

Low-cost water efficiency is easy for this beachside home

A partnership between a local council and a home builder has led to the construction of a BASIX-compliant display home well before BASIX, the Building Sustainability Index, came into effect for regional NSW.

The home, near Port Macquarie on the NSW north coast, includes a range of sustainable design features that could be included in homes anywhere in the state.

Builder Rob Tate wanted to build a contemporary home that would work anywhere, while Hastings Council wanted a hands-on demonstration of the design features and products needed to meet its water and energy efficiency standards.

The highly water and energy efficient Beach House in Hastings is the result.

“What we tried to do was build a water- and energy-efficient home that would blend into a normal suburban street: that looked smart and would also be smart,” said Rob Tate.



Energy efficiencies come free with this house, thanks to good solar orientation.

For this reason, the home makes energy savings through passive design principles and innovative, low energy light fittings.

“The energy efficiency component in this particular model didn’t really add any cost at all to the home because we’ve always been conscious of the correct orientation of a home (to maximise solar access in living areas, natural light and ventilation). The bigger expense was the water saving components.”

And it was tight water restrictions that drove Hastings Council to seek a partnership with a builder who could create “a practical demonstration on how rainwater tanks can be incorporated into a home’s design.”

Extreme drought and water restrictions led to a requirement for all new developments to include a rainwater tank according to Council’s Environmental Health Officer, Jacky Jurmann.



Rainsaver gutter system on the gazebo stores rainwater for garden use.

“Some people still have the idea that rainwater tanks are ugly and take up a lot of room in a standard sized back yard.

“We wanted to show people that on this block we put in a decent sized tank and it doesn’t take up much room, and it can be incorporated into landscape design.”

A 60% reduction on average home water use has been achieved at The Beach House by using a 9000 litre rainwater tank providing for all non-potable water needs.



A submersible pump provides a pressured supply and rainwater is used for all hot water needs, toilet flushing, laundry and irrigation purposes.

The level in the water tank is monitored by a control unit. When levels are too low for the pump to operate, the unit switches the supply to town water until the tank levels increase again.

Tate says these water saving features add about \$6000 to the cost of the home, although the minimum 40% water reduction required by BASIX could be achieved for nearer to \$5000.

The Beach House design has a base price of \$241,000, plus \$5000-6000 for the water saving features required by BASIX. In its current display house form, with top-of-the-line lighting and extensive landscaping, the house would cost around \$340,000.

“BASIX will definitely lead to better living conditions for people. I don’t know if that was the sole motivation, but the result will be nicer homes to live in, that’s for sure,” he said.

For more information:

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BASIX Help Line

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Sustainable Features:

- A 9000-litre rainwater tank supplies hot water system, toilets and laundry.
- Rainsaver gutter system stores rainwater for garden use.
- 3A rated showerheads, flow regulators and mixer taps.
- Good solar orientation allows winter warmth in living areas, minimising use of space heaters.
- Wall and ceiling insulation.
- A vaulted ceiling with high windows allows trapped heat to escape.
- Eaves provide window shading, reducing need for air conditioners.
- Dual hot water systems minimise heat loss in the pipes: a heatpump system supplies the main areas, instantaneous hot water system for the guest room.
- Skylights reduce the need for electric lighting.
- Slimline long-life fluorescent lamps operate at very low wattage.
- Energy saving compact reflector 9 watt fluorescent downlights.
- LED garden lights, strip lights and wall lights.
- A light coloured roof reflects heat in summer.
- A fan forced oven - up to 30% more efficient than conventional ovens.
- Energy saving timers fitted to exhaust fans.
- Motion sensors control lights.

Within a decade of implementation, BASIX is expected to save 287 billion litres of water and reduce greenhouse gas emissions by 9.5 million tonnes.

