

RAINWATER TANKS, WATER-SAVING SHOWER HEADS AND SOLAR ENERGY ARE KEY INCLUSIONS UNDER THE BASIX BUILDING SUSTAINABILITY INDEX.

Green day

See sustainability in action when 30 eco-friendly houses open their doors to the public next weekend, **DAVID WILSON** writes.

AS PART of Sustainable House Day, 30 eco-friendly NSW homes will open their doors to the public next weekend. The point is to demonstrate sustainability in action and show the alternatives to energy-guzzling "McMansions" also known as "garage mahals", "Hummer houses" and "starter castles".

At each house, visitors will receive an information pack full of sustainability information, and directions to nearby houses involved in the day. It is a chance to learn how houses are energy rated and talk to designers and householders about their experiences designing, building and living in low-energy homes.

The keystone of low-energy living is solar power. So these new and renovated homes all incorporate "passive" solar design - where the design and orientation of the house make the most of natural sunshine. Many properties feature "active" solar measures such as solar hot water and solar electricity generated via roof panels.

The impact of BASIX
Two years after the introduction of BASIX (see box), a recent glowing report released by NSW Premier Morris Iemma claims the water savings are sufficient to fill 1100

Olympic swimming pools; up to 90 per cent of NSW homes built in the past three years have installed rainwater tanks. We asked some of Sydney's leading environmental architects how they believe BASIX is changing the landscape.

Michael Robilliard, who designed the house that won the energy efficiency prize in the latest Master Builders Association (MBA) awards, describes BASIX as "a very good thing". Left to their own devices, architects and homeowners would not do enough to make their homes eco-friendly, he says.

BASIX has forced the manufacturing industry to make the performance of its products more transparent, helping consumers to make more informed choices, he says. For example, makers of shower heads and water heaters must declare their degree of efficiency with a star rating.

He expects the less well-off to feel the pinch of environmental design as it becomes more common in cheaper houses, while those in architect-designed houses have been implementing ecologically friendly designs for some time.

Steve Lesiuk, director of Palm Beach-based Lesiuk Architects, which specialises in environmentally themed projects, agrees. However, he says while BASIX is "capital-intensive

at the front end", compliance pays for itself in the long term.

"If you install good-quality, energy-efficient equipment, the cost savings are fantastic," he says. "A quality air conditioning system may run 75 per cent more efficiently than a clunky one. As a result of the BASIX boom, people are thinking more about home energy conservation."

McMansion militants
Fellow green architect Caroline Pidcock advises people to examine their home's in-built energy deficiencies, which translates as a glut of oversized rooms, she says.

Like Lesiuk, she believes BASIX has considerably boosted the market for sustainable devices. "There's a huge array of water tanks, grey water systems, and all sorts of clever, more efficient lights," she says.

Pidcock views the fact some people are struggling with BASIX as a plus; if nobody struggled, that would signal it was not tough enough, she says.

Rainwater tanks
Happily, in a case of carrot and stick, NSW home owners who fulfil certain conditions may be eligible for a State Government rebate of up to \$1500 on rainwater tanks.

Until June 31, the maximum rebate for a rainwater tank was just \$800;

about half the new maximum. Leigh Martin, urban campaigner at the Sydney-based Total Environment Centre, describes the rebate increase as "welcome and important".

The secret of winning a rebate close to the maximum is to splash out on a big tank and connect it up to as many outlets as possible. If the tank is linked to a washing machine and a toilet, you earn \$500 dollars for each.

Solar scenarios
In another boost to energy-conscious consumers, state funding for solar hot water systems has risen. Over the next five years, 225,000 Australian households that fulfil certain conditions will be eligible for a \$1000 flat-rate rebate on solar hot water systems.

Again, the rise is hefty. Until July 17, when regulations changed, there was no direct solar hot water rebate. The only reductions came in the shape of renewable energy certificates, which are similar to share certificates and remain available on top of your rebate.

The future for solar hot water systems looks bright although the rebate conditions are tough. Applicants for the \$1000 flat-rate solar rebate must replace an electric storage hot water system with a new solar one bought and installed after July 17 this year. The new system must be eligible for at least 20 renewable energy certificates.

What's more, the household has to have a taxable income of less than \$100,000. And there are other restrictions.

Solar hot water systems are much more expensive than traditional water heaters. The average purchase and installation price for a standard water heater is at least \$1200. Buying and installing a solar hot water system costs at least \$4000 before rebate.

The new rebate shaves the price of a solar system significantly, says Romano Bolzon, national business manager for EcoSmart Hot Water. Better yet, Bolzon calculates, whereas the average consumer pays between \$300 and \$400 on hot water annually, with a solar heater the cost is only \$80 a year. It generally only takes about three years to pay off the cost of a new solar hot water heater, he says. Bolzon expects all the \$1000 rebates to be doled out well within the scheme's five-year span.

Jeff Angel, director of the Total Environment Centre, is also positive about the future of solar hot water. The rebate is boosting the adoption rate of solar heaters, he says. "All the indications are there's a big surge of interest in the community."

If the volume of solar hot water units produced can be raised, that will drive overall price reduction and make them more competitive, he says. "We're getting above the boutique level and mainstreaming now."

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CROSS-VENTILATION AND ADJUSTABLE LOUVRES IN A HOUSE BY ARCHITECT STEVE LESIUK AT CAMP COVE IN SYDNEY.

BASIX basics
Building Sustainability Index (BASIX) was introduced in July 2005 to ensure new houses are more energy- and water-efficient. New houses must have water-saving taps and shower heads. Many properties now have water tanks connected to the toilet and laundry. Eaves, orientation and shading are priorities in house design to reduce power usage. BASIX requires all new houses in NSW to produce up to 40 per cent less greenhouse gases than the average home. For more information see www.basix.nsw.gov.au.



