The Project Group

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CLIENT:	**BHP SHEET & COIL PRODUCTS DIVISION WA**
TITLE:	**PASSIVE SOLAR DESIGN PROVIDES BIG ENERGY SAVINGS ON AWARD-WINNING HOME**
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An award-winning home in Perth has incorporated passive solar design features to reduce its energy consumption by 60 percent over that of a conventional home.

The Cottesloe home was designed by architect Garry Baverstock of Baverstock and Associates and won an energy conservation award at this year's Royal Australian Institute of Architects (WA Chapter) Awards.

An important energy efficient design component of the home is it's BHP COLORBOND prepainted steel roof in Birch Grey, chosen for its ability to reduce the amount of heat entering the home as well as its inherent strength and good looks.

"The site is high up and subject to strong winds, so we needed a roofing material that would perform under those conditions," Mr Baverstock said.

"At the same time, the thermally efficient qualities of a steel roof were also important in the design context. The lighter Colorbond steel colour absorbs less heat during the day and cools down quickly at night, which is particularly important in summer."

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The two-storey Cottesloe home is designed in a French provincial style and sited to take advantage of sweeping coastal views to the north and west.

"Sun, light, fresh sea air and a large backyard facing north were all elements which determined the site planning and detail planning of the home and the landscape," Mr Baverstock said.

"It was a perfect site for a well optimised, environmentally designed house."

The incorporation of basic energy-saving design features means that the house remains at a constant temperature of between 18 and 28 degrees Celsius all year round, without the need for airconditioning or space heating.

Insulation in the cavities also enhances the thermal mass properties.

A heat recycle/night ventilation duct and fan recycles heat throughout the house during winter and evacuates hot air during summer, cooling the mass at night.

The Colorbond steel roof is insulated with reflective insulation. Wool bulk insulation has also been used over the ceilings.

About 50 percent of the north-facing side of the home is glazed. During winter, when the sun is lower in the sky, the windows allow for the warming sun to enter and heat the home.

In summer, when the sun is higher in the sky, these windows are shaded by solar pergolas.

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The siting and extensive use of windows also allows the home to take maximum advantage of the cooling effects of afternoon summer breezes.

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