Energy efficient homes affordable and stylish

ENERGY efficent housing is here, it's affordable and stylish. That's the word from solar energy designers and scientists at the Australian and New Zealand Solar Energy Society's Solar 93 conference in Fremantle.

More than 300 delegates from Australia and overseas attended the conference last weekend to discuss everything solar from windpower to water pumps to energy efficient housing.

Chairman of the conference's organising committee Dr Bill Parker said solar housing's difficult birth in Australia had been hindered by a number myths and misconceptions. He suggested the word "solar" often confused consumers and had negative connotations.

"If you call something passive or solar, you apply labels that are basically negative," he said.

"If you go out and ask people what solar housing looks like, many will say it looks ugly." Dr Parker said.

"Secondly, some people will say that it costs more to build than conventional housing." He suggested "energy efficient" was a more accurate term to use when referring to homes that include design details that minimise energy loss.

As for consumer concerns that energy efficient housing is ugly and expensive, Dr Parker, said these old arguments had run out of steam. He said most homes already had aspects of energy efficency built into them. It was just a matter of fine tuning some aspects, many of which are not obvious to the eye.

He said factors such as orientation, the use of less glass on some walls and insulation need not necessarily cost any more.

Dr Parker added that less complex forms of energy efficient housing were already being built in Perth including a design by architect Garry Baverstock in Bayswater that cost about $60,000 to build. He said the home looked like many other modern homes, but just applied some basic energy efficient principals - north facing living areas, little glass used on western wall, insulation, good flow through and gas boosted solar hot water system.

Dr Parker said it was important to get local and state government involvement in creating an easier path for these types of housing developments on a mass scale.

"It's no longer a matter of technology but one of politics," he said. "If we can change building codes (to permit certain orientations) we can make it easier to churn out not just one but 50 energy efficient homes."

The highly respected energy consultant and conference Keynote speaker Carl Weinberg said the process of integrating energy efficient housing and housing intermediaries such as builders and finance institutions had already been achieved in the United States through the use of an energy rating system.

Mr Weinberg said the Californian based energy efficient housing rating scheme was arranged to be performance based rather than prescriptive.

