

WEB EARTH



Photo Credit: Gensler

Huawei Campus, Chengdu

A YEAR IN REVIEW

BY DR. HOSSEIN REZAI, FOUNDING DIRECTOR

Our environmental and sustainability team have been doing fantastic work over the past six years. In this time, the team of LEED and Green Mark, carbon footprint, water resource management, computational fluid dynamics and sustainability professionals have been tasked with over 40 projects. A number of these projects spread across the world have been successfully completed. Many others are still ongoing, while a few were/are competition entries (some of them won and became actual commissions).

Our portfolio covers a diverse genre of projects, ranging from resorts on the edge of Kilimanjaro National Park in Tanzania to high-rise urban mixed developments in Kuala Lumpur, as well as single occupancy zero energy residences in Singapore and major water resource planning for Sentosa Island. It all points to a comprehensive and embracing series of projects, groundbreaking in terms of genre and intensity of environmental contents.

Noteworthy amongst these projects are the educational and health-related ones, which have developed into a field of expertise within the team.

"Our team at Web Earth are meeting the environmental challenges of climate change; tirelessly and one project at a time".



Photo Credit: WOHA

SIT Heart, Singapore



Photo Credit: IJM

Equatorial Plaza, Kuala Lumpur

EDUCATION



Photo Credit: FORUM

NUS Sports Centre, Singapore

NUS Sports Centre in Singapore with Forum Architects is a prominent project. The sports hall has an olympic size pool and is currently slated for Green Mark Platinum after the first round of verifications in February 2018. The design was optimised to capture the prevailing winds and reduce the thermal heat gain in the sports hall which utilises a dual cooling mode.

The new addition to the Singapore Management University (SMU) is another example of our team's continuous effort to push boundaries and be at the forefront of educational design. The project reinforces and enriches physical, as well as programmatic, connections with/within the city. It is designed to meet Zero Energy and Green Mark Platinum certifications.

In Malaysia, a major addition to the University of Technology Petronas with GDP Architects is complete and operational. The project, which includes a number of laboratories and other testing facilities, represents a groundbreaking example of its genre. The project has been awarded Green Building Index (GBI), thanks to the heat recovery wheel which provides pre-cooled fresh air by using exhaust air from the laboratories at every level. This has resulted in a massive 20% energy saving for air-conditioning.

A significant series of projects for the National Bank of Malaysia aimed at enhancing the educational portfolio of the bank, include a collaborative design work between GDP Architects in Malaysia and Moore Ruble Yudell Architects in California. The buildings include the Asia School of Business (ASB) in conjunction with MIT, and the A Centre of Excellence (ACE). Both these projects, in the vicinity of the Bank's existing Sasana Kijang campus, are on site and slated for completion in 2019. These buildings are designed with dynamic chiller and SMART control systems to achieve significantly improved operational energy efficiency .



Photo Credit: MKPL

Tahir Foundation Connexion, Singapore



Photo Credit: GDP Architects

University of Technology, Kuala Lumpur

Alice Smith Secondary School Campus Extension in Kuala Lumpur is another educational campus we are working on with DP Architects. The project is on site and will be completed by the end of the year. The building is designed to optimize the passive design strategies, such as natural ventilation and daylight. Rooftop Solartubes and PV panels are also provided to enhance the daylight penetration at the atrium sports hall and to generate renewable energy, respectively.



Photo Credit: ARCH Daily

Alice Smith Secondary School, Kuala Lumpur

The team is working on two competition-winning projects in Singapore with WOHA Architects. One is the new integrated campus for the Singapore Institute of Technology (SIT), currently at the design stage; and the other is the Punggol Digital District (PDD), at early stages of construction. The PDD is a complex campus which includes an underground MRT station, connecting tunnels, a bus interchange, residential, buildings, offices and learning places integrated into a holistic environment and experience with a heritage trail. Both SIT and PDD have at least one Super Low Energy (SLE) building, while all individual buildings are designed to meet Green Mark Platinum certification.



