Gary, Cutting from Weekender Paper as promised
Georgie Brien

Building to suit the climate

By KAREN TIMMINS

In a move back toward what were sometimes highly sensible, old-fashioned ideas some local people have taken advantage of the environment to build energy conserving homes.

Using the fresh seabreezes Esperance is renowned for and perhaps some of the brightest sunshine in Australia, a Perth architect claims you can build a home saving between 60-90 percent of household energy.

A recent visit to Esperance saw architect Garry Baverstock give a free seminar to local people expounding the virtues of climate sensible buildings.

And no-one is arguing—between 1985-1989, Mr Baverstock won five consecutive Housing Industry Awards for design climate, designed, developed and constructed the Solar Energy Information Centre in South Perth (the first Australian Design Award winner), won a James Hardie award for a composite constructed solar house and was founder and inaugural chairman for the HIA Low Energy Building Council.

He also won the 1993 National James Hardie award, the Australian Building National Energy Award and the 1994 RAIA Energy Conservation award.

Mr Baverstock has designed homes that he says make the most of the Australian climate, built by recommended builders sympathetic to his cause.

"It helps to have a builder who has the right philosophy, is on side and competent with how these houses actually work."

Being in a town he describes as a focal point for renewable energy (with the new wind farms), Esperance had the potential to set examples for the rest of the country and Australia in turn for developing countries.

Far from being the ultimate in handcrafted mud bricks and glass frontage, the homes are often indistinguishable to normal suburban homes in appearance but use 60-90 percent less energy.

"The style is not important—it reflects the owner's tastes and it can be designed to any style."

There are currently two climate sensible homes in Esperance and he was currently designing another two.

Mr Baverstock drew the example of a 260 square metre Perth home with an electricity bill of about $25/two months. The house was kept between 22-24C the majority of the time with little or no help from electrical heaters or other kinds of devices.

"There has been some interest in the passive solar design house as it is warm in winter, cool in summer and does not need air-conditioning or heating.

"There are a number of principles that must be observed to achieve this such as the correct orientation of the house. The long proportion of the plan basically lays east-west with the majority of widows to the north.

"It is important to have a northern facade for the winter sun which provides free heat and natural light can penetrate the house in winter.

"In summer the sun is up high and easily shaded by a small overhang. There is no need to have large verandahs and the homes are easy and cheap to construct."

Mr Baverstock suggested climate sensible building began with buying a block of land correctly orientated for the purpose.

"Most of Esperance is a little off north but it is not too bad. It is hard to find blocks that fit the criteria.

"It is important for a town planner to take an interest in this area. It should become the norm rather than the exception."

With three times the heat gained on the northern side of a house than the east/west side, warmth can be kept in winter and coolness in summer.

Mr Baverstock was quite impressed with Esperance homes in a general sense but dropped a few hints to better adapt to climate.

Climate sensible

Passive solar design homes are designed to
- stay warm in winter
- cool in summer
- eliminate the need for air-conditioning or heating

"People tend to put windows anywhere and don't shade them at all which you can get away with more in Esperance with your beautiful cool breeze.

"There is a lack of consideration for the northern sun."

He was encouraged to see more than 50 people take advantage of the opportunity to hear more about climate sensible design when he held a recent free seminar.

"The consciousness of this in Esperance is great but the contemptuousness of local government appalled me."

Mr Baverstock said subtle things made a difference to how climate sensible a home was. These included the right area of glass, a solidly built interior to store a stable temperature (thermal carryover).

"You are storing energy during the day to use at night. Insulation is important to slow the heat transfer in and out of the house."

One problem Mr Baverstock had noticed about many local homes was floor slabs directly touching the ground—a great source for heat loss.

"It should be insulated around the base to conserve the heat."

Mr Baverstock said while it made sense to use more natural materials such as wool there were other alternatives.

"Sheep's wool insulation for the roof is a good idea but things like fibreglass and polystyrene all have an important part to play in cooling a house."

Weight distribution was also an important factor when building a home, with rammed earth an ideal material, along with stone or reverse brick veneer.

Reverse brick veneer was a method of evening out the weight distribution and Mr Baverstock said it was often preferred in earthquake prone countries.

"The main feature of this is you have the mass on the inside."

Mr Baverstock estimated the homes would work out the same price or cheaper in the long run.

"I would argue passive solar energy is actually cheaper and can eliminate useless circulation areas. You could save up to 15 percent floor area which could mean $20,000-$30,000 in the average house.

"You could be saving with clever design some $10,000 on air-conditioning, heating, blinds and the cost over five years could be another $10,000 just in capital costs. It makes financial sense."

He suggested it was about time Australians woke up to the needs of their country—a five week trip travelling across India had soon drilled that idea in.