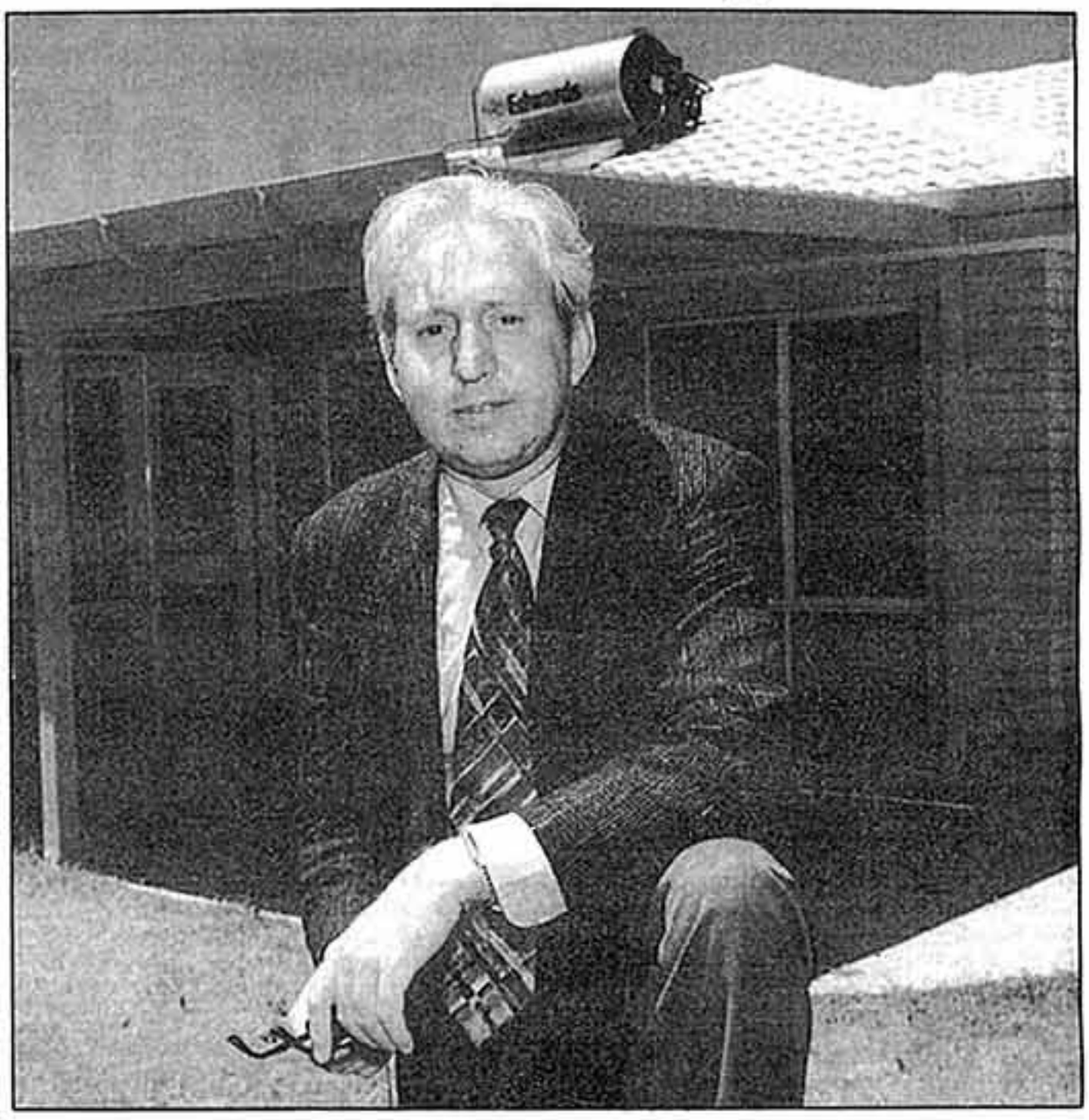
For example if a homebuyer wanted loan, he or she could take their plan along to the government housing loan authority and secure a rating. The more efficient the design the higher the rating. A high rating would ensure a lower interest rate on the home loan, creating a real incentive for buyers to improve their house plans.

He said builders and developers could also receive cash rewards by private utilities if subdivisions and designs came within certain energy efficiency standards.

The concept of a energy rating has been trialled in Victoria by Energy Victoria. General manager Dr Peter Hertan said at the conference that the rating star system trialled in Geelong confirmed the potential of a house energy rating scheme in helping to improve the energy efficiency of new and existing homes and in changing the behavior and choices of homeowners.

Dr Hertan said the pilot scheme howed there was significant potential to involve a range of market intermediaries in the delivery and promotion of the rating including builders, insulation and double glazing suppliers and electircity and gas customer service centres.

Dr Hertan said the Victorian scheme was being coordinated with the development of a national home energy rating which could easily be adapted to other states including WA.



Perth architect Garry Baverstock at the energy-efficient house at Bayswater.

Solar pergola key to heating

FREE heating — it sounds too good to be true, but architect and solar design consultant Garry Baverstock believes it is within the reach of most of us.

Most of us building new homes, that is, for that is the catch — you have to think ahead.

There is some extra initial cost, but basically if you have your house professionally planned, build it so that the ratio of north plus south walls is 1.5-2.0 to 1.0 east plus west walls, insulate it, and ensure that the northern windows are in full sun in winter and in shade during the winter then you should be able to say goodbye to heating — and cooling — bills.

This was confirmed by one of Baverstock's clients whose home was built three years ago and which maintains an inside temperature of a minimum of 18C in winter and a maximum of 28C in summer. It is a large house with open flow-through living areas and the owners live happily with no heating or cooling systems. In this case the protection of the northern windows in summer is achieved by what Baverstock describes as a solar pergola.