Photo Credit: WOHA

Punggol Digital District, Singapore

HEALTH

Another competition-winning project is the Khoo Teck Phuat National University Children's Medical Institute Paediatric Ambulatory Centre (KTP-NUCMI) with Forum Architects. The project comprises consultation rooms, therapy units, pharmacy and others. The team won the competition in 2014, and the project is currently progressing on site. Its design focuses on the highest level of indoor environmental quality through green label products, aiming to provide the safest, most hygienic and energy-efficient building possible.

A nursing home in Bukit Batok (Singapore), with MKPL, explores the use of extensive passive design which brings daylight and air into the spaces while keeping out wind-driven rain. This is yet another interesting project currently on site and slated for completion by 2019.



Photo Credit: FORUM

KTP-NUCMI, Singapore

HIGH-RISE

One of our most interesting and complex mixed-use and high-rise projects in KL, Equatorial Plaza with GDP Architects, is almost complete. Our environmental strategy synergizes between the hotel and office towers stretching up to 52 storeys. The development already archived GBI Gold certification. The building is designed to optimize the passive and active design strategies with particular regard to energy (30% saving) and water (50% saving) efficiency.

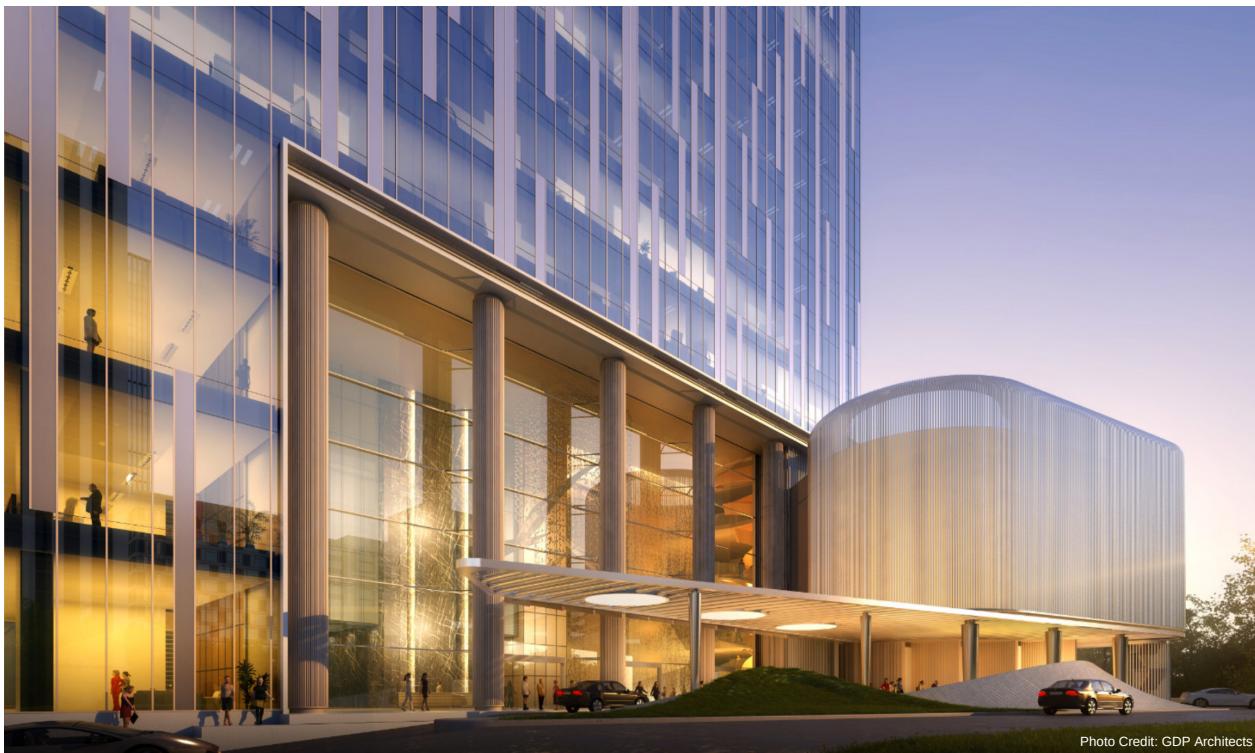


Photo Credit: GDP Architects

Equatorial Plaza, Kuala Lumpur

In Jakarta, the elegant and slender structure of our Arzuria in Tendean is rising above ground. The design is by SCDA Architects in Singapore and the structure by Web Structures. Each residential unit is designed to embrace and optimize passive strategies such as natural ventilation, daylight penetration and solar shading.



