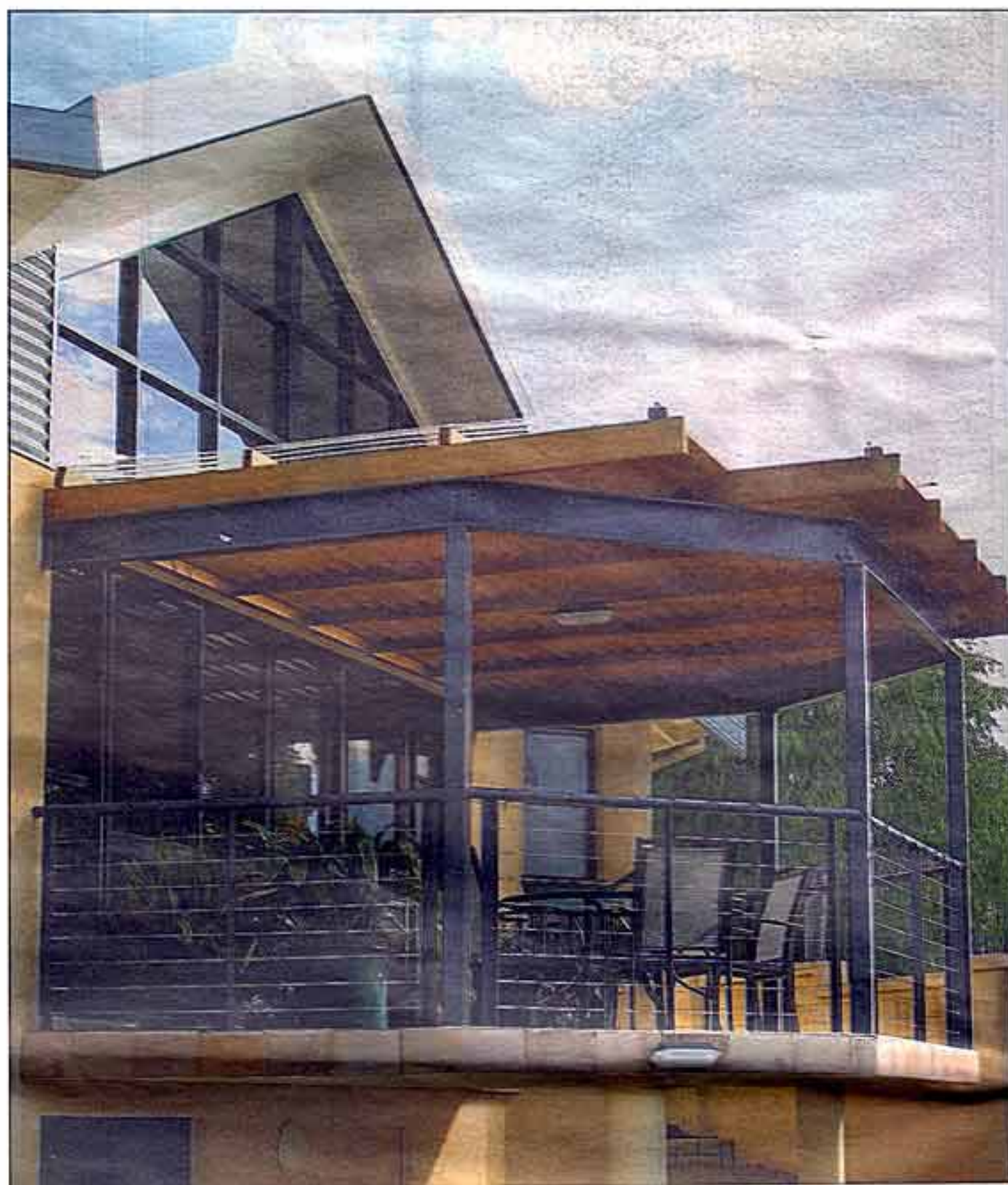


A corner block, a steep slope and a request from the owner for an energy-saving house produced a striking result. Frank Platell reports.



A clerestory gable was introduced to this northern facade to produce a high level of natural light indoors and allow the winter sun to penetrate.



## Shaping up to the energy challenge

### FRANK PLATELL

Architect Garry Baverstock can get some curly requests from people who want to exploit the passive-solar concept for an energy-efficient home.

One client had already bought his site in Kensington and asked for a study on its potential as an energy saver.

Mr Baverstock could see possibilities if the design was cleverly shaped to exploit a northern aspect from the rear, but at an angle of 45deg. To add to the difficulties, there was a fairly steep slope down from the street.

And to make matters worse, it was a corner site which presented difficulties for setbacks.

But there was a solution for the environmentalist owner, who has since moved in and proved that it works well as a comfortable, energy-efficient residence.

Mr Baverstock's solution was to make the main part of the home run parallel with the boundaries but to splay the northern facade off at 45deg. This produced interesting

architecture as well as a free-flowing living area indoors.

A clerestory gable was introduced to this northern facade to produce a high level of natural light indoors and allow the winter sun to penetrate as much as 7m. This bathed the whole living area in up to eight hours of daylight in the middle of winter.

The benefit of the masonry construction was that the warmth of the winter sun was absorbed by the brick walls and the tiled flooring. These acted as a thermal bank and released the warmth slowly at night, keeping the house at a comfortable, stable temperature throughout the winter months.

Curtains and blinds, which are opened during the sunny winter days and closed at night, enhanced the strategy. With the backyard facing north, these curtains and blinds could be operated while maintaining privacy, also minimising the risk from intruders.

During summer, by opening windows to natural cool air, the thermal banks can work in reverse. The average night temperature of 19C in summer cools the walls to within 1C or 2C of this temperature and the house can comfortably ride through a heatwave.

"We estimate that the passive-solar home is saving about 70 per cent on energy, compared to the normal suburban house," Mr Baverstock said.

"The figure is aided by a solar-powered, gas-boosted hot-water



system. It is well insulated above the current mandatory requirements, going into the cavity of brick walls with a double layer on the ceiling."

The slope of the site was negated by having an undercroft basement on the northern side. By burying this undercroft in the ground on three sides, it had a moderating effect on the temperature, making it cooler in summer and warmer in winter.

North-facing balconies and specially designed solar verandas ensured indoor-outdoor living for the

owners. They are now pursuing their passion for gardening along water-wise permaculture lines.

Mr Baverstock saw his finished project as a contemporary Australian Mediterranean-climate design, offering natural comfort with its even ambience of natural light in the free-flowing living areas.

The home is not open for inspection but details can be discussed with Mr Baverstock by phoning Ecotect-Architects on 9286 3811.



Specially designed solar verandas ensure comfortable indoor-outdoor living.