

Solar design takes architecture award

DESIGNING a big luxury home to ensure that the internal temperatures do not inch above 28C in summer or fall below 18C in winter sounds daunting, but it can be achieved with a minimum of fuss and a maximum of energy cost savings.

Architect Garry Baverstock showed how by designing a solar home in Cottesloe and taking out the energy conservation prize at the 1994 Architecture Design Awards.

The owners of the spacious residence were keen to incorporate passive solar principles throughout for thermal comfort and at the same time create a well presented home in a classic French provincial style.

Mr Baverstock had to take various other concerns into consideration during the initial design stages. For example, floor levels were critical to ensure that views of the ocean were possible from the family areas downstairs as well as providing views from the upper level.

Limestone was chosen for construction to suit the provincial style and atmosphere of Cottesloe and to suit thermal objectives of comfortable internal temperatures. Various living spaces needed to flow in a practical and visual way from the living areas to the outdoor entertaining areas, which included a tennis court and pool.

The answer to all these design challenges is a home that oozes a rugged and spare provincial charm, provides plenty of comfortable living areas over two levels but, at the end of the day, eliminates the use of air conditioning in the summer or space heating in the winter months.

"The client wanted an authentic French provincial-style home, but also wanted passive solar features," Mr Baverstock said.

"Before I got the job the client wanted to know if I could handle that compromise, but I explained that there would be no compromise."

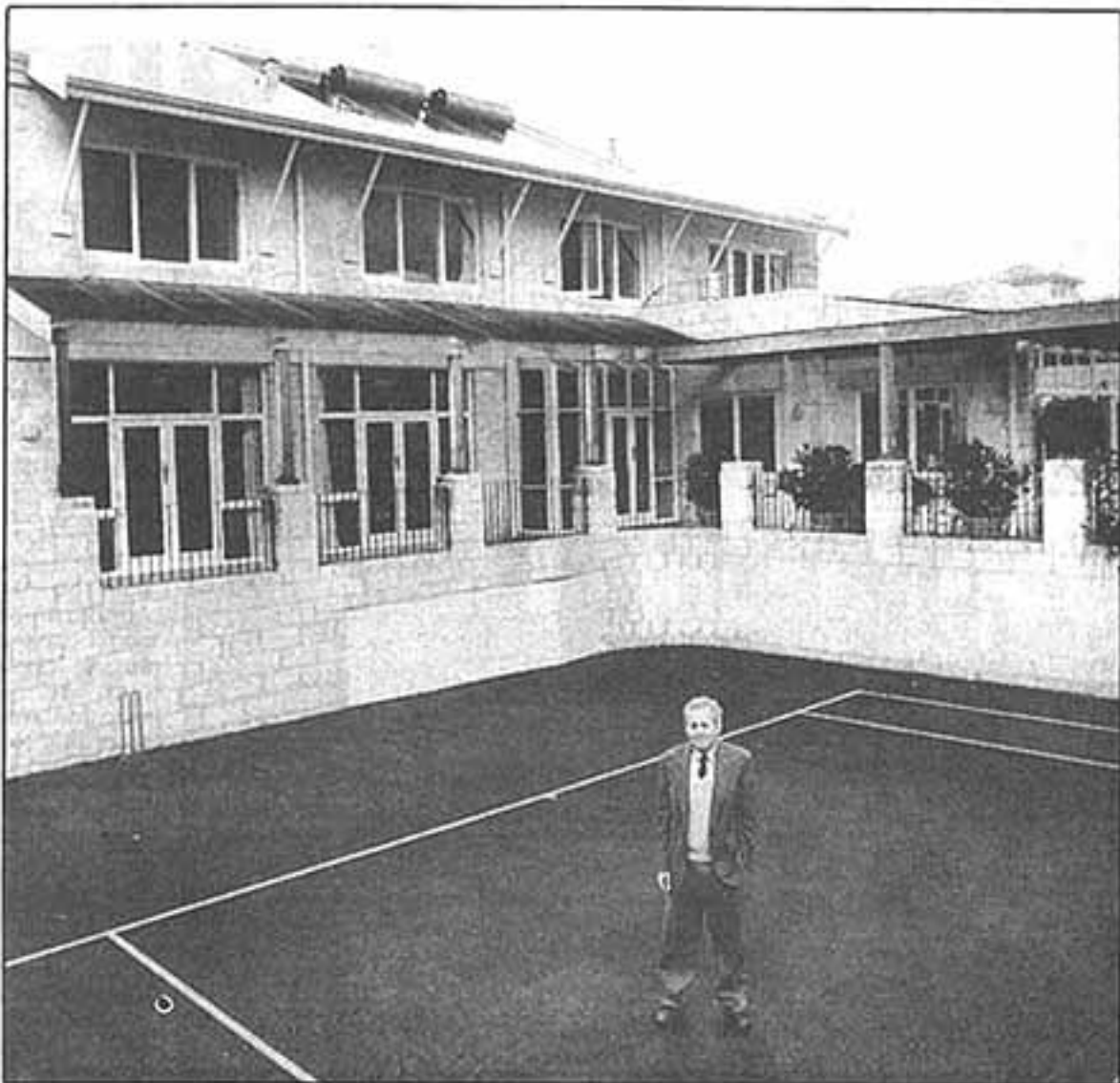
"The French provincial style in a mediterranean climate is very appropriate and in the end it wasn't really that difficult."

