

November 2008

**Welcome to the Centre for Design's quarterly e-newsletter:**

Another busy period for the Centre for Design has, this quarter, coincided with the global credit crunch, raising the question of implications for the transition towards a more environmentally sustainable Australia. More than ever, we need to take a long term view of economic, social and environmental progress. New research at the Centre for Design includes life cycle costing of environmentally sustainable housing, providing us with more evidence of the need to think long term in our policies and decision making (see 'Lifetime Affordable Housing' in this newsletter).

I hope you enjoy our newsletter update,

Ralph Horne, Director, Centre for Design.

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# More than a Roof Overhead

At 30 June 2006, the resident Indigenous population of Australia was 517,200 or 2.5% of the total population. Of these, just under a third live in what is classified as remote and very remote parts of the country, where they experience health, life-expectancy, education and living conditions far below those of the majority of other Australians. Crowded and poorly maintained housing is both a symptom, and an ongoing cause, of severe social disadvantage. As Paul Pholeros argues, "If people live in Third world conditions in overcrowded, poorly built and maintained houses, then it is not surprising that they suffer the same health and social problems as people in developing countries".

A new Australian Research Council grant funded project is commencing in the Centre for Design. The 3-year project "More than a Roof Overhead: Meeting the Need for a Sustainable Housing System in Remote Indigenous Communities" is led by Prof John Fien, with Dr Esther Charlesworth, A/Prof Ralph Horne, Prof Ron Wakefield and a group of other researchers from Charles Darwin University, ANU, and industry partners. It follows on from a series of project activities by these researchers through the Australian Housing and Urban Research Institute and with Northern Territory Housing.

Where much research on Indigenous housing in the past has concentrated on individual elements of housing provision (such as health, culture, design, repairs, etc), this project is based upon a broad, whole-of-system and interdisciplinary approach in research on the delivery and management of remote Indigenous housing where the key challenge is to design, build and manage housing as an integrated and sustainable system.

The **aim** of the research is to ensure that current and future investments in housing can maximise both:

- (i) housing outcomes, in terms of increased numbers and improved functionality and longevity, as well as
- (ii) non-housing outcomes, such as improvements in family well-being, health, education and economic development, that are associated with improved housing

The **outcomes** of the project will include:

1. Guidelines for appropriate and effective consultation with, and Indigenous participation in, housing decisions;
2. Strategies for leveraging investments in housing as a driver of employment, entrepreneurship, and regional and community development in and around remote Indigenous settlements;
3. Guidelines and protocols for developing and enhancing education, training and workforce development programs for remote Indigenous Australians to support housing-related employment;
4. The development of decision support tools to support the development of innovative approaches to the procurement, design, construction and management of houses to maximise shelter and non-shelter outcomes for families; and
5. Recommendations for the review and development of policy goals and programmes through the life of the project.

In addition to the Universities involved, partners include Territory Housing, Western Australia Department of Housing and Works, Indigenous Business Australia, the Centre for Appropriate Technology, and Bawinanga Aboriginal Corporation. The project team is currently seeking applications for 3 PhD scholarships and one research officer to work on the project.

For further information, please contact [John.Fien@rmit.edu.au](mailto:John.Fien@rmit.edu.au) or [Ralph.Horne@rmit.edu.au](mailto:Ralph.Horne@rmit.edu.au).

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# Sustainable Built Environments

## Built Environment Industry Innovation Council

Senator Kim Carr has appointed a new body, the Built Environment Industry Innovation Council, the first of a number of Industry Innovation Councils, as are part of the Government's strategy for creating an innovation culture in Australian business and building our national innovation system. Ralph Horne, Centre Director, has been invited to join the Council which will focus on industry responses to key priority challenges including climate change, sustainability, social inclusion, regulatory reform and productivity.

## Creed's Farm

The Hornery Institute has assembled several partners to establish a new neighbourhood centre at the Aurora development in Melbourne's northern suburbs. The 'Creeds Farm Living and Learning' Neighbourhood Centre will service a community of 25,000 people, and one of the key design objectives of this project is to demonstrate sustainable design practices through the building.

