

The West Australian

New Homes

Power to the people

□ A Bayswater resident has tackled the spiralling cost of living by combining solar energy with a cost-efficient lifestyle.

□ FRANK PLATELL reports.

ENERGY savings from passive solar principles are not exclusive to big homes, but can benefit all.

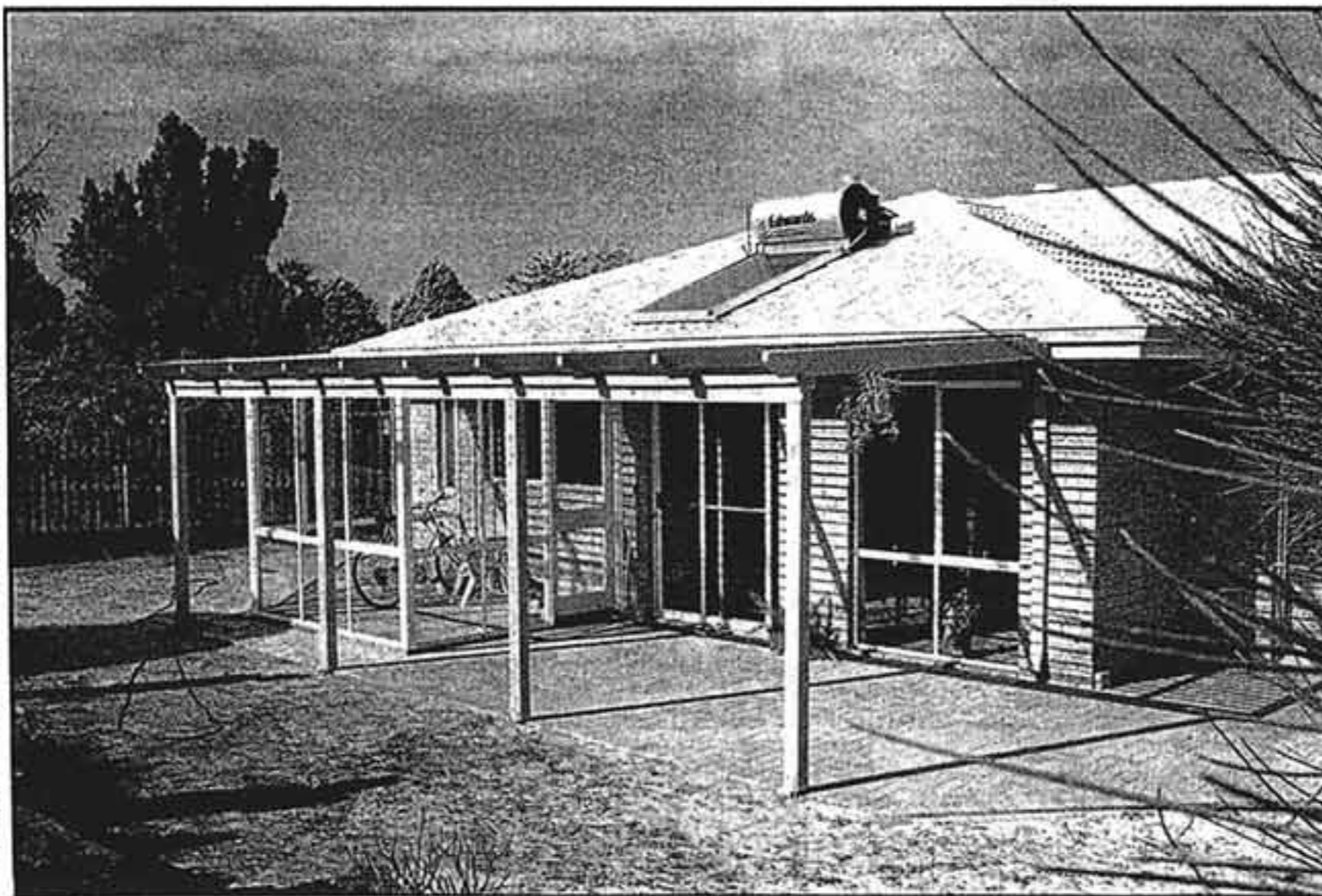
It is just a matter of careful design and orientation, of exploiting the sun and suitable building materials.