Photo Credit: SCDA

Arzuria, Jakarta

WATER RESOURCE MANAGEMENT/ABC WATERS

The groundbreaking Paya Lebar Quarter for Lendlease is rapidly progressing on site with DP Architects. So is the major competition winning scheme for the entire Sentosa Island with Grant Associates and the rest of the team.

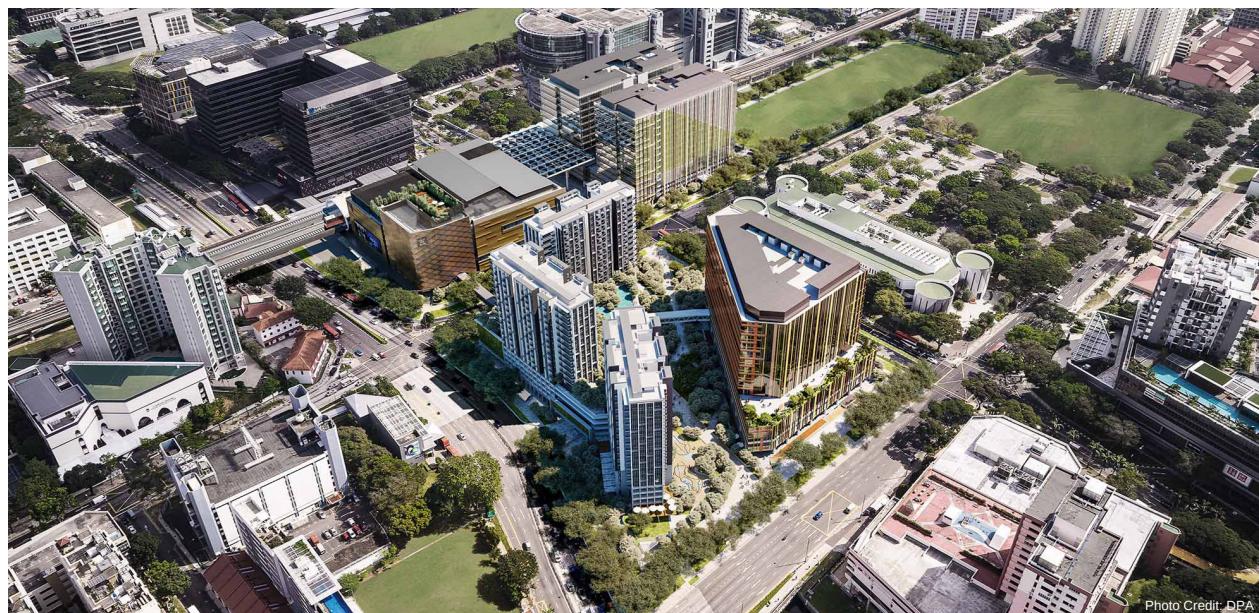


Photo Credit: DPA

Paya Lebar Quarter , Singapore

RESEARCH

Our team have been actively engaged with advanced computational design and analysis of environmental parameters on a showcase house in Batam, Indonesia. Such studies included shading, daylighting and solar heat gain, as well as overhang shape, form and layout. These aspects have been researched in relation to environmental performance of the building.

Our environmental team have also been a contributing body to meaningful research work in collaboration with NUS on Cloudarch and ETH/Future Cities Lab on bamboo fibre development, both through Web Structures. An applied research program is also currently underway on modular design, construction which covers PPVC and DfMA. This is done in collaboration with our Milan Research Lab.



Photo Credit: Eco-Business

Cloud Arch, Singapore