



## CITIES OF GREEN

**Aiming for a zero-carbon urban future, Melbourne university students design an alternative to the Australian CBD - the Ecological Business District**

Story by CHIARA MACFARLANE

**Breeze Way – a sustainable future in drying clothes** - Krista Lindegger, Swinburne

Lindegger's aim was to eliminate the clothes dryer, one of the top energy users in the household, and therefore provide the people at the EBD a new functional way of drying clothes.

**Designers are rewriting the rules of old technology and finding new ways to adapt society for a fossil fuel-curbed future. Imagine a car-free eco-city 2km from the heart of Melbourne. Food grows in what looks like a multi-storey carpark and in rooftop gardens. On-site renewable energy quietly powers most services; any excess tops up the main grid.**

A Melbourne universities' initiative has aimed to show viable options that go beyond an individual green building to a green urban centre. 'Eco-city' projects are underway in Denmark, Sweden, Spain, Norway, the US and China. This growing search supports claims that a 'green collar' sector is where most new jobs will come.

In Australia governments encourage making existing buildings more energy and water efficient and new buildings aim for a

5-star National Australian Built Environment Rating System (NABERS) benchmark. There are individual buildings exemplifying the best of green design but no large-scale eco-city.

Adelaide has Australia's first eco-housing development, Christie Walk. The 2002 Ecopolis Architects-designed development was initiated by Urban Ecology Australia and it now has 40 people living in 14 dwellings. Urban Ecology Australia is now trying to raise funds to build an International Centre for Urban Ecology on the site. University of Sydney architecture students have an eco-city proposal for Sydney's White Bay Area as part of the Sustainable Sydney 2030 vision.

### **Build it and they will come**

Professor Chris Ryan, director of the Victorian Eco Innovation Lab (VEIL), says the task is to go beyond the confines of individual buildings to more complex urban settings - residential and working communities.

Inspired by the Zero Carbon Britain and Zero Carbon Europe developments, VEIL ran a series of workshops with more than

50 professionals in government, research, design, and systems management. It engaged international experts to develop a sustainable framework for the last remaining large-scale vacant land 2 km from the city centre. The site, known as E-Gate, is owned by government railway body Vic Track and is to become available for development by 2015. Participants conceived a zero-carbon eco-city concept dubbed the Ecological Business District (EBD).

***"Transforming our economy to deal with climate change means transforming infrastructure, built environments and lifestyles"***  
**Professor Chris Ryan, VEIL**

Final-year students at Melbourne, Monash, RMIT and Swinburne universities came up with EBD designs. Architecture, urban design, industrial and services design

and visual communications students looked at how to provide infrastructure and services for a zero-carbon city. Their designs were put on public display last month.

The EBD is intended to be an example of a low-carbon community where up to 10,000 people could live and work and by showing that, to help build people's confidence and willingness to make changes.

"(It) allows the public to ... see possible changes in their lifestyles," says Ryan. "Many people want to act now and respond to visionary ideas, especially if they can see them translated into real action."

Much of the technology crucial for a low-carbon future already exists, Ryan says, but needs some clever configuration.

Victoria's major projects minister, Tim Pallas, launched the EBD exhibition last month. The state government hasn't made a firm commitment as to whether or not to fund the EBD development.

VEIL's Ryan says funding hasn't been discussed yet as the project is still at the development stage.

**More than a zero-sum game**

Ryan says innovation and the global economy will be shaped by climate change. "Within as little as a decade the 'low-carbon' economy will be the major arena for global growth. Transforming our economy to deal with climate change means transforming infrastructure, built environments and lifestyles."

He says all new developments on a net basis should produce no greenhouse gases or even be 'carbon negative' by taking gases from the atmosphere.

"We can't just aim for a 6- or 7-star community. If we want the 'icon' effect to operate we need to set targets of 10 or 12 stars."

The Victorian government formed VEIL in 2006 as part of its sustainability commitment. VEIL is part of the Australian Centre for Science Innovation and Society (ACSIS) at the University of Melbourne and is one of many global innovation hubs that combine research, analysis, design speculation and evaluation to identify sustainable solutions to existing and future population needs.

Ryan says the work by research hubs such as VEIL indicates that it is possible to "live better and consume less" without sacrificing living standards.

Swinburne University industrial design lecturer Kate Bissett Johnson agrees. "Designers are savvy about materials and production techniques and should [be] using

**New ways with water**

Designed to take up minimum path space.

The project deals with water management for the communal garden in the EBD district. The Aqua Anytime water product system is a tool that would help the EBD community better manage their garden water usage. It promotes smart water management for the EBD's communal garden.



Aqua Anytime - efficient water management for our future - Ching Tan, Swinburne

this knowledge to create sustainable products people really want to own and use at a realistic price.

She said the EBD offers residents various technological options and varying degrees of effort or input which would ensure it appeals to a broad range of people.

***"Designers are savvy about materials and production techniques and should (be) using this knowledge to create sustainable products people really want to own and use at a realistic price" Kate Bissett Johnson, Swinburne***

"This project recognises that a one-size-fits-all approach won't work and that people need to have some control over their lives and have different lifestyle choices," says Bissett Johnson.

"A growing proportion of the population is green savvy, it's no longer the domain of alternative lifestyle seekers. Market demand is ensuring that businesses are producing more efficient products, products that last longer, can be upgraded and use less energy and are more desirable, as consumers are tiring of things that are cheap and continually need to be replaced."

**Solar shows the way**

Denis Smitka, also from Swinburne University, says clever design can mean that sustainable products should cost no more

than current products. Industry professionals expect that the price of sustainable products will decrease as demand increases, as already seen with solar panel technology.

Design experts also see a trend toward a more service-oriented future, where supply or delivery stages are reduced.

David Flynn from the Design Institute of Australia says there must also be a major change in the public's expectation of logistical and transport solutions. RMIT industrial design students envision the EBD as a car-free zone, with electric or solar powered personal transport and new public transport options.

Flynn says society's interest will determine the scale of government and industry investment in sustainability.

VEIL's Ryan says research centres such as VEIL and public exhibitions such as the EBD project will help spur market demand for sustainable living. Designs will also improve through incorporating ideas from the public response. This way ideas and scenarios for the future become visible and tangible; exhibiting the future in the present.

Projects such as the EBD also help to develop the skills needed for the new or evolved industries that a low-carbon Australian economy will require. New approaches in design, construction, transportation, urban food production, renewable energy, water and sewerage are needed for change on a massive scale. Designing and building successful eco-cities will ensure Australia has the demonstrated expertise and technologies to lead the way on the world stage. **ci**