



Unique Geometric Design and Innovative Environmental Technologies

National Precast Chief Executive Officer Sarah Bachmann believes in putting her ideas into practice with a sandwich panel precast home which fronts onto the bush in the Adelaide Hills.

Called the Hillside Project, the house occupies a commanding position on a 3000m² site, with views to Southern Adelaide and the coast at Glenelg.

The main feature of Hillside is the precast concrete sandwich panels, manufactured at Bianco Precast's Gepps Cross factory and fire rated to four hours. The house is also founded on concrete slabs, with infloor hydronic heating coils.

Apart from the fire-resistant sandwich panels, the windows will also be fire-resistant double-glazed, toughened glass. Manufactured by Trend Windows, the window system has been tested by CSIRO to withstand a fire of up to 40kW/m². Other bushfire measures include Colorbond steel gutter guards and roof and in-ground sprinklers, backed up by a 95,500L rainwater collection tank, treated and stored grey water, a 16,500L stormwater collection tank and a 3m x 16m lap pool.

Bachmann said the main objective, apart from constructing a comfortable family home, is to showcase what can be achieved with fire resistance and energy efficiency, given the compromise of having the site face west. She said the house is angled towards the north as much as possible to face west-north-west, to take some advantage of the winter sun and the rooms are staggered to maximise solar gain. The high thermal mass floors and the high thermal mass internal sections of the exterior sandwich panel walls help reduce energy costs to heat and cool the home. In winter, heat from the sun makes contact with the thermal mass during the day and then is released inside the house at night, to maintain a more even temperature. Eave overhangs, together with a solar pergola, mechanical shading devices and a thermal break in the exterior sandwich panel walls are designed to minimise the summer sun exposure, thereby keeping the internal temperature of the home lower and more even.

Precast manufacturer

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Electricity supply will be via a grid connected Zen 17.2kWh capacity photovoltaic solar panel installation, mounted on the roof.

Even the surroundings of the house have been carefully considered, with drought tolerant and fire resistant plants being chosen for the garden. Plants were even grown under low water conditions, in a similar environment to where they have been relocated. Bachmann points out that this helps ensure they survive following replanting.

Because the home is cutting edge, some suppliers have supplied their materials and services at a low cost in return for exposure in the design and construction industry media. The project website (www.hillsideproject.net) gives them publicity and also serves to educate the community about fire resistant, high thermal mass, energy efficient building. The project was a National Finalist in the 2012 Sustainability Awards and the swimming pool won the Gold Award Sustainable Category and the Bronze Award Lap Pool in the Pool & Spa Awards 2012. The home has also been featured in several local, national and international publications.