



At home in the neighbourhood

Recycled timbers give this village dwelling a sense of warmth

Is this the 'poster house' for eco-design? It has so many of the elements required for sustainable living that it could serve as an inspiration for those wanting to create a green home. With their designer Will Collins, owners Clare and Denis have built a comfortable family home that looks great and works well with its environment.

The north facing house consists of three pavilions built on a gentle slope in The Ecovillage at Currumbin on Queensland's Gold Coast. Sited on an east-west axis the house is set off the ground. This allows for surface water flow and minimal ground impact (also known as having a light footprint on

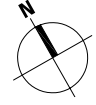
the earth). **The design harnesses all available resources and opportunities for eco-friendly living: good site orientation, passive solar and heating design, self-sufficient water supply, solar energy supply, recycling of water and materials and the unique Ecovision computer programme which monitors the house's energy input and output.**

Kitchen, living and dining in one long room comprise the first pavilion, built one room deep to provide maximum ventilation from ample cross breezes. Two large decks sit at the eastern and western end of the room. Large windows and strategically placed louvres allow plenty of light

and air and are tinted for improved heat regulation. "There is a visual spaciousness" says Clare, "you don't feel as if you're locked away inside". Wide overhangs on the decks keep out the sun. Referred to as the morning and afternoon decks, they offer a pleasant place to sit whatever the time of day.

A large stainless steel tank which doubles as a daybed sits in the window opposite the kitchen and receives direct sun in winter. It is painted black on the north facing side and when it is filled with water it acts as thermal mass to heat the pavilion. **Floor, wall and ceiling insulation help prevent heat loss in winter and heat gain in summer.** ↓





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The kitchen glows with the warmth of a variety of timbers such as recycled spotted gum benchtops from the Brisbane Irish Club, flooring from the W4 woolstore building in Teneriffe, Brisbane and ecoply with hoop pine veneer for the cupboards. Silver mesh on two of the cupboard fronts keep vegetables and pantry items well ventilated, reminiscent of the old fashioned meatsafe (a cupboard made of timber and perforated metal that, when draped with a damp teatowel, kept the contents cool and protected them from vermin and insects). Running costs are kept down by simple things like ducted vents under the refrigerator to stop the motor getting too hot.

Tank water is used throughout the house (the whole community is water self-sufficient) and a centrifugal pump has been installed to ensure water pressure is consistent. “We had two showers going at once during the school holidays and pressure wasn’t a problem” adds Denis.

Beside the kitchen pantry is the Ecovision computer. It monitors how much water there is in the tanks, how much energy is produced and used, the room temperatures, greenhouse emissions and how sustainable the house is. Developed by the Ecovillage, it is an amazing piece of technology and part of every home built here. Denis and Clare

check it constantly, amazed at just how clever their new home is.

All houses in the Ecovillage have solar hot water and photovoltaic solar panels to produce electricity. Any water used is recycled in the Ecovillage’s treatment plant and this is piped back to each home for use in sewage systems and gardens.

A short stairway leads to the second pavilion which comprises a games room, three bedrooms, laundry, ensuite and bathroom. A rammed earth wall, 300mm thick, divides the pavilion in the middle. Rammed earth walls not only work well as thermal mass but are very strong and are not



“Rammed earth walls not only work well as thermal mass but are very strong and are not as high in embodied energy as concrete”



Caption.



as high in embodied energy as concrete. Embodied energy is the energy used to make the product.

This wall **receives direct sunlight through the clerestory windows in winter and radiates heat to keep the pavilion warm after the sun has gone down.** “The second pavilion is two degrees warmer than the rest of the house in winter” says Denis, who can speak authoritatively because of the Ecovision system.

Outside, reinforced metal screens of galvanised steel sit slightly away from the west side of the house. Grape and passionfruit vines planted on them will eventually provide shade. Downpipes of

galvanised steel flow into HDPE piping (a high grade plumbing material suitable for recycling potable water) which is connected to the water tanks under the house. A first flush device has been installed so that muddy water from the roof can be used for the garden and all gutters have stainless steel guards to prevent leaf blockages and to keep the water as clean as possible.

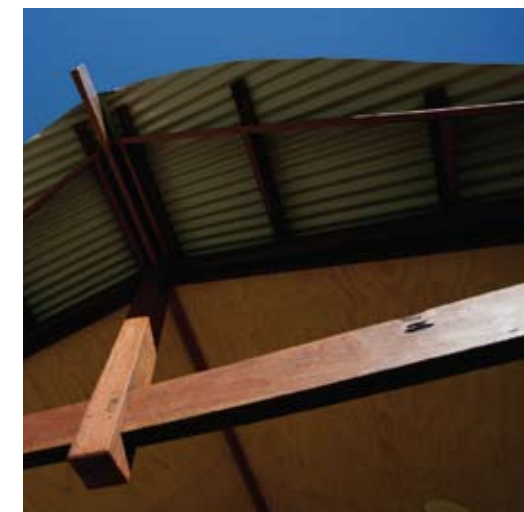
The gables are lined with ply which gives an R3 rating for insulation whilst the walls have an R2.5 rating. At the top of the roof a vent lets out any hot air that has collected in the ceiling. The vent is closed in autumn to prevent loss of heat and during



summer storms. Polycarbonate sheet cladding has been used below the floor of the house. “This allows light to get in under the house in case any work needs to be done” adds Collins.

The garden, which is just being established, sits on a slope, so Clare and Denis have built a system of berms and swales. The berms are raised piles of earth which run in parallel lines down the side of the property. The **swales are the flat area between the berms where greenery and stones can be placed to slow the progress of water and encourage more moisture to be absorbed into the ground.**

Living in the Ecovillage at Currumbin may





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not be for everyone. There are plenty of rules and regulations to ensure that it becomes "an inspirational pathway for future generations" according to Kerry Shepherd, the head of sales and marketing in the Ecovillage, but Denis and Clare wouldn't have it any other way. "Living here is exciting, to see the way the light affects the house and it's exciting producing your own energy and water" says Denis. Their enthusiasm is catching, just ask their designer Will Collins who says "meeting Clare and Denis made me decide to live here too".

- Architect:** ???
Builder: ???
Location: Currumbin, QLD
Photographer: ???
- Features:**
- Whole community is water self-sufficient (disconnected from Municipal mains)
 - All homes have grid connected minimum 1.2kW photovoltaic systems (80% of current residents have zero or negative energy bills)
 - Low impact development 80% public space, 20% private ownership
 - passive solar design
 - off the ground construction for site hydrology and light footprint on the earth
 - renewably resourced building materials
 - use of recycled building materials
 - energy efficient lighting
 - use of gas only appliances (cleaner burning and more energy efficient)
 - solar water heating
 - photovoltaic energy panels
 - Ecovision computer programme to monitor energy output/input, water levels and usage