

AUSTRALIAN

HOUSING GARDEN

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GREEN, GREEN CLASS OF HOME



In contrast to Tone Wheeler's purpose-built Narra Bukulla house, the building advisory service of the RAlA, Archicentre, has unveiled an environmental demonstration home in the Sydney suburb of Newtown as a model for renovators who wish to make their homes more environmentally friendly. The conversion was done by architect Georg Straesser of ECOSS. Environmental Homes to incorporate readily available, sustainable materials and technologies that are kinder to the environment, create a healthier home and even reduce running costs.

Health. Natural wood and plywood was used for joinery and trimmings instead of particle board or melamine laminates, which emit fumes. Organic and water-based paints (See Paints, opposite) were used for all the interior surfaces. Timber floors and brushbox benchtops have been coated with LIVROS organic oil instead of polyurethane lacquer.

greener by design

Climate-aware design, sustainable materials and energy-smart technologies are the keys to building



with an ESD Award for the Narra Bukulla house he designed for a remote NSW location. The design imperative was to incorporate self-sufficient energy and water management systems and passive solar design principles, "so the house works with the climate", requiring less energy to heat and cool the occupants. All rooms are oriented north for direct sun, and open-air access from a south 'verandah' offers cross-ventilation. Wide roof overhangs and shade louvres temper the harsh sun, while concrete walls and floors store winter warmth and keep their cool in summer.

For the main structures, timber poles were harvested on-site from termite-resistant species. The rest of the structure is steel and concrete. Rainwater is stored in large tanks, composting toilets reduce water demand and grey water is treated and reused for the garden. The house also makes its own power through photovoltaic solar panels. To reduce costs, Wheeler designed the house as a "kit of parts" made up of standard-size components. "Designing for standard sizes also reduces material wastage," he says. He estimates Narra Bukulla generated at least 25 per cent less material waste than typical home construction.

The global trend for sustainable house design is taking root in Australia. In 1993 the Royal Australian Institute of Architects (RAIA) adopted the International Union of Architects' Declaration of Interdependence for a Sustainable Future. It recognises that a sustainable society restores, preserves and enhances nature for the benefit of all, and that the way we design and build homes and communities plays a crucial role.

Each year, the RAIA recognises outstanding contributions to environmental design through its Ecologically Sustainable Development (ESD) Awards. This year, the NSW chapter presented architect Tone Wheeler of Environa Studio

Sustainability. Plantation timbers such as radiata and hoop pine have been used. All bricks in the new walls are from the original building.

Energy. Skylights and clerestory windows minimise the need for artificial lighting. Most of the lighting uses low-voltage lights.

Hot water. The electric hot water service has been replaced by a solar water heater with gas boosting that reduces greenhouse emissions.

Water. Rainwater is used for flushing of toilets and garden irrigation. Toilets are dual-flush models and shower heads are AAA-rated for water efficiency (see Water-Wise, page 52).

Cooling. Natural ventilation courtesy of ceiling vents to extract air from bathrooms and windows that open at ceiling level in the living room, combined with ceiling fans, make airconditioning unnecessary.

Archicentre has a series of fact sheets outlining green renovation strategies – visit <http://www.archicentre.com.au>

Top, from left: the dining room, shower and kitchen of Archicentre's experimental Sydney terrace. Left: Narra Bukulla.