

Simply cool

WHEN you live in a climate as near-perfect as that of Perth, why would you want to live in air conditioning? This was the question the owners of this beachside house, designed by architects Baverstock, Murphy & Associates, asked themselves when they pondered building it.

After three years in the oppressively controlled indoor climates of American houses, the family wanted a future in a home which was cool in summer and warm in winter — naturally.

Built in local limestone by Frank Swann, this elegant home is built to passive solar principles without compromising its aesthetics.

Very simply, all the living is carried out in the northern rooms and the less-used rooms, or rooms where proportionately little time is spent, like the spare bedrooms and the bathrooms are to the south.

The two-storey home is designed in a U-shape. You enter on the south side of the house at the bottom of the U, and arrive in a large entrance hall with a double storey void.

Doorways lead from the entrance hall to the kitchen and open-plan living area on one side and to a formal lounge on the other.

These major living areas face north, looking out over the garden with its swimming pool and tennis court.

These rooms are also bordered by a solar pergola, the slatted roof of which is a major player in the passive-solar functioning of the home.

A large, glassed veranda with slatted roof makes a shady, restful spot in summer and a great place to stretch out in the sun in winter.

The slats are placed at a calculated angle which allows the lower winter sun to pour through the slats and warm the rooms yet block out the sun during its higher, summertime arc.

The slats don't block out the sky, so there's still plenty of light.

The solar pergola is really beautiful to live with, and because it's made of western red cedar, the slats look natural and the maintenance is next to nothing.

The master bedroom and children's rooms upstairs also face north, with awnings to deflect the sun.

Windows in all the south-facing rooms — spare bedrooms and bathrooms — have no awnings, allowing in as much light as possible.

The materials from which the house is constructed are also important.

The limestone walls are insulated with styrofoam and the floors are tiled throughout the living areas.

Even if there is no sun for 10 days during winter, the tiles store the heat.

The owners put in a fireplace though it is hardly ever used. Without the right orientation of the house, it would be an expensive house to heat, or to cool.

A high-tech ducting system regulates the temperatures in different parts of the house.

When a sensor detects a temperature fall in the southern, downstairs rooms, it activates the ducting system to pump hot air from the north-facing upstairs rooms to compensate.

The ducting system also allows hot air to be pumped out of the house on hot summer nights.

The garden is also designed to help the house regulate its temperatures.

Deciduous trees are planted close to the house so that their leaves don't obscure the sun when it's needed in winter, but add shade in summer.

The overall impact of the design is a comfortable, elegant home full of light — with extremely moderate energy costs.