The Centre for Design carried out a thermal performance assessment of the Creeds Farm Neighbourhood Centre with the aim of assisting the designers to make informed decisions in their pursuit of a more thermally efficient building. Several initiatives identified in this analysis have been incorporated in the building design.

Using AccuRate modelling software, the Centre for Design adopted an iterative approach to modify the building to reach its performance target, which was nominated as the same level of thermal performance as that of a 7-star home of similar size.

The Centre for Design worked closely with architects Tandem Design Studio to ensure that construction and design options being investigated were within the scope of this project. The result is a design with tailored thermal performance initiatives integrated into the building from the outset.

The thermal assessment was conducted very early in this project which provided a number of key benefits in both design outcomes and planning process. In particular, design modifications to improve the building thermal performance have been identified before any detailed design and costing work has commenced. For Further information, please contact [Karen.Rosenberg@rmit.edu.au](mailto:Karen.Rosenberg@rmit.edu.au).

## Accelerating Sustainable Buildings in Local Government Sector (ASB)

The ASB at RMIT is a participatory action research project with four Local Governments Darebin, Manningham, Moreland and Yarra. The project seeks to explore barriers to sustainable building outcomes for local government and to develop and pilot practical means by which councils can improve their building processes to achieve more sustainable outcomes.

Local government is the level of government most connected to the community and these four councils are all leaders in aspects of sustainability. This research project is very practical in nature, capitalising on the skills and experience of the council practitioners as well as the breadth of research of the Centre for Design at RMIT. For further information about the project please contact [Robyn.Evans@rmit.edu.au](mailto:Robyn.Evans@rmit.edu.au).

## Green Loans Audience Research

The Centre for Design at RMIT is working with the Institute for Sustainable Futures at UTS, Queensland University of Technology, University of Tasmania, University of South Australia and Murdoch University on a project with the Department of the Environment, Water, Heritage and the Arts to conduct research relating to the Green Loans program. The Green Loans program will assist Australian households to make their homes more energy and water efficient. For further information, please contact [Helaine.Stanley@rmit.edu.au](mailto:Helaine.Stanley@rmit.edu.au).

## Building Assemblies and Materials Scorecard

The aim of BAMS is to establish a definitive method and reporting format to assess the environmental performance of building assemblies. Developing from initiatives such as the Green Guide in the UK and MRPI in the Netherlands, BAMS uses Life Cycle Assessment (LCA) to ensure consistent and science-based evaluation of construction options and for use in other building rating tools including Green Star. BAMS scorecards will be invaluable to project teams aiming to optimise total building performance over life, and in the future to assist building products suppliers differentiate high-performing products and assemblies. BAMS has the potential to eventually affect every major stakeholder in the Australian building sector. It has the ability to be linked within performance and best practice. For further information, please contact [usha.iyer-raniga@rmit.edu.au](mailto:usha.iyer-raniga@rmit.edu.au).



Image courtesy of Tandem Design Studio

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# Climate Change and Social Context

## Lifetime Affordable Housing (LAH)

*Lifetime Affordable Housing in Australia*, an ARC funded study, is providing essential research to inform policy enabling Australia to provide high performance urban housing within current and future economic and environmental limits. We are presently establishing links with developers, builders, architects and other industry players as part of our brief to engage with key stakeholders. To date we have established a number of in-kind arrangements whereby expertise and data can be transferred from industry to academia and visa-versa, and we are continuously seeking to include new organisations in these partnership arrangements.

The Lifetime Affordable Housing team are very pleased to welcome the arrival of Bronwyn Meyrick to the research team. Bronwyn graduated from RMIT University in 2004 with a

Bachelor of Social Science (honours). She has since worked as a tutor with the RMIT School of Global Studies, Social Science and Planning and as a research officer for not-for-profit and private sector international development organisations. Since early 2007, Bronwyn has worked for the Victorian public service, most recently with the Victorian Office of Housing. Bronwyn joined the Lifetime Affordable Housing project in September 2008. Her PhD will focus on how perceived trade-offs between housing affordability and environmental performance, in both design and locational terms, can be overcome by market and regulatory mechanisms. This work will feed directly into Research Theme 4: Policy and transition mechanisms.