Esperance Shire Council offices were used as a perfect example of what not to do when building a climate sensible area.

"That is probably the worst example of energy conservation you could muster especially in a place like Esperance.

"The best architect is one that takes in to account the climate, shading etc."

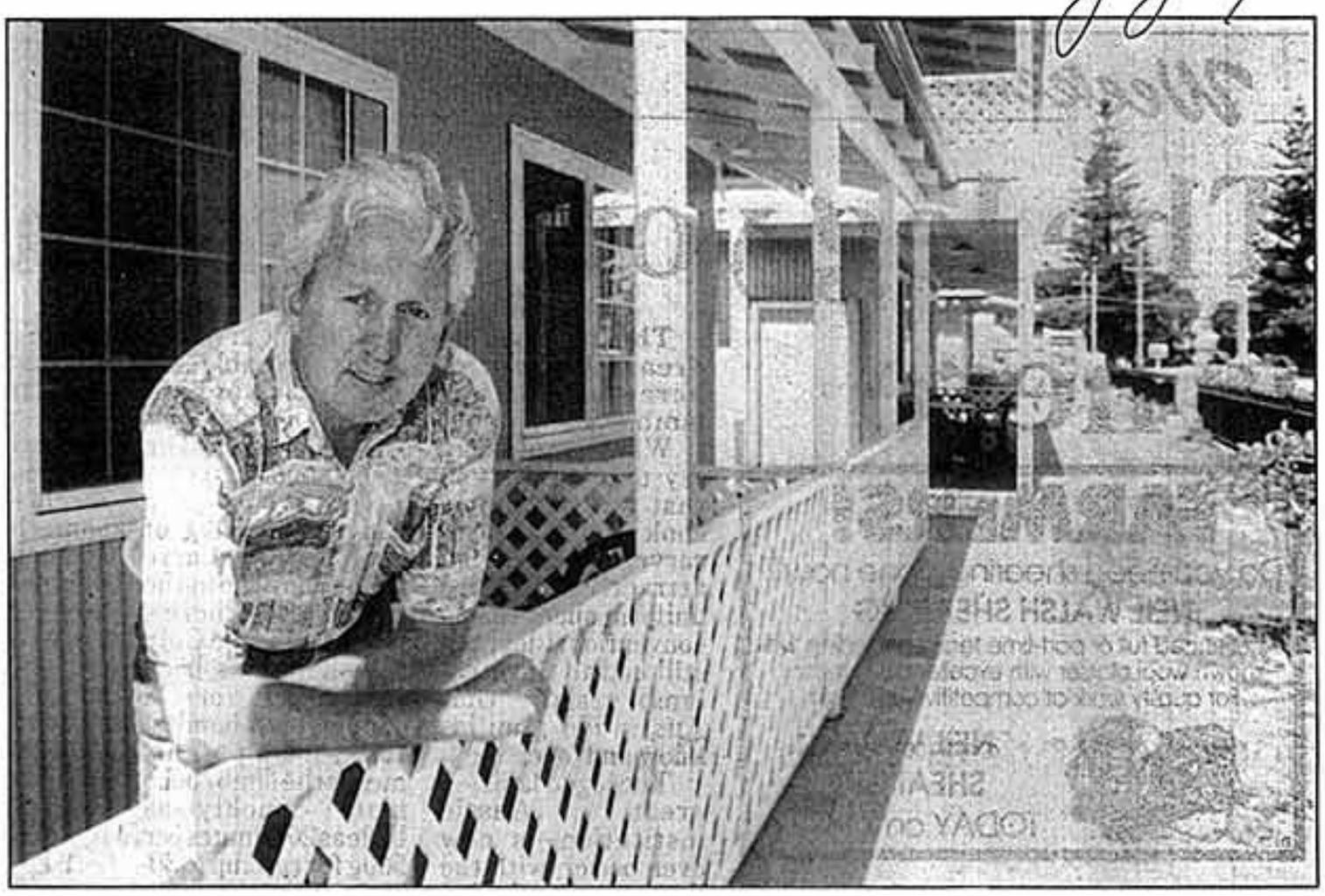
Mr Baverstock drew the Greek Islands or Middle East as a good example of centuries of climate sensible construction.

Esperance had a unique opportunity to use the method to create a style appealing to other towns.

"The typical Australian climate is high radiation and hot days. If you are trying to attract tourism you need to have something unique.

"I think the way people are moving back to Federation style homes is an attempt to get back to an historical link as well as adapt to climate."

Unfortunately the large verandahs did not make use of winter sun.



CLIMATE SENSIBLE: Garry Baverstock thinks Esperance has a long way to go to reach the ideally climate sensible community.