

MARRA + YEH ARCHITECTS

SHELTER @ RAINFOREST

architecturalinterior review

388

ARCHITECTURE PRACTICE

Marra + Yeh Architects

PROJECT

Shelter @ Rainforest

AWARDS

AR House Commendation 2012

PRACTICE PROFILE

Marra + Yeh Architects was formed as a studio practice in 2000, working in community development, urban design and residential projects in the USA. In 2005, they relocated to Sydney and established an office in Malaysia, working on urban, rural and remote area projects. They specialise in understanding place, climate and client to create sustainable, crafted, delightful environments.

BUILDER

Salvador Laput Paler (Head Carpenter)

PHOTOGRAPHER

Brett Boardman



Any architect knows that a consideration of site is absolutely critical to the design process. Climate, terrain and landscape are all factors in creating the kind of building that will serve the needs of the client well into the future. Australian based Architects Marra + Yeh love a challenge, and their project Shelter @ Rainforest takes site-sensitivity to a whole new level. Think highland tropical climate: hot, sticky humidity during the day, cool nights, torrential rains and the odd monsoon to boot. Then think shelter house in the middle of the vast Bornean jungle, difficult to access, thick with sprawling tropical flora, rugged

terrain, and almost no skilled builders in sight. These are just a few of the issues that plagued the design and construction of Shelter @ Rainforest, a new house for the manager and guests of a forestry company that has stewardship over this particular neck of the woods.

Set atop a ridge in the middle of the jungle, Shelter @ Rainforest is exactly what its name implies – a shelter for the manager of a prominent timber company and his family, as well as a guest accommodation shelter for visiting researchers, FSC auditors, consultants and company executives. In charge of over 100,000 hectares of forest, the

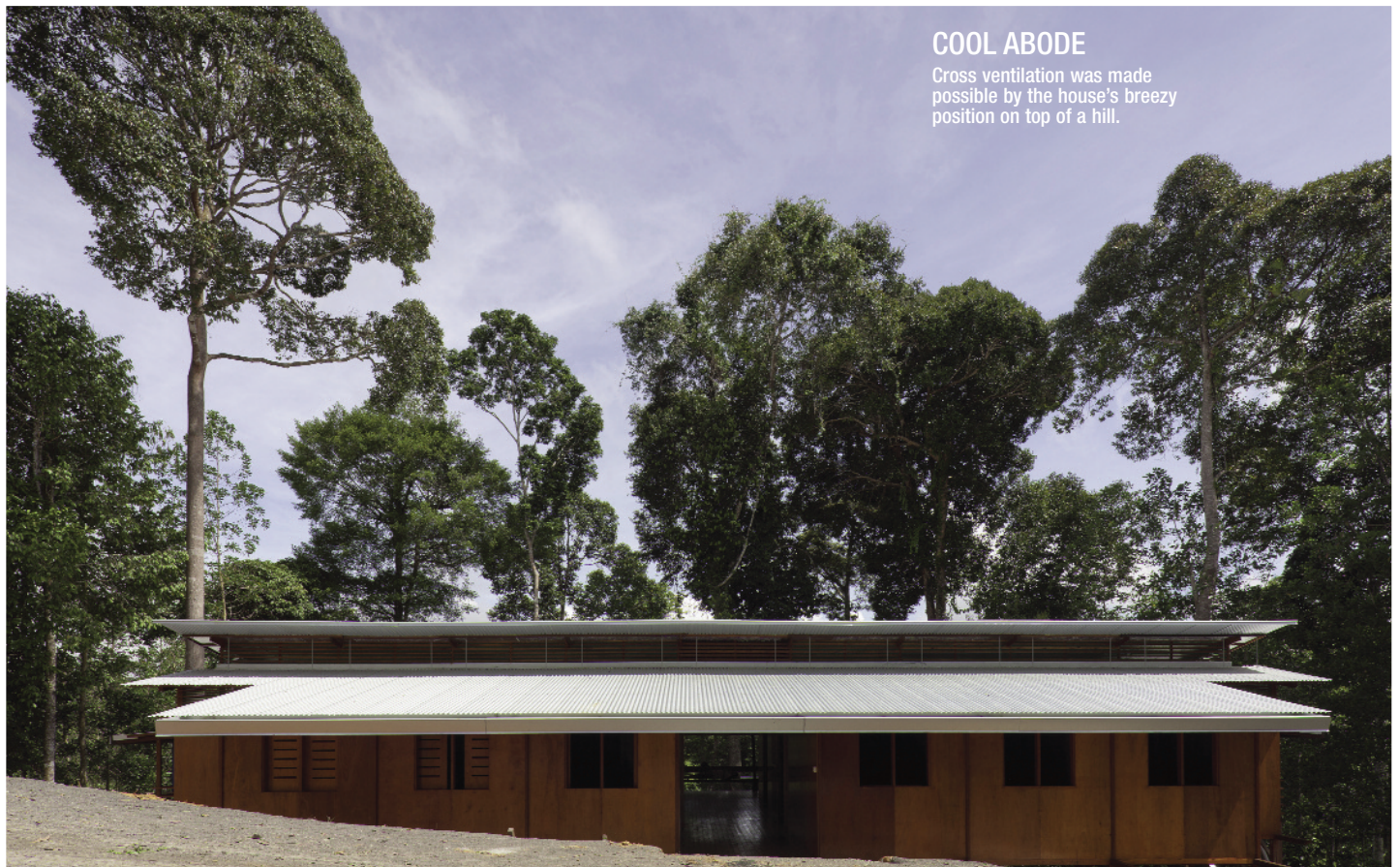
manager is responsible for overseeing a system of sustainable reforestation. This involves replanting an average of 30 wildlings for every tree harvested. The top priority for this client, therefore, was to create an environmentally sustainable and economically viable retreat, sensitive not only to the forest location but also to the operations of the company's project.