For any queries related to Lifetime Affordable Housing please contact [john.morrissey@rmit.edu.au](mailto:john.morrissey@rmit.edu.au)

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## Life Cycle Assessment

### **BELCADS: How to adapt your urban planning strategy to climate change without hurting the environment**

Evidence of climate change is appearing in many regions across the globe and there has been development of models to inform adaptation planning technologies and projects, such as new rating tools for the thermal performance of buildings or proposed erections of sea walls. However, the greenhouse gas implications of these adaptation strategies have generally been neglected. In response to this, the Global Cities Institute (GCI) commissioned the Centre for Design to develop a simple aid for planners and developers to assess the possible impacts of building and development options under possible climate change scenarios. The proof of concept tool, called Built Environment Life Cycle Assessment Decision Support (BELCADS) for Climate Change Adaptation (CCA) projects, has just been finished and is now entering its testing phase.

Using Life Cycle Assessment (LCA) methodology, the simple excel tool analyses suburban development designs under both present and future conditions. Two scenarios were chosen in the tool to reflect possible climate change outcomes: rise in temperature and the increased prevalence of severe weather events. By looking at the life cycle performance

of a suburb under both the current and the expected climatic conditions, BELCADS helps to identify the benefits of both adaptation and mitigation. For example, initial testing of the tool on a residential suburb in the Melbourne climate indicated that the adaptation strategy of increasing the thermal performance of buildings, such as raising mandatory star ratings, might not deliver significant benefits under the future climate.

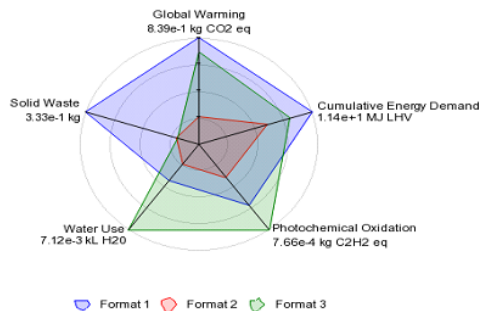
The final tool will be applicable to new building designs as well as refurbishment projects with particular reference to the Asia-Pacific region. Although in this tool LCA has been used to assess environmental impact in terms of global warming only, it could be readily expanded to include other indicators such as water use, fossil fuel depletion, eutrophication etc.

The proof of concept tool will now need to be populated with datasets to make it applicable to a limited range of scenarios in one geographic location and capable of upscaling to full functionality across the Asia Pacific region. The Centre for Design is inviting all interested local councils to participate in this study. If you are concerned about how to achieve optimal outcomes for your planning strategies, considering both the current and future needs of your community, please contact Dr Usha Iyer-Raniga at the Centre for Design.

# Sustainable Products and Packaging

## PIQET activity

As the word spreads on the practicalities and usefulness of the Packaging Impact Quick Evaluation Tool (PIQET) developed at the Centre for Design in partnership with the Sustainable Packaging Alliance, the hub of activity around the tool continues to grow. An update on activities is as follows:



- **New subscriptions:** We are in constant discussions with brand owner companies and packaging manufacturers on the way PIQET can assist their organization in the ability to improve the understanding of the environmental impacts associated with packaging designs. A major packaging manufacturer has recently signed on to use PIQET in their business and we are in discussions with several others. If you would like to learn more about subscribing to PIQET please contact [Karli.Vergheese@rmit.edu.au](mailto:Karli.Vergheese@rmit.edu.au)
- **Services capabilities:** Another way to access PIQET is via our PIQET Services whereby we undertake the PIQET assessment for you. This provides you with the opportunity to learn more about the benefits of PIQET prior to taking on a yearly subscription. Priced on a fee for service arrangement any number of packaging system format designs can be modelled with a PIQET results and interpretation report being prepared. If you would like to learn more please contact [glenn.di-maurohayes@rmit.edu.au](mailto:glenn.di-maurohayes@rmit.edu.au)
- **Material and processing LCA data:** We regularly update the underlying life cycle inventory databases of materials, converting processes, transport, and waste management embedded into PIQET. One way for you to become involved is to have your specific materials and/or processes included in

the PIQET database. If you would like to learn more about please contact [Karli.Vergheese@rmit.edu.au](mailto:Karli.Vergheese@rmit.edu.au).

