

This environmentally friendly, family home in Elwood is both modern and sustainable, writes Allister Hayman. Photography Fran Malley.



Living with a conscience



“When you’re talking about one-off designs, the additional sustainable features contribute somewhere between 8-15 per cent extra in cost, depending on how far you go. The cost is fairly minimal. I get asked a lot of questions about the price of our buildings, but I’ve never been asked to do a cost-benefit analysis on a granite bench top or a spa bath or a home theatre unit. And those items would handsomely pay for the additional sustainable features.” – Andreas Sederof

With a clean, modern exterior, Sunpower Design’s sustainable home in Elwood appears much like any other well-designed contemporary house. The predominantly white tones are softened by timber elements, while the ample glassing and wrap around deck give a sense of comfort and lifestyle.

“You wouldn’t know driving past that it was a sustainable, energy efficient building,” architect and engineer Andreas Sederof says. “It’s not until you look at it in more detail that you can see the more significant and subtle features.”

Andreas has been designing environmentally friendly buildings for two decades and has now completed over 400 projects. His company, Sunpower Design, provides an integrated engineering and architectural service, which he says is crucial to fully incorporating energy efficiency features into an overall design.

In the Elwood Home, the clients wanted a well-designed, modern, family home that was highly energy efficient and would make as little impact on the planet as possible. “It had to be light, bright, airy, inviting, super comfortable and had to minimize the amount of energy required to maintain those conditions,” Andreas says.





"You can be as sure as eggs as soon as this global warming takes traction and starts to bite, some of these things that we've been getting fairly cheaply, like electricity and water, will be at least tripled in cost. None of those items are going to remain the same in the next 15 years - even the next five years. And once these sustainable technologies become everyday off-the-shelf items, which they will sooner or a later, the cost will come down."

Andreas Sederof



To achieve this end the design incorporated state of the art energy efficiency technology and sustainable features. "All the materials, the finishes, the features and the energy efficiency of the building, were designed to have an absolutely minimal environmental impact," Andreas explains. The house uses recycled and plantation timbers, while the concrete blockwork and concrete slab flooring contribute towards a high internal mass. This raises the energy efficiency by improving the robustness, allowing the home to stay cool or warm for much longer periods than a light-weight building.

To the north of the site, a large A-frame house blocked much of the winter sun. To overcome this, Andreas incorporated large skylights into the roof over the living area. The triple-glazed skylights are equipped with an external motorized blind that protects from the intense summer heat. The house has large windows to capture sea breezes wafting in from nearby Port Phillip Bay, thereby doing away with the need for air conditioning, and all the glass is double-glazed to improve energy efficiency. Outside, a water feature stretches across the front of the building, which provides an evaporative cooling effect and adds moisture on hot dry nights. In tandem with the energy efficiency of the construction, the house also comes equipped with a solar energy system, rainwater harvesting, with a 15000 litre underground storage tank, as well as a cutting-edge grey water recycling system with a 2500 litre tank.

With the combination of rainwater harvesting and grey water recycling, the client's water bill is almost zero, while the solar energy channels excess power back into the grid, giving the owners a rebate on their electricity bill. "Their energy consumption would be less than a third of houses of the same size without those features," Andreas says. The home also leaves a very small footprint on the planet, emitting less than one tenth the carbon dioxide of a comparative sized home lacking energy efficient features.

With three bedrooms, a large living space that is attached to a kitchen-dining area, a music room, study, and a guest area that doubles as a children's playroom, the home has more than enough space for the family of four. "The uniqueness of the design was actually to get it to work with all of the features, and to make sure it worked the way the client wanted it to, given the site limitations," Andreas says. And what do the clients think?

"They love it," Andreas says. "They just love the light, the windows, the garden and the indoor-outdoor feel. And I think one of the nicest things about the spaces is that they create a welcoming, warm and inviting environment."

Not to mention environmentally friendly. "Yes, they feel very self-righteous living in that building!"