

a deep shade of green

story > Michelle Dunner

A dramatic look combines with a corresponding level of sustainable performance in the HIA GreenSmart Building of the Year.

In a picturesque spot on Victoria's Bellarine Peninsula, the owners of the home deemed by HIA GreenSmart to be Australia's most sustainable, set the bar high for local builders Daran Constructions.

Daran's Rod Stiles describes his clients as 'deep green'. 'It was their requirement that the home should include as many GreenSmart practices as possible throughout,' he says.

The result was a high performing, dramatically designed home that achieves a six-star energy rating.

The home, in the aptly named Watersedge Terrace, is on a sloping site with great river views.

'It was a challenging home to build,' Rod says. 'One of the major tests for the performance of the home was to maximise the views while ensuring heat loss from glazing was minimised.'

To start off strongly, Daran used a 50mm screed slab for the main living area of the home. 'That gave us the thermal mass so that the home could achieve a six-star rating,' Rod says.

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'The home was architect-designed but the slope of the site meant that we needed to use a fair amount of judgment during construction to interpret the drawings and make them work.

'One such issue related to the pitch of the roof and the desire by the architects to channel rainwater collection into one area, rather than have multiple downpipes.'

A feature of the home is the radially sawn timber, accented by horizontal windows with brightly coloured frames. 'We had never used these sawn timbers in a project like this before,' Rod says.

'The clients asked us to use as much recycled material as possible and "character" >



LEFT: Boasting an impressive six-star energy rating, this home is naturally comfortable all year round ABOVE: Energy efficient appliances contribute to the home's high energy rating



BELOW: Recycled and resource efficient materials give the house a unique character **INSET:** Waste water from the bathroom and throughout the house is treated by an on-site worm farm



WASTE WATER IS TREATED THROUGH AN ON-SITE WORM FARM AND STORMWATER IS ALSO COLLECTED FOR FILTERING AND RE-USE

was appreciated. As builders, if we see a flaw in a timber our first instinct is to take it out, but the owners of this home wanted to keep it – they saw it as a feature.’

In keeping with the low-impact theme of the home both in its performance and during construction (the home also won the HIA GreenSmart Resource Efficiency award, see box on page 27), most of the materials were sourced locally through Rod’s own specialist contacts.

‘There are stories to tell all over the house; some of the timber used in the staircase had been supplied to our contacts and had been remilled from an old pier in the Northern Territory,’ he says. ‘Other timbers for external stairs were remachined power poles.’

As part of achieving six stars, there was a range of energy and water efficient practices implemented in the home.

Energy use was reduced by more than 80 per cent with passive solar design, efficient lighting and appliances and renewable energy technologies that included a 2040-watt photovoltaic grid power system. ➤

living in comfort

The owner of the HIA GreenSmart Building of the Year, Jan Wissfeld, says he has been very pleased with the performance of his home.

‘The comfort levels are very good, particularly in the winter,’ he says. ‘We’ve experienced quite a big difference here compared to the houses we’ve lived in before. There is much better heat retention.’

‘The passive solar design performs very well. In summer, the house stays cool – we don’t use air conditioning, only fans. Really, over the course of the year, extreme temperatures are evened out.’

Jan says it was a conscious decision to reduce the amount of glazing in the home. ‘We used the long strip windows as well as a sliding door with glass panels – you get a very good view from there off our back verandah.’

‘I like the partial views through the strip windows, the perspective is always changing. Perhaps other people would have wanted to do different things because of the local views but our emphasis was on the sustainability and the comfort of the home.’

waste management by design

Daran Constructions invests significantly in implementing best-practice environmental management strategies on site during the building process.

The company was recognised for its industry-leading efforts in waste management with the HIA GreenSmart Resource Efficiency award.

As construction of the challenging design progressed, Daran Constructions utilised an on-site recycling and sorting system which would minimise by 70 per cent the waste that would normally go to landfill.

'Not all projects require the extent to which we went with this one. On site, we used a series of bins to separate waste as well as try to be as resourceful as possible with things to reuse or recycle in some way,' Rod Stiles says. 'When it comes to block work, for example, on any of our sites, we ensure that any leftovers are crushed and recycled for road works.'

The home was built using a high proportion of recycled and resource-efficient materials, particularly the remarkable timbers used to clad the exterior.

The contours of the site also made it important to incorporate soil erosion controls, to minimise sediment run-off into stormwater, a nearby river and to adjoining properties.

'We ensured straw bales were lined up down the bottom edge of the site, as well as creating a swale. Any excess water or silt was caught and retained by the straw.'

'Once construction was completed, the clients kept the straw on site and used it as mulch for their garden.'



BELOW: Double glazing helps to minimise heat loss while maximising views and natural light FAR LEFT: Energy efficient lighting is used throughout the house

A combination of flexible sun shading and double-glazed windows ensured maximum thermal benefits and the home also features extensive draught sealing. 'We also had very high levels of insulation throughout the home,' Rod says.

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There are two 9600-litre tanks for rainwater with automated mains water backup if required. The goal is to reduce reliance on mains for potable water by 90 per cent. Waste water is treated through an on-site worm farm and stormwater is also collected for filtering and re-use.

'This was certainly the most unique home we've been involved in and I know the owners are rapt at the HIA GreenSmart recognition.'

'In our years of building we know there are different levels of interest and knowledge about sustainability and these were the most educated clients we've had. They were an integral part of it all.' **gs**



ideas everyone can use

- Investigate the use of recycled materials both inside and outside the home.
- Look at sealing any draughts.
- Ramp up your insulation where possible.
- Ensure the integrity of your rainwater supply by using a filtration system.
- Use your garden for edible plants or choose drought-resistant species.
- Choose the most energy and water efficient appliances available within your budget and select energy efficient bulbs over regular lighting.