

SPACE

2012 #4

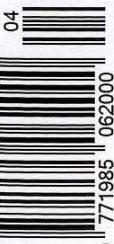


Design with a Difference

- Archway Studios by Undercurrent Architects
- The Binjai by Veritas Design Group
- Gita Bayu by CH&I Architecture
- L'Atoll Angers by Antonio Virga Architecte and AAVP Architecture
- Lik House by Satoru Hirota Architects
- wNw by Votrongnhia

greening the future

designs that respect the only home we have



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PPH4840/11/2012(031301) MICA (P) 11/01/04/2012

USD5.00 RM15.00 S\$7.00

SPACED IN



green experiment gone right!

A LOW BUDGET BUNGALOW PROJECT BECOMES A
HAVEN THAT INVITES THE OUTSIDE IN





This is the story of a home fondly called the “House without Finishes”. The story began when the homeowner sought CH&I Architecture to design a 2½-storey bungalow. The catch? A very limited budget.

Fortunately, this didn't prove to be too much of a challenge for the team at CH&I Architecture, although it was the firm's first attempt at a green project and hence a little experimentation and innovation was called for.

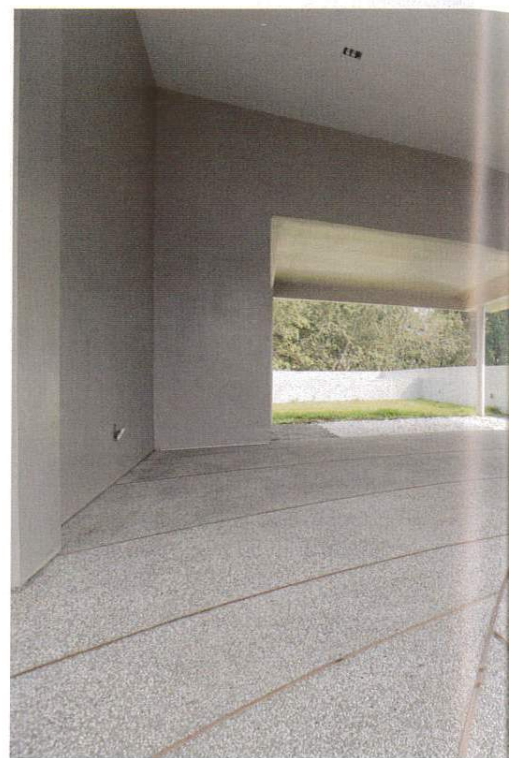
“We proposed to strip off all unnecessary materials to lower the cost and that's when we put forth the idea of a green home,” said architect Michael Ching. The team then conceptualised a compact home without unnecessary trappings to yield forth a budget-friendly home with low environmental impact.

“We believe in passive design for a residence, where technology is minimised,” explained Ching. “We looked at many examples particularly those built in the '70s, where mechanical-aid devices such as air-conditioning and electrical water heater were not essentials.”

Taking this approach, the building was strategically placed to maximise the home's relationship and interaction with the local climate and the site. Looking to Australia for inspiration, Ching utilised the concept of ‘small is beautiful’ where the building plinth is minimised to reduce the destruction of virgin land. Also, building a smaller, more compact building helped reduce construction waste, and aided in keeping costs low.

As a result, the House without Finishes sits on only 35% of the site, thus maintaining a significant amount of open space and greenery. Located on a fully-matured plot of land, the home sits next to an existing jogging trail which is well-utilised by the community.

To prevent unnecessary impact on the land, the design maximises green space and maintains existing land contours, thus eliminating the cost of importing and exporting earth. As such, the building seems to be a part of the ebb and flow of the natural terrain, at home with its surroundings.



THE HOME'S MAIN SPACES HAVE ALSO BEEN DESIGNED TO ENCOURAGE NATURAL CROSS VENTILATION AND WITH THE 2.4 METRE WIDE LAP POOL IN THE WEST, COOL BREEZES FIND AN EASY PATH THROUGH THE HOME

