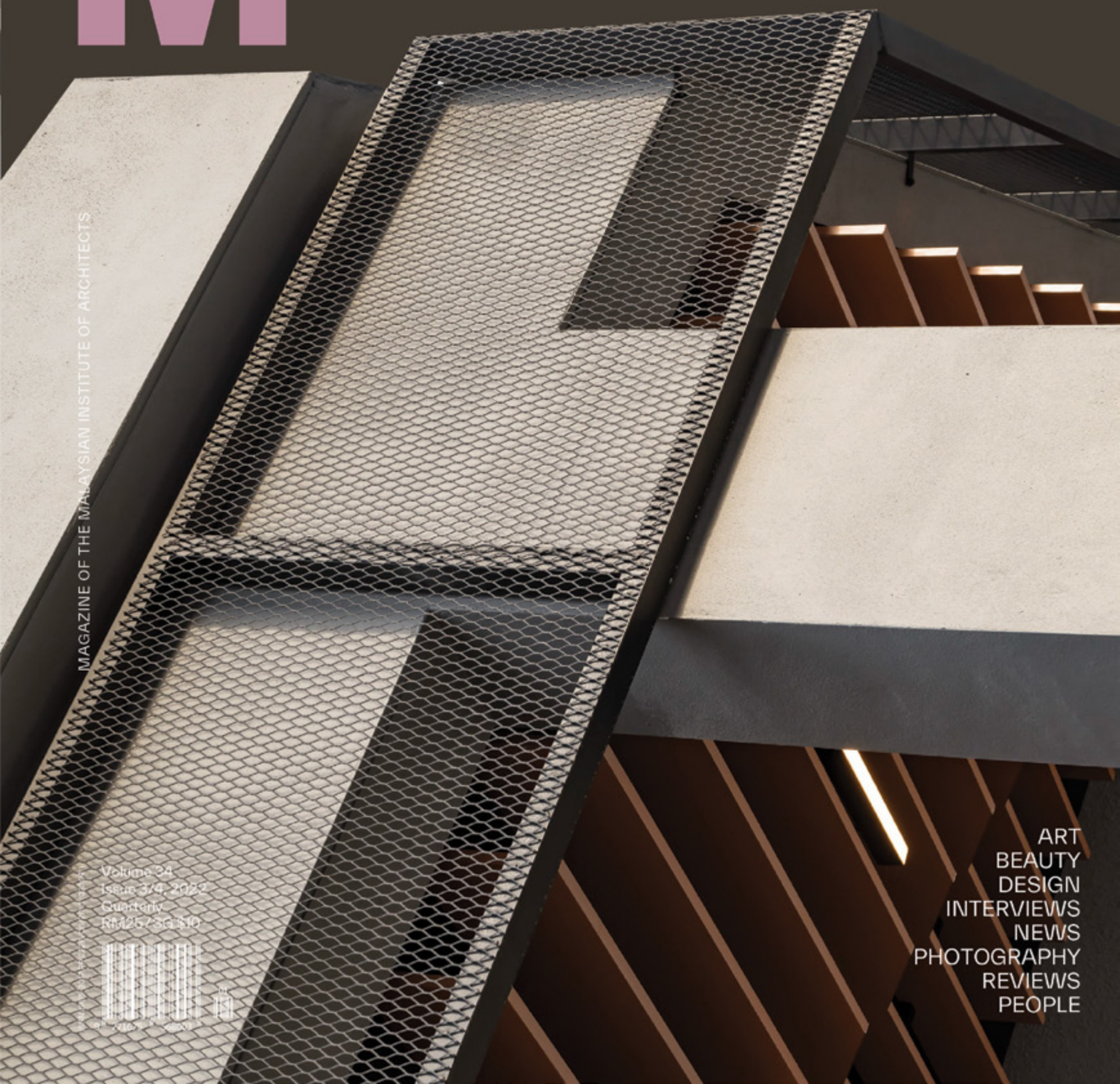
AM

FEATURING
Troika Kota Bharu
Garisan
Residensi 10 Stonor
Novum
Timur Bay
Hydroponic House
Rackson House
Aman Elite
World War II Memorial Peace Park

THE NEWER NORMAL ISSUE



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ART
BEAUTY
DESIGN
INTERVIEWS
NEWS
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REVIEWS
PEOPLE

THE LIVING WALL HOUSE

Utilising passive solutions for a greener and more sustainable residence
Text by the architect

The main entrance

INTRODUCTION

Located in a 1970's neighbourhood in SS3, Petaling Jaya, the project consists of a 2-storey bungalow refurbishment.

