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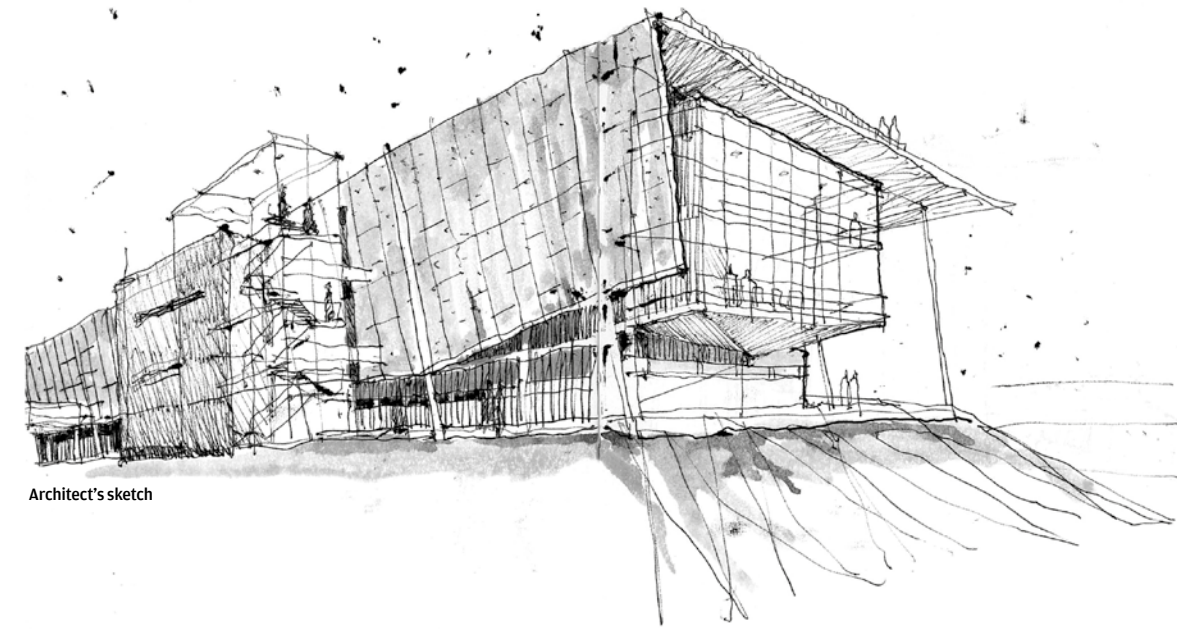


SUNWAY SOUTHERN

The site office, which takes on a boxy exterior with a sloping volume, is a successful testament to simple modular structure, creating a conducive working environment through effective space planning and passive design principles.

REGION OFFICE

The modular structure is protected by a large over-sailing roof that gives the site office its final trapezoidal form



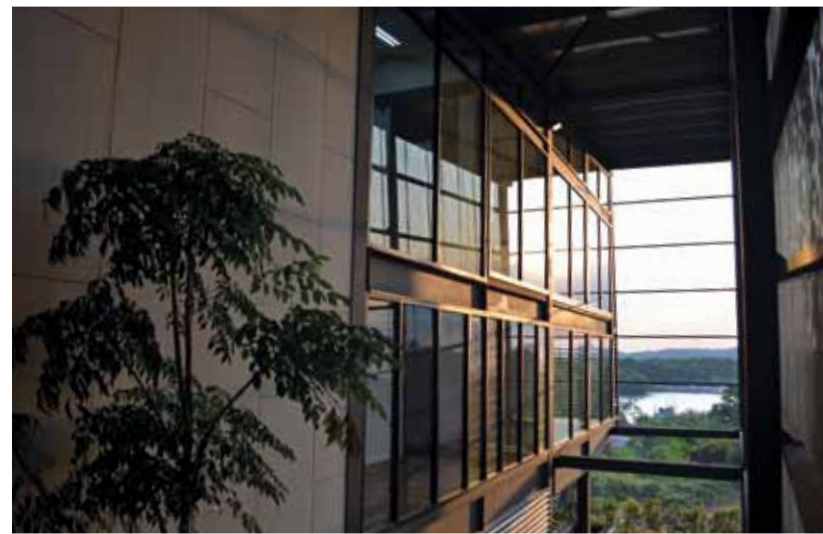
Architect's sketch

This project is the site office for Sunway Group's Southern Region in Johor, located on a high verge overlooking the Causeway with views of Singapore.

