

less is more



Built in 1923, this Melbourne home underwent a major renovation to transform it into a sustainable building that retained its original periodic elements.

Redesigning old and new

An essential part of creating an energy efficient home is incorporating a smart design into the project from the very start – particularly in the case of a renovation. Dimi Kyriakou speaks to an environmental design company that has addressed this gap in the market.

Working with a blank canvas, such as a new home, presents an endless opportunity for builders, designers and their clients to come up with different features and elements to make the building as energy efficient as possible.

But what happens when the building in question is a renovation? In recent years,

renovations have become more popular and affordable to consumers than starting a home from scratch. And when you throw in the need for a building to be as energy efficient as possible, builders will often be expected to merge the two concepts together seamlessly – after all, many houses were built in eras that didn't necessarily take environmental concerns into consideration.

However, sustainable design isn't just about meeting the criteria of an energy rating system. Often, a responsibility is placed on the shoulders of designers and architects to create sustainable houses that are both aesthetically pleasing and good for the environment.

One such company is Melbourne-based EME Design, which specialises in designing beautiful and efficient buildings. According to founder and

principal Luke Middleton, their focus is to provide site-specific architecture that responds to the surrounding environment and client requirements.

“An essential part of EME Design is to create beautiful pieces of architecture that are sustainable in the long-term. It's often a balancing act of conflicting concepts – our designs need to work in the present day and in the future, because buildings should last for at least 100 years.”

Recently, the company was honoured at the 2011 Building Designers Association of Victoria (BDAV) awards for its design of a heritage-listed home in the Melbourne suburb of Armadale. Built in 1923, the home underwent a major renovation to transform it into a sustainable building that retained its original periodic elements.

“We approach a renovation like this with the same idealism and objectives as a new home, but first we consider the existing building and how to work around it,” Luke explains.

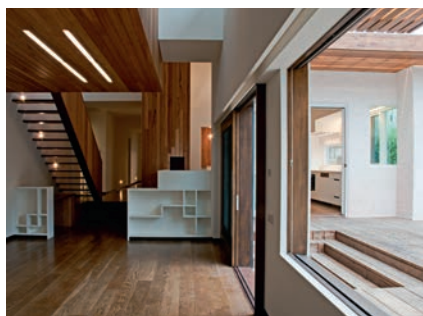
“It’s a process of observing the site, analysing the information and placing all of your functions within the building to see how it works with the environment. There are always conflicting issues throughout the process that you have to adapt to, so a lot of our design process revolves around a strong concept and then computer modelling to test the ideas and make subtle improvements.”

In the case of this heritage-listed building, the decision was made to sink the renovation approximately one metre into the ground in order to build a two storey residence that didn’t impact the view of the heritage home from the street.

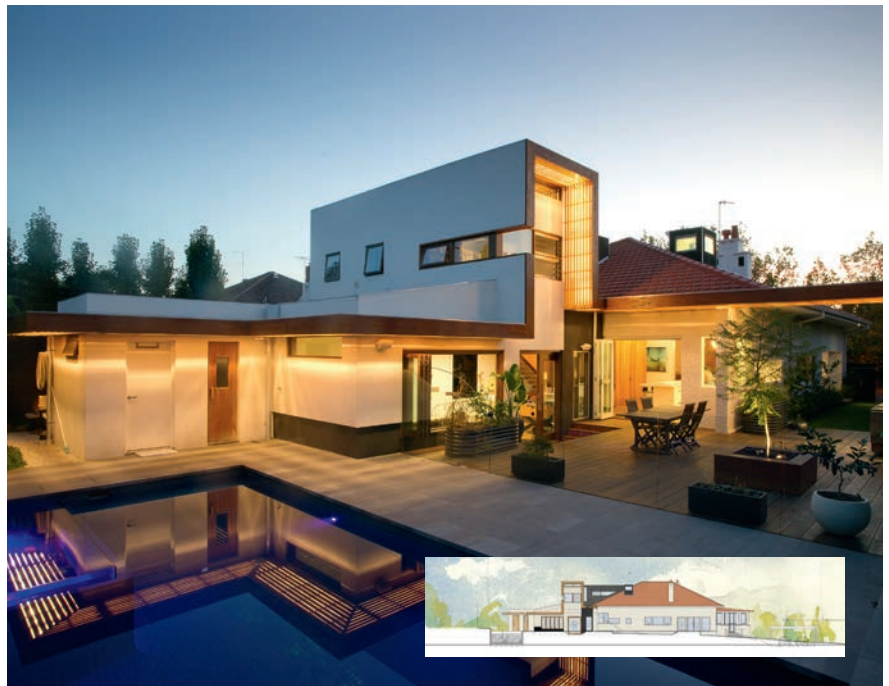
“The sunken floor can benefit from the earth surrounding it as this helps to stabilise the room temperature. Then we used the double brick building as a form of thermal mass, but it needed better ventilation. So we created a heat stack and a cathedral ceiling, which allowed us to include a ‘pop top’ roof with louvers that allowed the air to escape,” he says.

“We also looked at the original floor plan and where each of the rooms were placed in relation to their function and the movement of the sun over the course of the year. The bedrooms were then moved to the southern edge of the building while the kitchen and living spaces were moved to the northern edge where most of the sun would be during the day.”

The new-look home also captures more of the winter sun, while the existing



The earth surrounding this ‘sunken floor’ also helps to stabilise the room temperature.



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Photos courtesy of Scott Haskins. Inset image EME Design.

eaves and added strategically-placed landscape of deciduous trees provide extra shading in summer. By working with and enhancing the attributes of the existing structure, the energy efficiency of a building can be improved drastically. For instance, this Armadale home went from one star to six.

“Beyond the embedded sustainable features, all of our designs have a standard suite of sustainable features such as local and low-embodied energy materials, water tanks, high level insulation, double glazing, solar hot water, low VOC paints and joinery. These items have been in our specifications for the last 12 years,” Luke says.

“It’s sometimes difficult to keep ahead of the game when this sector is constantly changing, and we have completed a number of research projects with universities to discover exactly what works and what doesn’t work in sustainable theory. In the last five years we have focused on the fact that tangible, empirical results are paramount.

“Sustainability is about being acutely aware of your environment. I think a good, sustainable designer or builder is already in tune with the environment and how it impacts a building.” ■

Design advice for builders

According to EME Design, making a building more efficient during the design and planning stage is going to make all the difference in the long run. Although Australia has one of the lowest uptakes of using designers or architects, sometimes engaging the help of environmental design companies will give you some extra advice at the concept stage.

“By building sustainably, you’re future proofing a home so it is still affordable to live in after 50 years’ time,” Luke says.

Also, it’s essential for builders to question the ‘building bigger is always better’ statement that clients often suggest. Good design is about making complex things as simple as possible.

“Spatial efficiency is just as important as energy efficiency. People say that ‘less is more’ but we take it one step further by saying that building less is more sustainable. We try to encourage builders and clients to use multi-functional spaces – sometimes we’ve managed to get houses that are 300m² down to 200m²,” he explains.

“Ask the hard questions of yourself and all of the materials, because some people only see this as another marketing opportunity. It’s about digging a little bit below the surface and not taking anything for granted.”

EME Design
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