

ARCHITECTURE MALAYSIA

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# sustainability

The Headquarters of Energy Commission of Malaysia Putrajaya  
55 ArchiCentre Subang Jaya  
Belum Rainforest Resort Pulau Banding  
BackHome Kuala Lumpur  
Nothing Cardboard Office Amsterdam

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project

C' ARCH ARCHITECTURE & DESIGN SDN BHD

# belum rainforest resort

pulau banding





/1 An overview  
/2 View from the Spit Fountain



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(ARCHITECT'S STATEMENT)

» The Belum Rainforest Resort is located on Pulau Banding, an island on Tasik Temenggor, North Perak, Malaysia. To the north is the Royal Belum Forest, which is 130 million years old, and to the south is the Temenggor Dam.

Being located at an environmentally sensitive area, the resort was conceived as a sustainable development with the aim of providing convenience as well as an educational experience of nature and green issues. An extensive consultative process with environmentalists, academics, concerned NGO's and the Local and Federal Governments was carried out during the conception of the project.

The 70-room resort is a combination of new buildings

and renovated elements. What emerged was a series of structures and building details developed with an underlying theme of recycling, sustainability and energy efficiency. Some of these details include feature "huru-hara" walls constructed out of recycled bricks salvaged from existing buildings on site, "sapling" screens harvested from fast growing sustainable local timbers, a "safari roof" using a ventilated air-gap as a natural insulating layer, concealed catch-basins for storm-water management and heat recovery systems for hot-water from a/c units.

Woven into the fabric of the site is a landscape consisting of a series of thematic gardens, of indigenous trees and plants. Each "garden" would allude to cultural

and societal role of trees and plants, e.g. medicinal, economic, ritualistic, culinary uses. In this way, the gardens seek to educate as well as to encourage the local flora and fauna to make their home around the resort. The gardens are complimented by a series of water features, which provide areas for rest, reflection and nature appreciation.

A tropical architecture of deep roof eaves and fenestrations, which encourage through natural ventilation was developed. Addressing the above agenda and the tropical environment, several design principles were distilled and adopted from the local vernacular architecture. These include the provision of deep roof overhangs in response to tropical rainstorms,



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/3 From the garden

/4 Night view



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screens to filter out glare from the bright sun and layouts, which encourage cross ventilation to provide comfort and natural cooling without air-conditioning.

The new guestroom buildings comprise of a steel-framed structure with lightweight aerated concrete blocks. Covering each block is a "safari roof" with a 2-metre eave. The safari roof consists of a

double-layered sinusoidal profiled metal deck roof with a 300mm ventilated air-gap acting as a natural insulating stratum. This air-gap also provides a simple sound-attenuating break from the heavy rainfall on the metal deck roof.

The new guestroom buildings have a depth of 7 metres, with open fenestrations located on both sides. Within the room, cross ventilating breezes through the entire length of the room is facilitated by screened fenestrations on both sides of the building façades and wardrobes which slide away between the sleeping area and bathroom.