DESIGN APPROACH

The Living, Dining and Guest Room of the original bungalow are facing West, which is the hottest part of the façade.

A new 1-storey pavilion with 'Hydroponic Wall' is introduced for new spaces and to screen the western sun from the existing Living and Dining. In creating this pavilion, a Central Courtyard was formed between the new and old to redefine the entrance sequence and as well to refine the character of existing spaces.

Spaces surrounding the courtyards are allowed to spread into it physically and visually by the permeable openings on multiple sides. This creates an 'Integrated Space', which has dual functionality, where each occupant can change the combined space settings and be used for other purposes. An example of this would be the Breakfast Terrace utilised in a social setting in conjunction with the Outdoor Garden, or as an expansion to the Dining Area and Gym.

INNOVATION

The new 22m long and 4m high 'Hydroponics Wall' acts as a buffer between the house and the external. It reduces the solar heat gain from the sun.

The Overall Thermal Transfer Value (OTTV) is only 35 m^2k, which is 30% lower than the national benchmark.

It increases the landscape area by an additional 88m^2, which reduces the heat island effect.

The mist from the irrigation system also increases the relative humidity, hence reducing the microclimate.

SUSTAINABILITY

The following passive design strategies were employed:

1. Window-to-Wall (WWR) ratio of only 18% to minimise solar heat gain through the glazing area.
2. Double walls are introduced on the 1st Floor of the Western Façade to minimise solar heat gain through the wall.
3. The Roof is insulated with a U-value of 0.26 and 0.42 m^2k/W for light and heavyweight roofs respectively, which is 30-35% lower than the national benchmark.
4 Ample natural daylighting is achieved from the central courtyard and 2 linear skylights. In overall spaces, the daylight factor achieved is more than 2%, which is dou ble the minimum threshold.
5. Full height permeable openings at the courtyards induce cross and stack ventilation.
6. A volume of 45m^3 Harvested Rainwater serves as the irrigation for the landscape. It reduces potable water consumption by 50%.
7. A galvanised water tank is designed to absorb solar heat from the sun. The pre-heated water will reduce the energy required to heat the water for showering.
8. Material - most of the building materials have been sourced locally to reduce their Carbon Footprint for transportation. Several materials are selected for their sustainable features such as cork flooring, FSC-certified timber floorings, and low-VOC paints, adhesives and sealants. All furniture fit-outs are formaldehyde-free.
9. Sanitary – Water-efficient sanitary wares and fittings are selected to reduce potable water consumption by 45%

Spaces surrounding the courtyards are allowed to spread into it physically and visually by the permeable openings on multiple sides.

Enclosed outdoor terrace

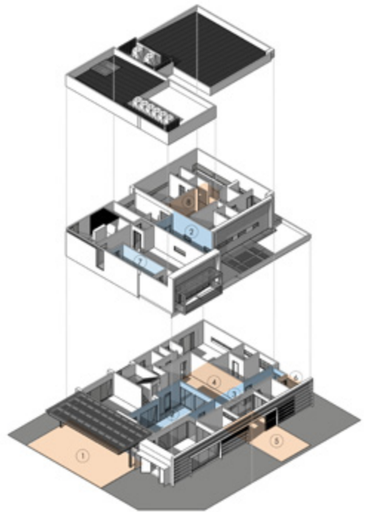
IMPLEMENTATION AND RELEVANCE TO THE COMMUNITY

With an approximate 0.04m² per plant spacing for the 'Hydroponics Wall', it is estimated that the system can generate 2200 numbers of edible plants. The extra harvest has been used as a means for community bonding.

COST EFFICIENCY – REDUCTION OF ENERGY AND WATER

The strategy of using the new 'bypass' pavilion to reorganise the internal space configuration and maintain the existing building has kept demolition works and construction waste to a bare minimum, which were partially re-used as recycled material. Most of the building materials have been sourced locally to reduce the construction cost.

During habitation, the passive design strategies reduced the monthly TNB energy bill to around RM990, which is approximately 50% lower compared to a similar-sized bungalow. The average monthly energy used is only 1,950 kWh and the BEI is only 37 kWh/m²/yr.



