

Sustainableliving

This outdoor dining area was built from recycled bricks and old timbers

The cost of going green

BY WONG MEI KAY

Going green is such a hot topic nowadays. While the issue has been debated, discussed and dissected to death, the man in the street has yet to fully embrace the green home movement.

The problem is not the lack of information. Ironically, end users often find themselves bombarded with too much information and too many technical jargon.

There is also a lack of transparency with regard to a rather sensitive subject — the cost of going green. A global opinion survey conducted by the World Business Council for Sustainable Development found that green buildings are thought to be 17% more expensive than conventional buildings.

The same report, which is based on more than a decade's worth of analysis, adds that the majority of green buildings only cost between 0% and 4% more than standard code-compliant buildings. In fact, high performance buildings that undergo moderate levels of greening cost just 1% to 2% more than typical buildings — a rather reasonable figure if one factors in the long-term cost savings.

Several industry experts share their views on the cost of going green with *City & Country*.

A long-term investment

Why do people think green buildings are expensive? This perception, perhaps, has to do with the general attitude that anything environmentally friendly is costly.

"The reason why environmentally damaging products and lifestyles are more affordable is because we are not paying the full price for it. Someone else in a developing country bears the cost in terms of pollution, exploitative labour and natural resource consumption," says Farizan d'Avezac de Moran, senior partner at GreenA Consultants Pte Ltd in Singapore.

Some may be turned off by the term "green cost premiums", associating it with high cost and low returns. "Yes, there are cost impacts, but the savings and benefits will overtake and outweigh initial costs in no time. With a holistic approach to the building and designing process, costs can be significantly reduced," says De Moran, adding that the cost of going green is small and makes for a very good investment. "Over 20 years, the financial payback period typically exceeds greening costs by four to six times."

Passive design

Herman Teo, the general manager of the Green Building Index, is an avid promoter of passive design efforts. "These endeavours don't require extra green cost or have very



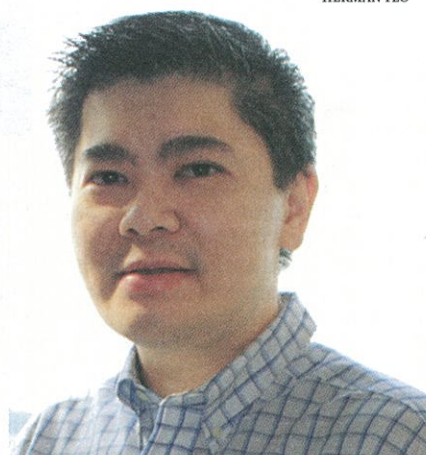
FARIZAN D'AVEZAC DE MORAN

De Moran: There are cost impacts, but the savings and benefits will overtake and outweigh initial costs in no time

minimal expenditure, and can be incorporated into any building or home," he says, adding that these factors contribute directly or indirectly to the award of points in the GBI certifications.

According to Teo, passive designs that are cost-efficient and can be easily adopted by end users include:

- Design orientation. By orientating the building correctly, heat transmitted into the structure can be reduced.
- Cross ventilation/stack ventilation. Natu-



HERMAN TEO

Teo: Passive design endeavours don't require extra green cost or have very minimal expenditure, and can be incorporated into any building

ral ventilation as an alternative to mechanical ventilation has several benefits: low running cost, zero energy consumption, low maintenance and probably lower initial cost. It is also regarded as healthier, having fewer hygiene problems with ducts, filters and so on.

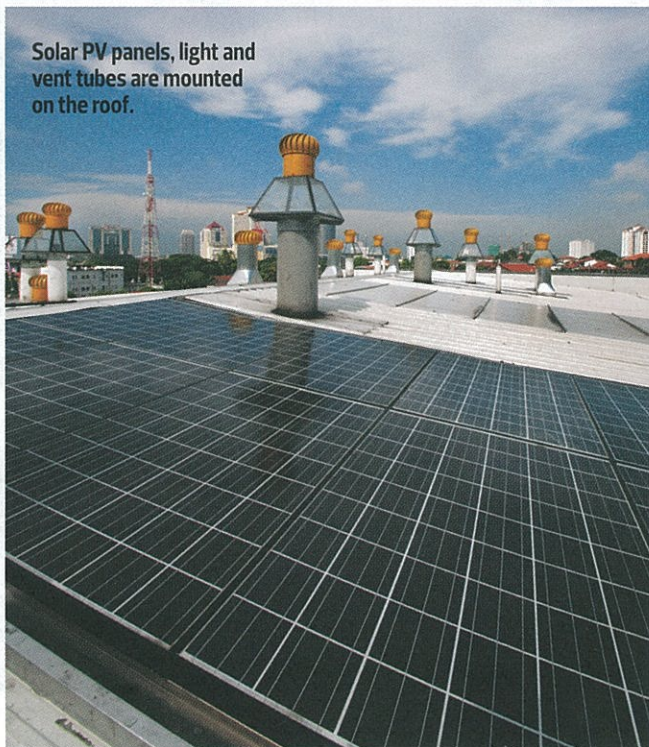
- Designing the façade to bring in more daylight. This can be done by adding more windows and building a skylight.
- Using louvres and light shelves. These

HOUSE PICTURES COURTESY OF ARCHICENTRE (MALAYSIA)



Tan's GBI Platinum rated house costs only 5% more than a similar newly built non-green house.

