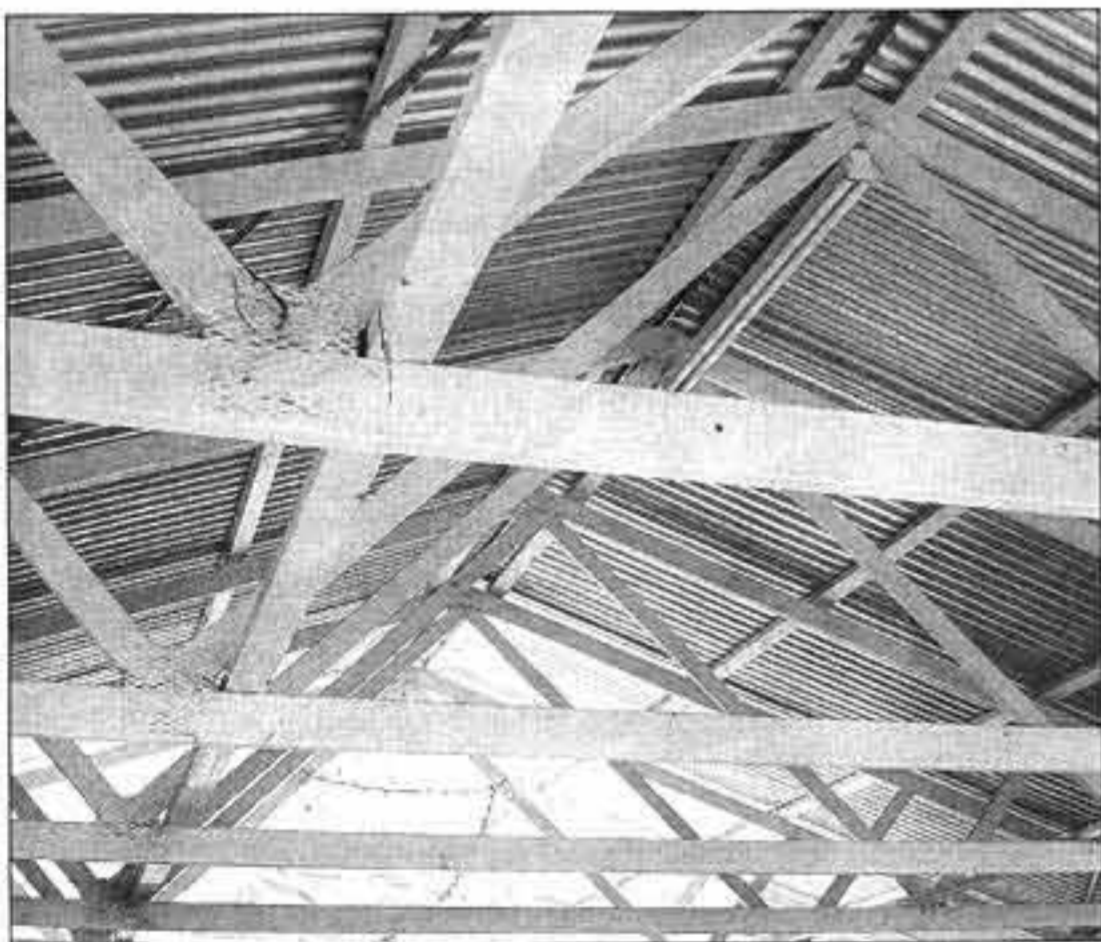




The design maximises the cool sea breezes of summer and creates a comfort zone that does not exceed 28C, even in a heatwave, nor drops below 18C in winter.

Adapting to a solar system



The shed has been retained as part of the homestead.

FRANK PLATELL

An agricultural scientist with management skills realised that he was not using natural energy enough for life on the land.

Being an economist he could appreciate the significant savings in energy costs while upgrading his lifestyle with a good passive-solar design.

Geoff and Gail Eliot also could see an important health bonus in a stable, thermal environment, particularly at night. The idea of living in a house that breathed appealed to them.

They both had farming backgrounds and wanted to create their ideal rural retreat. To this end they bought a block in a rural subdivision called Wooree near Geraldton.

They approached solar architect Garry Baverstock for help with a concept.

Initially the Eliots set out to meet climatic requirements with a shed while their home was being built.

It was so well executed that it has been retained as part of the homestead complex and can be a private retreat for guests.

The architect started with a master plan to exploit the site and enhance the thermals of the homestead by providing extra shade and breeze traps on the east and west elevations.

From a visit to South Africa, the Eliots could see the benefits of their stoeps which effectively were pergola greenhouses to protect those elevations. At Wooree they were incorporated for two reasons, to enhance the integration with the landscape and to lower the capital costs on verandas.

The overall concept is almost a simple rectangle but enlarged one end for an expansive, almost square living zone, in turn calling for a pyramid-shaped roof and matching ceiling. This steep space reaches up almost 6m to a north-facing highlight and much is made of the exposed timber.

This highlight, apart from being an important source of natural light, lets

the winter sunshine into the whole of the living zone, where the warmth is soaked up by the floor during the day to radiate it back at night. It is like a thermal bank.

Windows to all rooms have been designed for the Geraldton climate, which is warmer all year round than Perth's and requires less glass area for the passive-solar benefits.

The design maximises the cool sea breezes of summer and creates a comfort zone that does not exceed 28C, even in a heatwave, nor drops below 18C in winter.

The extension for the sleeping zone has but the one, multi-purpose bathroom. But there is a powder room off the laundry in the tradition of the old mud room. There also is a multi-purpose room nominated as a study but ideal for a second overnight guest.

The home rates as a three-bedroom design. The owners have a grown-up family but wanted to encourage them to visit.

Extensive solar control pergolas in coloured steel have louvres at 34C, allowing for maximum sun penetration in winter and providing solid shade in summer.

They have a choice of alfresco areas with a winter court to the north.

The main covered area to the south-west corner is 15m x 9m and gets considerable use all year

round in a climate like Geraldton's.

"I have come to the conclusion that Geraldton must be one of the most effective locations in the world to apply the passive-solar principles," Garry said.

"It has the best solar radiance for winter heating and also a reliable sea breeze of summer, plus clear night skies for cooling metal roofs."

Details of the homestead can be discussed with Garry, on 9386 3888.



Louvres provide maximum sun during winter and shade in summer.