CLEVER USE OF DINING SCREENS IN AN ENERGY-EFFICIENT HOUSE BY ARCHITECT MICHAEL ROBILLIARD.



THE LEVER HOME, AN AWARD-WINNING ECO-FRIENDLY HOUSE AT GLENHAVEN, WILL BE OPEN FOR THE SUSTAINABLE HOUSE DAY EVENT.

When green home meets dream home

MURWILLUMBAH resident David Johnstone has given his three-bedroom typical country weatherboard house a total eco-friendly makeover.

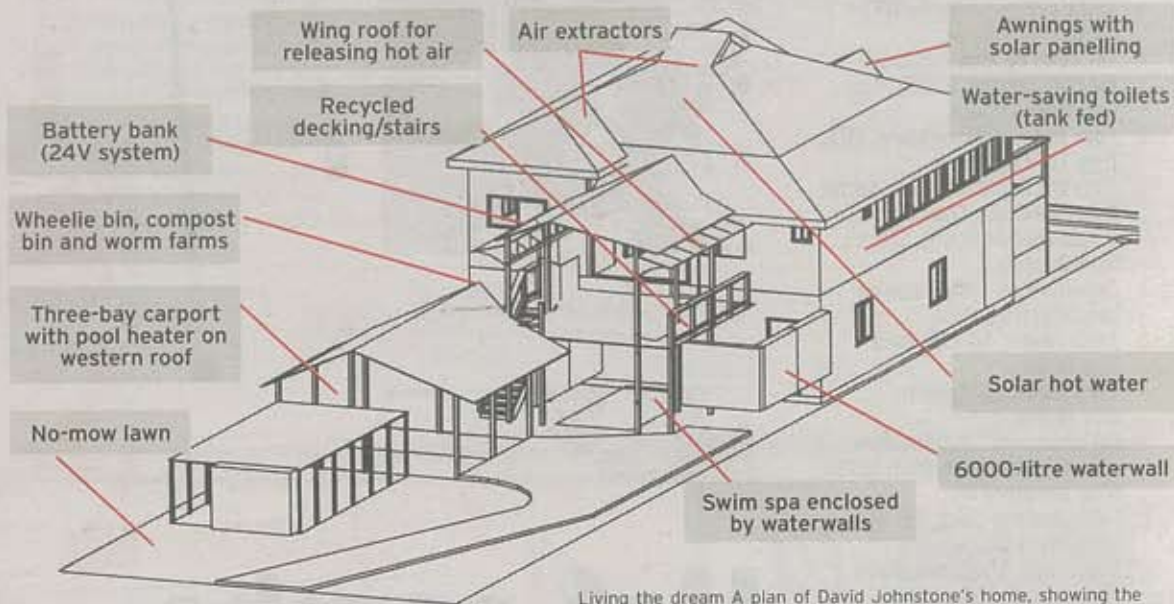
"We didn't just want to do the basic BASIX," Johnstone, 69, says. "We wanted to see how green we could make the house."

Johnstone has embraced solar power. For a start, he installed a gas-assisted solar hot water system. He also installed seven "grid-interactive" solar panels that manufacture power to sell to the grid and "wind the meter back" when the sun shines.

Then there are three more panels that operate as an awning over a front window. They are connected to a battery bank that powers the upstairs lighting and a couple of kitchen power points.

If the grid goes off in a cyclone, he should still have the upstairs lights and the power points. "Other than the hospital, this may be the only place in town with lights on," he says. He expects that his power would last three or four days.

And he is unlikely to run low on water because he has made clever use of waterwalls - water storage tanks that double as barriers. Five waterwalls enclose his "swim spa", which incorporates swim jets so it functions as a lap pool. Offering privacy and soundproofing, the walls hold



Living the dream A plan of David Johnstone's home, showing the features that have halved his energy bills and drastically cut water usage.

6000 litres of top-up for pool, gardens and internal toilets.

Another aquatic item, the toilet, features a clever flush water saver, which hangs inside the cistern and saves two litres with every flush.

Making the house so sustainable was not cheap. The whole conversion cost more than \$150,000, less an \$8000 solar power rebate.

"People may say 'I can't afford to go green', But some of the stuff we

have done is very inexpensive," Johnstone says.

He mentions how he cut a hole in the kitchen ceiling and fitted it with a flap. He keeps the cavity, which is ventilated by two air extractors, shut in winter and open in warm weather so that the house can breathe. The cost of making this "manhole" was negligible.

But the impact of all his work will be big, halving his energy bills, he estimates.

He admits that the year-long conversion took four times longer than he planned. Much time was consumed in planning negotiations with Tweed Shire Council, which he said was supportive in helping him achieve the greenest result.

His advice to readers thinking of following his example: get everyone in at once, so the builders can liaise with the plumbers and so on. Even if that means having 12 guys on the site at the same time.

Who to contact CAROLINE PIDCOCK (02) 9357 1366 **ECOSMART** (solar hot water) www.ecosmart.com.au **LESIUK AND ASSOCIATES** (02) 9974 1010 **MICHAEL ROBILLIARD** (02) 9331 2232 **SOLAR HOT WATER INFORMATION LINE** 1800 808 571 or see www.greenhouse.gov.au/solarhotwater/index.html **SUSTAINABLE HOUSE DAY** www.solarhouseday.com **SYDNEY WATER** (rainwater tank information) 132 092 or www.sydneywater.com.au **TODAE** (green products and ideas) www.todae.com.au