- **Database and tool functionality upgrades:** We are currently planning our next bi-yearly updates and upgrades to PIQET that will become effective in March 2009.
- **Public workshops:** We have held two public Sustainable Packaging Design workshops with the Sustainable Packaging Alliance (July 08 Melbourne and October 08 Sydney) with the second one also held in conjunction with the Australian Institute of Packaging. These were very successful and provided participants with an introduction to sustainable packaging and life cycle assessment followed by an afternoon session that included a hand-ons opportunity to use PIQET. This interactive session provided participants with an introduction to PIQET followed by them using and entering their packaging system formats for assessment in the tool. We are currently planning dates for future workshops so if you are interested in attending please provide your details to [Karli.Vergheese@rmit.edu.au](mailto:Karli.Vergheese@rmit.edu.au)

## PIQET 2

Plans are currently being made for the commencement of PIQET 2 (the globalization of PIQET) to begin in January 2009. This project will expand the applications and functionality of PIQET to make it relevant for the design of packaging in a global operating environment and therefore relevant to international organizations. If you would like to learn more about how to become a sponsoring partner of this exciting next phase of PIQET please contact [Karli.Vergheese@rmit.edu.au](mailto:Karli.Vergheese@rmit.edu.au). Expressions of interests are due no later than Friday 5<sup>th</sup> December 2008.

## Eco-Design seminars and workshops

The Centre for Design in conjunction with Design Victoria are organizing and running a number of eco-design seminars and workshops for designers and SMEs in Victoria. Eight events in total are planned with two already held in September and October.

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# Sustainable Products and Packaging continued

## The free events for Victorian designers include:

- Workshop 2: Life Cycle Eco-Design Strategies: Effective Decisions making, Tuesday 25th November 2008, 9.30am – 4.30pm, Digital Harbour Docklands
- Workshop 3: Embedding Eco-Design: Tools for Success, Tuesday 24th February 2009, 8.30am – 11.30am, CH2 Building, Little Collins St, Melbourne
- Workshop 4: Communicating Eco-design: Staying on Top of the Market, Tuesday 5th May 2009, 9.30am – 12.30am, CH2 Building, Little Collins St, Melbourne

## The free events for small to medium sized businesses in Victoria include:

- Workshop 1: Business case for 'greener' products, Tuesday 11th November 2008, Time: 9.30am-4pm, Location: CH2 Building, Little Collins St
- Seminar 2: Marketing 'greener' products, Thursday 5th March 2009, Time: 10am-12pm, Location: Digital Harbour, Docklands
- Workshop 2: Marketing 'greener' products, Wednesday 1st April 2009, Time: 9.30am-4pm, Location: CH2 Building, Little Collins St

## Eco-design advice for Melbourne Museum

The Sustainable Products and Packaging group joined forces with the Sustainable Built Environment group at the Centre to advise the Melbourne Museum on innovative ways of reducing the environmental impacts associated with the design and instillation of museum exhibitions.

## Greenfly

Following on from the successful free trial of Greenfly held from April to August this year we are currently mapping out future research and development opportunities. We are presently in discussions with several industry sectors to build customized Greenfly modules to aid the effective integration of eco design into a variety of industry sectors. If you would like to find out more about the development of a specific industry module please contact [Leyla.Acaroglu@rmit.edu.au](mailto:Leyla.Acaroglu@rmit.edu.au)

## Presentations made by staff

Presentations on PIQET were made by Dr Karli Verghese at the Product Stewardship Conference (Sept 08 Melbourne) and the AusPlas Plastics and Sustainability Seminar (Oct 08 Melbourne)

Presentation on waste LCA projects was made by Dr Karli Verghese at the Local Government Conference on Sustainable Development (Sept 08 Sydney)

Presentations on Greenfly were made by Leyla Acaroglu at the POPAI "Future's So Bright Green Sustainability Conference (Sydney Oct 08) and GreenTech (Nov 08).

