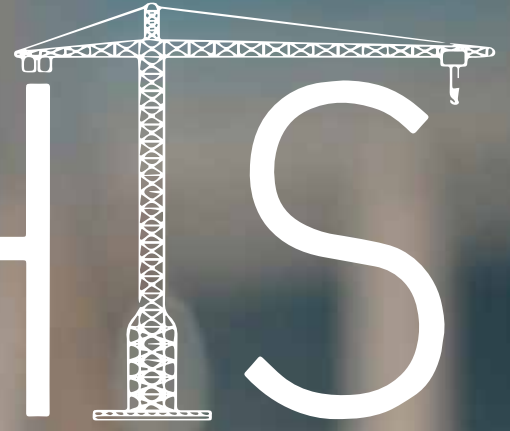


HEIGHTS



CONSTRUCTION FROM A NEW ANGLE

ISSUE 2 • APR - JUN 2019

CIDB'S BIG PLANS AND GAME CHANGERS

Light-Weight and Easy-To-Fit Prefabricated Bathrooms

The Woman Who Moved the Twin Towers

Building a Career as Construction Project Manager

It's Sany Time

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EDITORIAL MESSAGE

The construction industry and the digital age – this is the challenge we face today when we talk about digitalisation of the construction industry. I am proud to say that in Malaysia, digitalisation in the construction industry has started taking shape rapidly. But is it happening fast enough to keep pace with the revolution taking place globally? And what can be done to make the transition as smooth as possible?

What we have learned is that there are no shortcuts. Stakeholders have to swim with the tide, or they may face being irrelevant in this fast-changing industry. Many of our companies have made digitalisation part of their everyday operation and we are happy to share some of their experiences in this issue.

While the focus has been on BIM and IBS, we realise that the construction digital evolution has also moved to other areas such as automation and robotics, and even looking to the next frontier – artificial intelligence and Internet of Things. We plan to keep a lookout on these in future issues.

In this publication, readers are given a snapshot of a new rating tool that assesses the extent of sustainability



measures practiced in the Malaysian infrastructure projects. Called Sustainable Infrastar, this tool was launched at the recently concluded International Construction Week (ICW).

There are many other segments in HEIGHTS that are written to share, educate and/or inspire the readers. We hope that you will gain much benefit as you move ahead in creating your impact in the construction industry.

Sr. Sariah Abdul Karib

Senior General Manager - Corporate & Business Sector

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We welcome your contribution, while reserving the right for length and clarity.

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Ready to serve! The CIDB Sarawak Sibu Branch has opened its doors

CIDB Sibu is now open to serve local stakeholders

CIDB Malaysia has opened an office in Sibu to oversee and facilitate the number of new projects being planned in the area.

Minister of Works Tuan Baru Bian launched the new office on March 23. Also present was CIDB Malaysia Chief Executive Dato' Ir. Ahmad 'Asri.

"Sibu is not just known for its port and ship building industry. This district is the gateway to the Sarawak Corridor of Renewable Energy (SCORE). It is also a tourist attraction, especially for those who want to visit Sungai Rajang."

"Sibu has the potential to see massive development growth in the future with

so many projects taking place here," said Baru Bian.

Among the projects being undertaken in Sibu include the RM1.7 billion Phase 1 of Pan Borneo Highway (2016), Sibu's biggest mixed development project of 18-storey residential, hotel and commercial building worth RM140 million (2017), RM90 million flood mitigation project Phase 3 (2018) and RM100 million road works project (2019).

The Sibu office will offer services to construction stakeholders who are involved in these projects. Services such as registration process for contractors and building material as well as registration and accreditation of construction personnel can be done quickly and effectively.

At the same time, local construction stakeholders will have the opportunity to seek guidance and advice from CIDB.

As of end February 2019, a total of 96,038 contractors were registered with CIDB, with 8,650 of them from Sarawak.

There are 974 contractors from Sibu.

As for construction personnel, a total of 850,000 personnel were registered nationwide, with 45,000 from Sarawak. Of these, more than 13,000 personnel are from Sibu.

Dato' 'Asri meanwhile urged local agencies to take advantage of the local CIDB office to seek more information on Construction Industry Transformation Programme.

"A strategic cooperation between local agencies and CIDB in implementing CITP initiatives will increase the achievements of construction industry in Sibu," he said.

Apart from a branch in Sibu, CIDB also has branches in Miri and Bintulu in Sarawak, and Tawau and Sandakan in Sabah. There are also 15 state offices nationwide.