Solar PV panels, light and vent tubes are mounted on the roof.



Tan's expenditure on his green home

- Passive design — Free
- Retaining the original large canopy trees — Free
- Rainwater harvesting tank and system — About RM6,500
- Green wall mesh for climbers — RM1,500
- Solar photovoltaic system — RM110,000
- Wind turbines and light tubes — RM900 each
- Recycled timber — 60% of original cost
- Low E-glazing — 10% more than normal glass
- Stone finishes — project surplus materials: 25% to 50% of normal material cost
- Additional Rockwool insulation for roof — RM10,000

The experts' advice

- Integrate your sustainability goals to reduce unnecessary costs
- Assemble a knowledgeable team
- Commit to your end goals upfront
- Know factors that might drive costs up
- Make use of green initiative funds available
- Adopt passive design elements in your design blueprint

help to reduce glare and diffuse the daylight further into the room.

- Choice of paint. Painting the building white help to reflect heat and reduce heat transmission.
- Building a roof or herb garden
- Adopting a composting programme

The process and challenges

We spoke to Dr Tan Loke Mun of Archi-Centre (Malaysia) about his GBI Platinum-rated house he built for himself to better understand the entire process of his ambitious project.

City & Country: Budget — how much did you allocate initially?

Tan: I allocated the necessary amount to construct a 'normal' house. As I had planned and designed the house to be green-rated from the onset, I was able to undertake most of the green features with the original budget. When it came to large green cost items, such as solar PV [photovoltaic] panels, I just took the normal budget for air conditioning and spent it on the solar PV panels instead.

Was it hard to keep the project within budget?

Budgets need to be managed. I did not face much difficulty in managing my budget because I had limited resources and could not overspend anyway. I also took a lot of

effort to source for cheaper and greener alternatives, sometimes from second-hand timber yards and project overruns, that were regarded as waste materials.

What were the lessons learnt and the biggest challenges during the process?

Decide right from the start to go green, and start the whole process with the green DNA in the project. The GBI Residential Rating tool that can be downloaded for free from the GBI website is a good 'recipe' to use if you want to build a green home. Sourcing for green materials is a bit of a challenge as they are fairly new in the market. Good recycled timber is also increasing in price as everyone starts to appreciate its value. Start early to source and select materials.

How much more did the house cost eventually (if compared with a normal house?)

It costs perhaps 5% more than a normal newly built non-green house.

Do you think this is a reasonable sum to fork out?

We are thoroughly enjoying the house because it is cool, shaded and feels like a resort surrounded by trees and water features. Utility bills are low and there are no VOC (volatile organic compound) smells in the house even when we moved in after construction.

The cost of NOT going green

Many developers are building green today for a more cost-effective tomorrow. Water and energy-saving fittings will translate into cost savings for the entire lifetime of the building. Sustainability is not just about technology, it has to make business and economic as well as social and environmental sense.

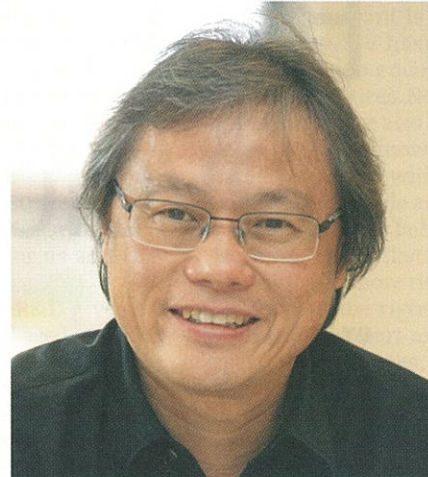
"The cost value of a green building increases after undergoing greening. Being green directly improves long-term property value," explains De Moran.

"Eco-friendly or green homes are not a trend but is the right thing to do," says Tan, adding that Malaysians are starting to re-learn the fact that they are living in a tropical climate with high humidity, heavy rainfall and hot sunshine. He believes that we should start to acclimatise rather than fight the climate with the use of expensive air conditioning and other artificial mechanical means.

Tan says homes should be built to adapt to the environment and climate and also be self-supporting and self-sufficient. The days of subsidised and low-cost energy and water are numbered.

Homes that rely and utilise less of such resources will definitely appreciate in value over those that are highly energy reliant. He points out that even in the automobile industry, we can see

PATRICK GOH / THE EDGE



Tan: Eco-friendly or green homes are not a trend but is the right thing to do

the demise of the gas guzzlers and the rise of hybrids and other more energy-efficient models.

Tan hopes that more incentives will be given to accelerate the adoption of green buildings and at the same time, more laws should be drafted to ensure that all buildings are more adapted and suited to the local environment. More importantly, guidance and public awareness programmes are needed to promote the entire concept of learning to live with sufficiency, he concludes. ■