## CERES Resource Smart Schools Resources

We have currently developing a variety of life cycle resources for schools as part of the Resource Smart Schools Program with CERES. Resources developed include information of recycling school equipment and life cycle processes posters for computers, plastic bags and paper. These will be available from the Centre for Design website in December 08.

## Print and Publishing Guide for DSE

We have currently completed an eco design guide for the design, print and publication of documents for the Victorian Government. The quick guide for graphic eco design is currently available for free from the Centre for Design website.

## EEBR

CfD has successfully completed several key milestones in the Extended Environmental Benefits of Recycling (EEBR) project. Working in conjunction with the Department of Environment & Climate Change NSW (DECC), CfD is now halfway through updating the Benefits of Recycling Study and the accompanying Environmental Benefits of Recycling Calculator (completed in 2005/2006). The study and calculator will assist councils, industry and businesses to estimate, extend and communicate the quantification of landfill space savings (m<sup>3</sup>), avoided greenhouse gas emissions (CO<sub>2</sub>eq), energy conservation (MJ per household per year) and water conservation (ML).



## Resources Online

Centre for Design at RMIT <http://www.rmit.edu.au/cfd>

Carbon Neutral Communities <http://www.rmit.edu.au/cnc>

Lifetime Affordable Housing <http://www.rmit.edu.au/cfd/laha>

Greenfly <http://www.greenflyonline.org/>

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## Staff @ CfD

CfD is expanding! Three recent additions to the Centre for Design team are featured below:

### **James Wong (Research Officer, Sustainable Built Environments)**

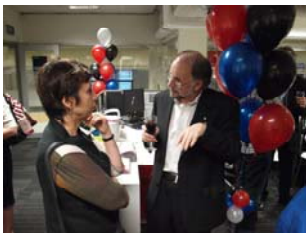
James Wong has recently joined the Centre for Design following submission of his PhD thesis. James is a certified internal auditor for ISO 14001 and OHSAS 18001 and is conversant with environmental management systems. He obtained his Bachelor of Architecture and Master of Building Science in Architectural Computing from the University of Sydney, practiced as an architect overseas for a number of years and lectured in architecture and building construction technologies. His PhD thesis concerns sustainable commercial building design. He has extensive experience in building designs and project management ranging from residential, industrial and institutional to high-rise commercial building projects. His research interest has been in sustainable building construction technologies and sustainable building designs.



Robyn is particularly interested in the human element in urban environments. She has project managed various sustainability projects including green buildings and TravelSmart programs where she engaged with a broad range of stakeholders for meaningful outcomes. Her interest is in working with people and organisations to develop new ideas, consensus and to extend their current practice horizons in order to achieve environmentally sustainable outcomes. Robyn's most recent role prior to joining the Centre for Design was implementing the Sustainability Covenant at Swinburne University. She plans to stay at the Centre for Design for as long as the coffee remains good.

### **Robyn Evans (Program Officer, Accelerating Sustainable Buildings in Local Government Sector (ASB) project at the Centre for Design)**

Robyn's background has been primarily project management and organisational change. A career switch 15 years ago added her personal passion for sustainability into her work. Since then she has run her own business in facilitation and policy development with environmental and community sustainability as the focus. This has included facilitating many community and business partnerships for sustainable outcomes, sustainable transport advocacy and project management roles with organisations such as World Vision, CERES and Environment Victoria.



### **Alan Pears, Adjunct Professor, Centre for Design and RMIT**

Alan Pears is a Director of environmental consulting firm Sustainable Solutions Pty Ltd, and an Adjunct Professor at RMIT University. Alan has worked on projects ranging from sustainability advisor on affordable sustainable housing projects to provision of expert advice on sustainability policy frameworks at state and national levels, including for MEPS. His interest in energy and water labelling and related environmental performance schemes extends over 3 decades. Alan has recently joined the Centre for Design where he maintains his activities in policy, policy analysis and advice to industry, government and community groups on a range of issues relating to building and appliances environmental sustainability.