. The role also supports the delivery of the University's commitment to sustainability and resource reduction, including internal and external reporting requirements for energy and water consumption.

Michael has a Bachelor of Applied Science with Honours in Energy Management from the University of Otago, New Zealand. He is also a Certified Measurement and Verification Professional through the Energy Efficiency Council and a Green Star Accredited Professional through the Green Building Council of Australia.

Funded Projects

The following projects have been approved by the Sustainability Committee and will progress throughout 2014:

- SAB Urban Learning Lab  Dr Usha Iyer-Raniga / Dr Ian Ridley (PCPM)
- Matter of Landscape 2  Prof SueAnne Ware (Landscape Architecture)
- Climate Change Adaptation Planning 2  Prof Darryn McEvoy (Global Cities Research Institute)
- Sustainability L&T Fellowship  Dr Yoko Akama (Media & Comms) Dr James Wong (PCPM)
- Graduate Sustainability Industry Impact  Dr Sarah Holdsworth (PCPM)
- M3 e-assessment for Learning & Teaching for Sustainability  Dr Jude Westrup (Learning & Teaching Unit)
- Sustainable Living Festival and the Green Innovators Showcase  Kelly Bosman – DSC Communications

Key Dates and Events in 2014

- Tertiary Education Management Conference  31 August
- Sustainability Committee Meeting  16 September
- World Green Building Week  22-27 September
- Ride to Work Day  15 October
- National Greenhouse and Energy Reporting (NGER)  31 October
- ACTS Conference and Green Gown Awards  5 November
- Deadline for utilities retail agreements re-procurement.  14 November
- Sustainability Committee Meeting  18 November
- Engineers Australia Convention – RMIT Event Partner  24-28 November
Key Performance Indicators
Comparison of annual consumption data based on intensity per m² or EFTSL

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<th>Carbon Emissions (kg CO2-e/m²)</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014 Forecast</th>
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<td>RMIT emissions*</td>
<td>184.47</td>
<td>163.74</td>
<td>151.06</td>
<td>149.44</td>
<td>151.99</td>
<td>136.75</td>
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<td>-1.08%</td>
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<td>Reduction from baseline (%)</td>
<td>-18.11%</td>
<td>-18.99%</td>
<td>-17.61%</td>
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<td>-25.58%</td>
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* Carbon emissions take into account the purchase of GreenPower

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<th>Electricity consumption (kWh/m²)</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
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<th>2012</th>
<th>2013</th>
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<tr>
<td>RMIT consumption</td>
<td>136.59</td>
<td>133.76</td>
<td>138.14</td>
<td>140.53</td>
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<td>126.82</td>
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<td>Annual reduction (%)</td>
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<td>1.73%</td>
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<td>2.88%</td>
<td>2.07%</td>
<td>-7.16%</td>
<td>-3.34%</td>
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<td>297.27</td>
<td>270.74</td>
<td>277.21</td>
<td>285.15</td>
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<td>-8.01%</td>
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<td>RMIT consumption</td>
<td>5.71</td>
<td>5.45</td>
<td>5.04</td>
<td>4.94</td>
<td>4.76</td>
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<td>-16.60%</td>
<td>-13.45%</td>
<td>6.05%</td>
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