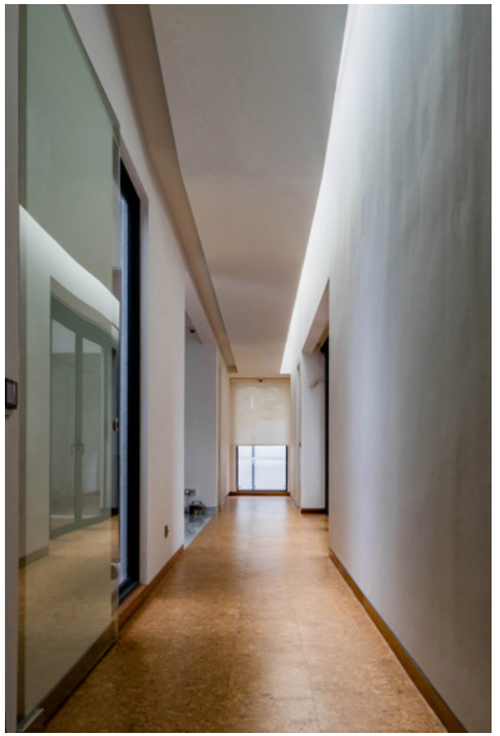
Axono perspective

1. Main Entrance
2. Cental Courtyard
3. Skylight Walkway
4. Dining
5. Breakfast Terrace
6. Powder Room
7. Walk in Wardrobe
8. Family

Hydroponic wall

Dining room

Ample natural daylighting is achieved from the central courtyard and two linear skylights.



Skylight walkway

Car porch

Side façade

LOCATION
No. 1 Jalan SS3/94
Petaling Jaya, 47300

CLIENT
Wee Chong Eng and
Lim Siew Ling

PRINCIPAL USE
For Owner Use

ARCHITECT
CH&I Architecture Sdn Bhd

PROJECT PRINCIPAL
Ar Michael Ching Chee Hoong

PROJECT TEAM MEMBERS
Michael Ching,
Chook Jun Yet,
Steven Tung

DESIGN PERIOD
May 2016 - May 2017

CONSTRUCTION PERIOD
19 July 2017
- 23 December 2019

DATE OF COMPLETION
30 December 2019

SITE AREA
8,545 sq ft

FLOOR AREA
6,772 sq ft

PROJECT COST
RM 1,400,000.00

CONSTRUCTION COMPANY
Idaman Asal Sdn Bhd

CIVIL ENGINEER
Pakatan Cergas Sdn Bhd

M&E ENGINEER
Coburg Consulting Sdn Bhd

QUANTITY SURVEYOR
Perunding Kos Bersatu Sdn Bhd

PHOTOGRAPHER
CH&I Architecture Sdn Bhd

WELCOM-
ING
GESTURE

Residensi 10 Stonor – a soaring interlocking statement in the Kuala Lumpur cityscape
Text by the architects

On the west elevation, units will have a more city-centric view and vistas toward the Petronas Twin Towers.

Located at Persiaran Stonor, Kuala Lumpur, the project brief calls for the development of service residences which focuses on the segment of international residencies and individual/small families. The overall site area of 0.78 acres poses significant challenges in the building design. As the building is 49 storeys tall on a very compact site, there is a strong likelihood to project a typical floor plan upwards, resulting in a very monotonous massing.

The design concept is an abstraction of a pair of clasping hands signifying the traditional gesture of welcome. The interlocking fingers form the corner of this architecture, comprising of intersecting spaces and varying volumes, cantilevering over the building façade. Similar to the varying width of fingers, these cantilevered volumes vary in terms of heights, breaking the monotony of the façades, and resulting in a dynamic building corner that adds visual presence to the main street.

The design concept is an abstraction of a pair of clasping hands signifying the traditional gesture of welcome. The interlocking fingers form the corner of this architecture, comprising of intersecting spaces and varying volumes, cantilevering over the building façade.