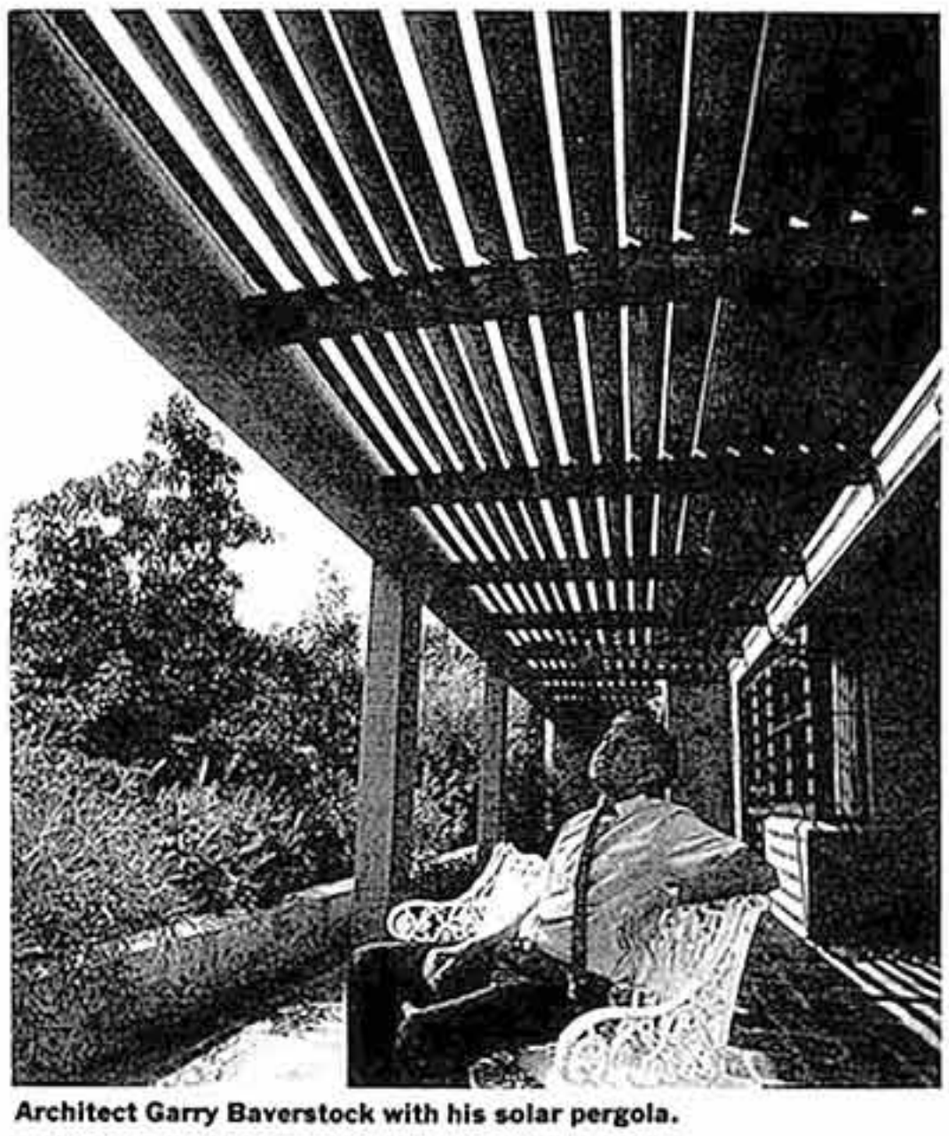
This doesn't bear any resemblance to the black solar panels most people are familiar with. The solar panel down the side of the house is a traditional pergola structure with western red cedar slats precisely angled to allow the winter sun through but to block out the summer sun which is higher in the sky.

Winter heating is enhanced by the use of a small glassed-in solarium with a solar grille on the roof made up of an aluminium version of the pergola's slats.

The solarium, which the owners use as a breakfast room, in winter traps any warmth to be had from the sun. The doors between the solarium and the house can be opened and the warmth allowed to flow into the house.

This house has polystyrene insulation in the cavity between the bricks to help maintain internal temperatures, but this is one of the few added costs. The solar pergola is a conventional structure, though the cedar slats would add to its cost. (Cedar is used because it can be machined to a minimum of 5mm thickness without warping. This is necessary for wedge-shaped slats.)

Baverstock says that it may cost a little more to set up a solar house, but energy savings over the life of a mortgage could reduce the payment period by up to 12 years. ■



Architect Garry Baverstock with his solar pergola.