And it does not have to cost any more to construct, as a project builder has proved with a three-bedroom concept in Avenell Road, Bayswater. Savings with the total concept have been put in the order of \$4000 a year, after tax.

While the owner was very conscious of the benefits of a passive solar design he had an even broader target, to promote an energy efficient lifestyle. He has acknowledged that he really only needs one car for a small household and he chose the site to be close to public transport — rail and bus in this case.

He approached architect Garry Bayerstock to find him a suitable small block of about 500sqm which fitted into the new green street criteria for living in the 21st century. He asked for a simple project-style home in traditional clay brick and tiles, with aluminium-framed windows.

The project home concept is obvious at first glance but there are subtle refinements, such as ceilings taken to 2.6m and incorporating adjustable vents for cooling of a summer's



Solar pergola and solarium are to the side and face north, fully exploiting the warmth of the sunshine during the winter months. Worthwhile outdoor living areas have been created on a site of only 500sqm.



LEFT: The chef only has to open the window to get the full benefit of warmth from the solarium at this time of the year.

RIGHT: The winter warmth is now penetrating well into the main living spaces, the heat soaked up by floors and walls during the day being radiated back into the room at night.



Abode tailor-made for Perth

● From page one

night. There is double insulation in the roof space with aluminium foil under the light-coloured concrete tiles while a bulk sheepwool with an R2 rating goes directly on the ceiling joists.

There was a trade-off to save on construction costs, passages being deleted to add 10 per cent to useable floor space in main areas. Only the one dual-access bathroom was needed and the laundry made a utility area with an alternative entry to the home.

These changes, plus a single carport, saved enough money for the solar pergola to the outdoor living, the solarium off the kitchen and the use of reflective solar blinds. The trade-offs have resulted in a house that is as efficient as possible for the Perth environment.

It meets the exact specifications for a low-energy solar design as researched and documented for this city. At this time of the year the sun at noon is streaming fully through the solar pergola and as much as 4m into the main living spaces.

‘It meets the exact specifications for a low-energy solar design as researched for this city.’

Here the warmth is being soaked up by concrete floors and solid clay brick walls which are acting as thermal banks to radiate the heat back into the home at night.

The solarium which also has a solar pergola adds significantly to the overall warmth indoors in the bleakest months of winter. The pergola ensures that it is in complete shade in summer.

It has added value for growing hydroponic vegetables all year round and is perfect for tomatoes.

“Curtin University has applied for a grant from the Renewable Energy Council to monitor the house for a year,” said Mr Bayerstock. “The final report will include information on comfort levels, energy bills and construction costs compared with the average affordable home

“We have done our own calculations which show that the total savings in energy, transport and lower vegetable bills to be in the order of \$4000, after tax. This is virtually the same as giving a wage earner a pay rise of \$7000 a year, or \$140 a week.”

It is easy to drive past the Bayswater home because of its overall simplicity in facade treatment. It really turns itself to the side to integrate main outdoor living spaces, as well as adding to the overall privacy.

The site meets orientation requirements perfectly in that it faces east-west and has the north orientation to the side for maximum solar gains. The main entry is off the south side, from the carport and into a hall that gives access to all living spaces, plus the study which could be a third bedroom.

It has a formal sitting room which can be made a cost sitting area by closing double, bi-fold doors. But leave them open and you have an expansive living zone extending for about 10m with the kitchen included.

While the busy chef can relate to all indoor and outdoor activities her work benches are screened by upstands that can double as a servery. The informal living space has the meals area for all occasions and it can be expanded to take a table setting of at least ten.

The kitchen has ample storage with 5.5m of bench cupboards plus a pantry unit. There is a split-level stove with gas hotplates lining up with the main bench.

The dual-access bathroom gives an en-suite effect to the main bedroom. It has the shower combined with the bath in an area tiled to 1.8m and there is a vanity cupboard with wall mirror to match.

The house, which the owner has named Winifred after his mother, can be duplicated as shown for about \$60,000. It will be open for inspection tomorrow afternoon.