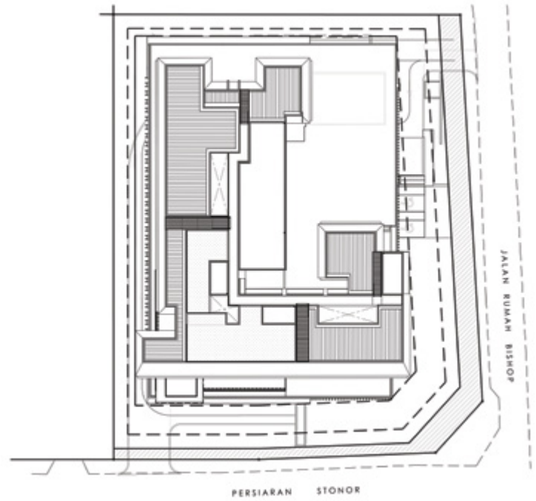
Two main blocks positioned on a fairly rectangular-shaped site create an opportunity for open space along Jalan Rumah Bishop where the main entry point to the development is. Access via this side road is more private and away from the main Persiaran Stonor.

The overall building orientation is set to address the predominant site condition. The Main Building's façade is orientated southward towards Persiaran Stonor for strong visibility and to act as a visual focal point to the neighbourhood. This strategy is also used to avoid views northwards due to the close proximity of the neighbouring high-rises.

This naturally creates the L-shaped building profile, allowing the units at the south elevation to capitalise on the surrounding predominantly low-rise development and views towards The Royal Selangor Golf Club and the Titiwangsa range. On the west elevation, units will have a more city-centric views and vistas toward the Petronas Twin Towers. On the east elevation, a recess is created on the overall massing allowing for the formation of the level 8 open garden that provides a visual connection to the landscape at ground floor level.

The interlocking of the units is created by inverting the Unit Type C internal layouts. This allows the interlocking units to be constructed with a conventional structural system (post and beam) without the need for transfer slab or transfer beams. The balconies created from the extension/protrusion of these interlocking units beyond the general building plane allow the residents to be presented with a 180° external outwards view and a more immersive condition of its surroundings.

The balconies created from the protrusion of this interlocking unit allow the residents to be presented with 180° external outwards view.



Site plan

On the ground level, a commercial component is positioned to address the main public circulation at Persiaran Stonor and adds vibrancy to the overall road stretch. Positioned at the prime corner between Persiaran Stonor and Jalan Rumah Bishop, the commercial component is a distinct public quadrant with open and direct access for the general public, separated from the residential area.

The residential main entrance lobby and concierge are located towards the quieter north part of the site, which is also the main vehicular entrance to the development.

Consideration is made to ensure all back-of-house facilities are not exposed publicly, and that all residential units enjoy optimal views of the surrounding green and the distant city views. On top of the podium segment, an infinity pool stretching the width of the façade also anchors the building as a strong visual reference within the vicinity of the site.

The overall building orientation is set to address the predominant site condition. Avoiding northward views due to close proximity with neighbouring high-rises, the Main Façade is orientated towards Persiaran Stonor (south elevation).

An infinity pool - stretching the width of the façade - anchors the building as a strong visual reference within the vicinity of the site.

On the east elevation, a recess is created on the overall massing allowing for the formation of the level 8 open garden that provides a visual connection to the landscape at ground floor level.

View of the gym overlooking the open garden at Level 8

The residential main entrance lobby and concierge are located towards the quieter north part of the site.

The design concept - a pair of clasping hands - is an attempt to create an interesting junction where the two blocks intersect.

LOCATION
No. 10, Persiaran Stonor, Kuala Lumpur

CLIENT
BSG Property / Katana Developments

ARCHITECT
CH&I Architecture Sdn Bhd in collaboration with Studiogoto

PROJECT PRINCIPAL
Michael Ching Chee Hoong

PROJECT TEAM MEMBERS
Michael Ching, Ho Kam Weng, Intan Rahayu

DESIGN PERIOD
10/12/2014 - 26/01/2017

CONSTRUCTION PERIOD
26/01/2017 - 26/11/2021

DATE OF COMPLETION
26 November 2021

SITE AREA
3,156 sqm

FLOOR AREA
37,796.57 sqm

PROJECT COST
RM173,500,000

Contractor
Ikhmas Jaya Sdn Bhd

CIVIL ENGINEER
Arup Jururunding Sdn Bhd

M&E ENGINEER
BSD Associates Sdn Bhd

QUANTITY SURVEYOR
Perunding Kos Bersatu Sdn Bhd

LIGHTING
Lightcraft

LANDSCAPING
Permata Green Sdn Bhd

Green Building Consultant
Bgreen Consultancy Sdn Bhd

Interior Design
Kokkenhaus Sdn Bhd

PHOTOGRAPHER
CH&I Architecture Sdn Bhd