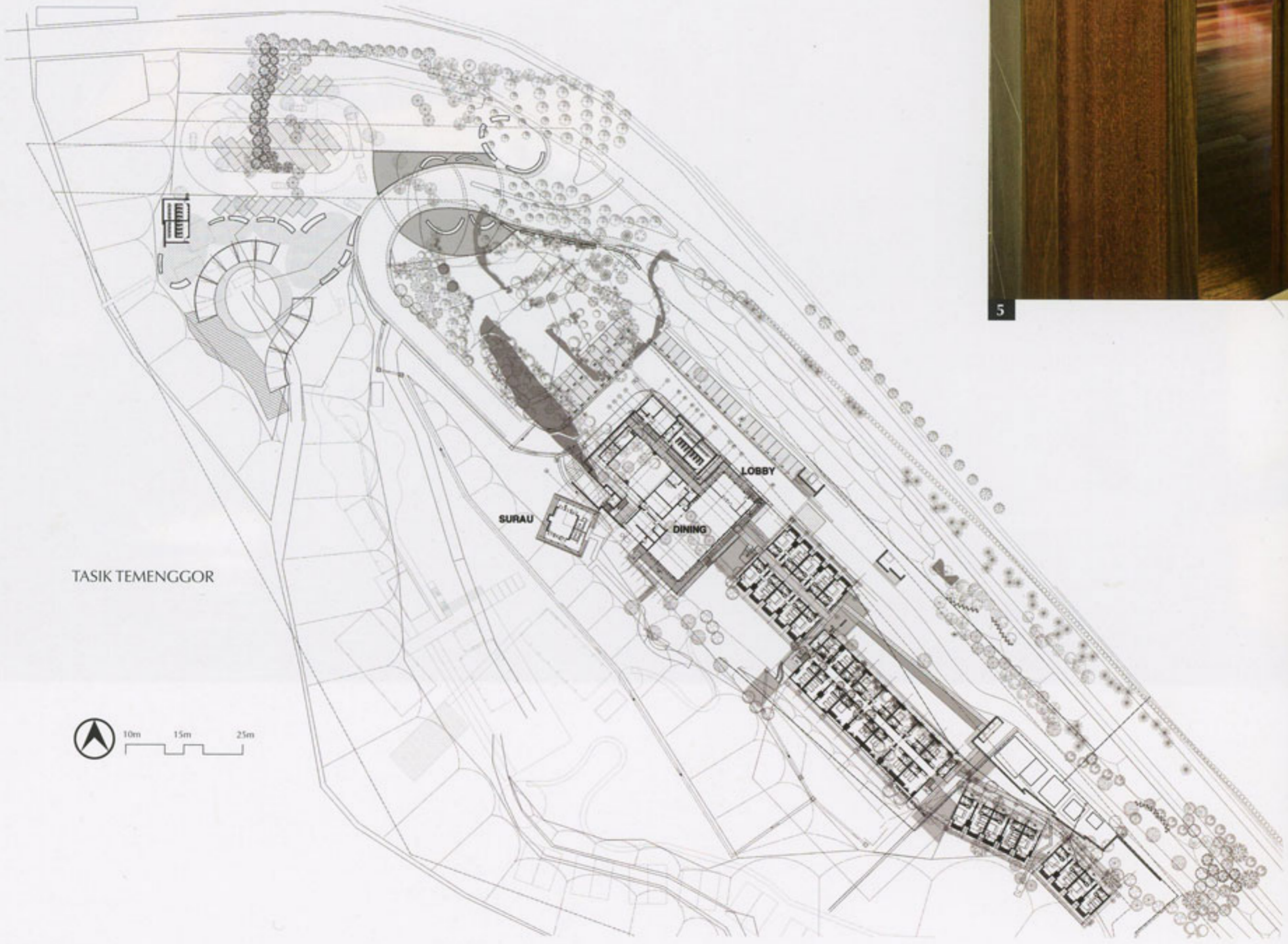
Responding to the tropical jungle environment, the guest room façades facing the lake are 4-layered. Internal retractable



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- /5 Closet
- /6 Washroom
- /7 Sapling screens

blackout roller blinds complete provide complete enclosure, when required. The inner layer is a sliding insect screen, a necessity for allowing the windows to be open but keeping the multitude of living things out. The centre layer is glazed aluminium casement windows.

The outermost layer consists of "sapling" screens which cutout glare and provide a degree of privacy for the rooms whilst still allowing cooling breezes to filter through. These screens comprise of saplings harvested from fast growing sustainable local timbers (*Somah / sp. ploiarium alternifolium*) wedged into a galvanized steel frame. The screen presents a building façade of varying textures and colour hues that responds to light and shadows

of the day. Dependent on the degree of exposure to sunlight, the colour of the sapling either retains a slight hue of red or as all exposed timber, becomes a silvery grey.

A variation of the 4-layered façade described above is repeated on the inner side. This façade has opaque lapped sliding-glass screens to maintain privacy to the bathrooms and pleated insect screens. An outer sapling screen completes the composition of the building façade. Textures and splits in the saplings present numerous shades of greys, reflecting the ever-changing myriad of colours and textures of the tropical rainforest around the resort. am