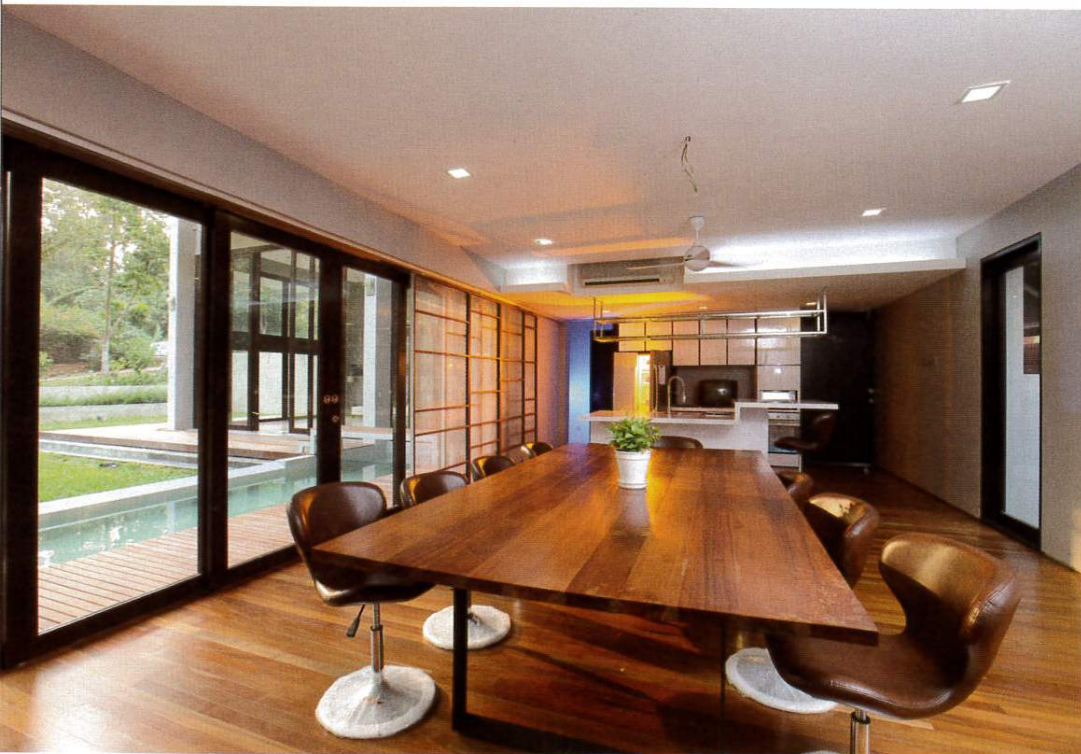


ON THE WALLS, RECYCLED CONTENT COLOUR SKIM COAT IS USED INSTEAD OF PAINT. IN AN EFFORT TO REDUCE THE PRESENCE OF VOLATILE ORGANIC COMPOUNDS (VOC), LOW VOC PAINT FOR THE CEILING AND LOW VOC TIMBER FLOORING, WERE USED. ALL MATERIALS FOR THE HOME WERE LOCALLY SOURCED

To keep the home cool, an insulated roof was installed in the form of a double reinforced concrete slab over the attic and turf above the master bedroom. The western perimeter is lined with double timber louvers which act as a sunscreen and in the east, a heat buffer zone was created in the form of natural ventilated corridor that connects the rooms. Lastly, the larger upper building plinth helps provide shade for the lower floor. Collectively, these measures minimise the heat which radiates through the roof and façade in conventional homes, and keeps the home significantly cooler.

In addition to playing down the heat, the two layers of timber louvers also give privacy while keeping the house well-ventilated and well-lit. The home's main living areas have also been designed to encourage natural cross ventilation and with the 2.4 metre wide lap pool in the west, cool breezes find an easy route through the home.

As an added measure, the sun's direction has also been cleverly used to maximise natural light and reduce the need for artificial lighting during the day as strategically placed windows in the north and south make the most of the sun's rays.



ENTICING THE HOMEOWNERS TO SPEND MORE TIME OUTDOORS, A REFLEXOLOGY ROCK GARDEN SITS RIGHT OUTSIDE THE GYM IN THE ATTIC. TO CREATE A GREATER LEVEL OF HARMONY WITH THE SURROUNDING ENVIRONMENT, ALL LANDSCAPING SPECIES CULTIVATED ARE LOCAL AND INDIGENOUS



In an effort to further reduce the home's carbon footprint, the main building materials – concrete, timber and glass – were selected for their basic characteristics, which maintain aesthetic appeal even without finishes. The floors are made from polished concrete and cement render. Timber used was left unstained. On the walls, recycled content colour skim coat is used instead of paint. In an effort to reduce the presence of volatile organic compounds (VOC), low VOC paint for the ceiling and low VOC timber flooring, were used. All materials for the home were locally sourced.

Rainwater harvesting is adopted for irrigation and a gravity-flow system selected instead of a pump. The home is also equipped with slow water flow to reduce potable water consumption by 40%.

The final touch was to green the home, literally. Main spaces were designed to face greenscapes with the main garden as the central focus and the backdrop of the house, taking up more than 50% of the site, plus a fruit and herb garden located next to the kitchen and the guest room. Enticing the homeowners to spend more time outdoors, a reflexology rock garden sits right outside the gym in the attic. To create a greater level of harmony with the surrounding environment, all landscaping species cultivated are local and indigenous. The house also connects to the existing jogging trail through its fenceless garden to promote community connectivity. **SP**

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