Four major features contributed to the solar efficiency of the home. The block was ideal for the positioning of outdoor entertaining areas to the north which helped greatly in providing a grounding for the whole project.

The correct amount of glazing in the north-facing walls was calculated at 50 per cent and as many rooms as possible were positioned to this side of the home, including the minor upstairs bedrooms and the living rooms.

The winter sun flowing liberally into these rooms helps eliminate the need for heating as does the lower level conservatory, which ensures a steady flow of warm air into the lower level.

Warm air is drawn into those parts of the



Garry Baverstock with the award-winning solar house he designed.

house not receiving direct sun by a thermostatically operated fan and the same fan can be used to vent hot air in summer.

To prevent the sun encroaching on the rooms during summer a series of solar pergolas have been erected along the north facing rooms producing extensive shade during the warmer season.

The judging panel for the Architecture Design Awards praised the home because it showed how energy could be minimised within design constraints.

"Similar houses are usually fitted with ducted reverse cycle air conditioning and are very energy intensive," the judges said. "Solar principles have been applied in an effective way and the owners are very happy with the climate control and ambience of the building."

But it also underlines the value of energy

efficient design at all parts of the home design spectrum.

"The style of the home has got little to do with the benefits of passive solar," Mr Baverstock said. "It's the application of a method whether it be a \$60,000 design or a \$1 million house, a step-by-step method which allows the clients time to understand why certain things are being done and ensure input from the clients to ensure they are happy with their lifestyle."

The continuing savings in a home of this size can be dramatic. Mr Baverstock estimated at least a 60 per cent saving on energy costs for the Cottesloe home. He said it could mean between \$2000 and \$10,000 in savings, particularly if reverse cycle air conditioning was adapted to such a big home.

Bev Wilcox



Solar home a prize design

ARCHITECT Garry Baverstock takes in the Cottesloe air under a cedar pergola at his home where the temperature stays between 18C and 28C all year.

The pergola is designed to maximise energy efficiency.

The solar home won Mr Baverstock an energy conservation award — a new category in this year's Royal Australian Institute of Architects (WA) architecture awards.

The award recognises projects which exhibit a strong commitment to long-term environmental issues.

Mr Baverstock, of Baverstock and Associates, South Perth, said the French provincial-style limestone house was designed to provide comfort at low running costs by maximising use of the sun.

The house does not need air-conditioning or artificial heating, although there is a fireplace if required. Hot water is provided by solar panels.

Judges praised the design of the home, saying it demonstrated the classic principles of a solar design building in an unobtrusive and sensitive manner, achieving excellent climate control.

Picture: ROD TAYLOR