The house is set out in two halves in order to fulfill its dual-requirement to be both a home for the manager and a guest retreat. It is laid out as two mirrored halves joined by an entry 'dog run' and a long verandah overlooking the wildscape. This composition provides



JUNGLE RETREAT

The sprawling Bornean jungle was a challenge for architects and builders, who grappled with the landscape on a daily basis



COOL ABODE

Cross ventilation was made possible by the house's breezy position on top of a hill.



1. The “guests retreat” is separated from the main house, allowing privacy to the guests and the forest manager alike.
2. Inside the house, separate volumes allow for a separation of space. Guests meet and convene in some parts of the house, while others are intended for quiet, individual space.
3. Simple yet effective, a timber verandah runs along the side of the house, drawing in the natural beauty of the forest outside.

both privacy and community to individuals within a group and to each group. Simplicity and environmental sustainability were much more than just ‘optional extras’ when designing Shelter @ Rainforest: they were practical necessities. There are obvious reasons for this – lack of electricity and a dearth of urban luxuries meant that Shelter @ Rainforest would have to get by with the basics. The house is low cost and self-sustaining, with solar electricity, biogas units and rainwater collection. Its design is also passively environmental, with verandahs and overhangs to protect the inside from daytime heat, and natural lighting throughout. A screened

clearstory and monsoon floor panels provide constant ventilation, capitalising on the natural airflow that the house enjoys, located as it is on top of a ridge. The results of this passive climate control are amazingly effective – even in the mid-summer heat, the indoor temperature peaks at 26°C.

Fittingly, the bulk of the building is constructed from locally harvested and milled timber. It is assembled as a series of poles and planes, vertical and horizontal components that function both as structure and scaffolding. Locally made plywood was used as a diaphragm for walls and floors, and also as the module standard. High

winds and wild weather called for some ingenuity in engineering, such as the tying together of roof beams via threaded rods, each counterbalancing each other during high winds. Similarly, the lack of skilled craftsmen in Borneo called for creativity in the construction-phase of the house. Large models were made and taken in as a reference for the less skilled workers from nearby villages.

Australian firm Marra + Yeh, with their passion for unique architecture in challenging locations, were well matched to meet the demands of an obscure location and extreme environment. Shelter @ Rainforest represents

collaboration between architecture, forestry, botany and anthropology, and demonstrates the kind of teamwork and collaboration that is required when working in remote locations. Hopefully, with the completion of this building, this kind of collaboration can continue for years to come, now facilitated by a well-designed building. +

PRODUCTS

Walls Plywood **Roof** Bluescope corrugated metal **Windows** Plywood **Doors** Timber **Plant & Equipment** Kaneka solar panels **Ceiling insulation** Polynum reflective **Artwork** Made by local tribe