The initial brief called for an office building for 150 staff to be designed, constructed and completed within six months. The client's original intention was to house them in modified shipping containers as they wanted the option of reusing the office elsewhere. This method, however, lacked the company's vision for 'Building Synergistic and Sustainable Relationships'. We were then invited to provide a solution, which we approached from three standpoints:

1. The building has to be modular to cater for the





FROM TOP LEFT (CLOCKWISE): The office block with adjacent toilet and amenities block on the right; View from the link bridge towards the Causeway; Bridges that link to the toilet; Side elevation of the building at night

The highest three-storey end of the building



- fast-track construction programme, allowing for some pre-fabrication and construction to take place off-site.
2. It has to make use of appropriate building technologies so that large portions of it can be reconstructed elsewhere, in keeping with the client's commitment to sustainable development.
 3. The building should benefit from passive design principles and respond to local climate and site conditions to maximise building users' comfort and health while minimising energy use.

The following are some of the salient features of the Sunway Southern Region Office:

Modularity

The main frame of the building is designed using a 6m x 6m x 3m module – a size that is chosen for the optimum spans for standard I-Beam sizes and an efficient ceiling height of about 2.9m. Additionally, we wanted to re-create the volume of shipping containers that are typically used to house site staff.

Optimising Location

The long elevation is orientated north-south which also aligns it along the Causeway. One of the client's requests was that the boardroom must be at level +21.00 overlooking the Causeway and the estuary due west. This is about 6m from the natural ground level,

or three modules high. To optimise the potential of the building's location and form, we designed a sky deck look-out for unobstructed views of the surrounding area.

Work and Communal Spaces

The layout plan is devised by dividing the required spaces into 'served' and 'servant' spaces. This then determines the type of finishes and M&E support required, to make full use of available budget and resources.

The resultant building form is a long block that is 12m wide and 60m long, with a sloping roof that rises from the one-storey canteen at the lowest end to the three-storey boardroom at the highest end. The offices are located on two floors separated from the canteen by a courtyard – a feature that brings in natural light and landscape into the building. The toilets and amenities are placed in a two-storey block that is linked to the offices by a series of bridges over a 'street'.

To modulate the boxy-ness of these stacked modules, a large over-sailing roof gives the building its final form. The roof turns down on the north elevation to shield the 'street' with a perforated screen. Rainwater from the roof is collected and stored above the toilet block and used for general cleaning and flushing of toilets.

Appropriate Technology and Demountability

Panelised systems are chosen for their speed of installation and ease of reuse. Long-form corrugated roofing is used for external cladding, while plywood is used for the internal wall lining. The external walls are insulated to minimise sound and heat transfer into the building. The floor between the two levels of offices is built from two layers of marine-ply with batt insulation. In both instances, plywood is chosen because of its structural integ-

rity and relative lightness, and is screw fixed so that they can be easily removed.

Passive Design

The overriding passive design principle influenced many of our design decisions, such as:

1. North-south orientation of the building
2. Demountable structure, walls and floor systems
3. 'Thin' floor plan to optimise natural lighting in the work space
4. Natural ventilated service and circulation areas
5. Insulated walls and roof
6. Operable windows in the work space
7. Collection and reuse of rainwater
8. Sun shading on western facade
9. Plants to minimise surface water run-off and provide shade
10. Semi-permeable driveway and car parking surfaces, etc.

These features contribute to the final outlook and performance of the building, and continue to contribute positively in the operation and the maintenance of the Sunway Southern Region Office. ☺

CLIENT SUNWAY CONSTRUCTION SDN BHD	PROJECT PRINCIPALS Ar WEE HII MIN, Ar LEONG GIAN WEN	BUILT-UP AREA 1,800 SQM	MAIN MATERIALS STEEL STRUCTURAL FRAME, STEEL ROOFING AND WALLING, TIMBER FLOORING, ALUMINIUM FRAMED GLAZING
LOCATION JOHOR BAHRU, JOHOR	PROJECT TEAM JENNY CHOW, MICHAEL VOON	C&S ENGINEER AYL CONSULTING ENGINEERS	PHOTOGRAPHY JENNY CHOW
YEAR COMPLETED DECEMBER 2014	SITE AREA 4 ACRES	M&E ENGINEER SUNWAY CONSTRUCTION	CONTRACTOR SUNWAY CONSTRUCTION
ARCHITECT DESIGN NETWORK ARCHITECTS SDN BHD			

Axometric diagram