The CIDB Sarawak Sibu branch office will be headed by Chuang Kuang Hong, who has 12 years of experience serving the industry with the organisation. ■

A man with dark hair and glasses, wearing a dark pinstriped suit, white shirt, and patterned tie, stands in profile looking out a window. The background shows a building with a grid-like facade. The lighting is warm and directional, coming from the window he is looking out of.

CIDB's Big Plans and Game Changers

*Dato' Ir. Ahmad 'Asri tells
how the Board wants
to achieve its desired
outcome for 2019*

Entering into his third year as Chief Executive (CE) of CIDB Malaysia, Dato' Ir. Ahmad 'Asri Abdul Hamid cuts a confident, exuberant figure as he lays out his office's main agenda for the year and beyond. The driving force behind CIDB's numerous initiatives, Dato' 'Asri has big plans lined up for 2019, targeted to take the government agency to greater heights.

With preparations underway for the Malaysian construction industry's biggest annual event, the International Construction Week (ICW), the man is understandably excited to share details of CIDB's efforts, both in the past and what we can expect in the months coming. "With the new government it's a different buzz altogether but the underlying aims and principles remain the same and we at CIDB are prepared to strive towards ensuring all our initiatives achieve the desired outcome," Dato' 'Asri begins with candour and enthusiasm from his office at the CIDB headquarters.

Quite naturally Dato' 'Asri starts the conversation by talking about the Construction Industry Transformation Programme (CITP), the five-year plan

begun in mid-2016, the same year he was appointed CIDB's CE. CITP is a national agenda to transform the construction industry to be highly productive, environmentally sustainable, with globally competitive players while focused on safety and quality standards. CITP's four strategic thrusts are Quality, Safety and Professionalism, Environmental Sustainability, Productivity and Internationalisation.

In mid 2018, after two and half years of implementation, CITP was put through a gruelling six-months process of a midterm review, and the findings and result had since been presented to and endorsed by the Minister of Works Tuan Baru Bian.

"We have only another two years for CITP to come to an end. So we made a decision to move from strategy mode to implementation mode. In the past we had 21 committees called Initiative Working Groups representing the academics, private and government sectors, where they work together, deliberating on the KPIs and monitoring their implementation.

With their continuous input everything has been crystalised and we are quite firm on moving towards the operation mode in order to achieve the outcome that we want."

“ The CITP midterm review was critical as we need to relook at all of our initiatives to see what is and what is not working. We want to see how we can make more impact on the desired outcome which was spelled out in the CITP blueprint ”

CIDB maintains the four strategic thrusts with a minor change in that the Internationalisation thrust now has an additional word - competitiveness - to emphasise the importance of competitiveness in competing for projects with international players be it locally or in other countries. The 21 initiatives of the CITP are also retained but the KPIs have been reduced from 115 to just 36. This cutting down was the result of the review when it was realised



The only way to go is up while observing all aspects of CITP

that some of the original KPIs were actually action plans or activities. The focus now is working on KPIs which are outcome based, says Dato' 'Asri .

As for the governance structure of CITP, the 21 Initiative Working Groups (IWG) are now replaced with just four sponsor working groups chaired by CIDB's four senior General Managers. The SGMs are tasked to monitor all 36 KPIs and report to the ministerial committee chaired by the Minister of Works.

“ CIDB had streamlined all KPIs to create a sharper focus on the goal of closing the gaps between KPIs and the actual outcomes envisioned by the CITP. ”

"The CITP midterm review was critical as we need to relook at all of our initiatives to see what is and what is not working. We want to see how we can make more impact on the desired

outcome which was spelled out in the CITP blueprint," he explains.

Even though the strategic thrust of CITP remain the same, CIDB had streamlined all KPIs to create a sharper focus on the goal of closing the gaps between KPIs and the actual outcomes envisioned by the CITP. CIDB continues to develop programmes and platforms for the benefit of the industry as a whole, as well as engage with all stakeholders to ensure that the intended outcomes of the CITP are achieved by 2020.

With the sharpened and refocused KPIs announced after the midterm review of CITP, 2019 is set to be a busy year for CIDB.

Dato 'Asri beams as he goes through exciting initiatives that CIDB has in store for 2019. He started with safety first (*pun intended*). One of the most exciting developments in CITP is the proposed introduction of the Occupational Safety and Health in Construction Management (OSHM),

which will be presented by the Department of Occupational Safety and Health (DOSH) to the Cabinet soon. OSHIM is a set of guidelines modelled after the UK's Construction Design Management (CDM).

"To me, OSHIM is a game changer as far as safety in construction is concerned, especially when it is enforced as an Act. Currently when there's an accident at site everybody goes after the contractor who then passes the buck to the safety and health officers or site safety supervisors who will usually be blamed for any safety mishaps. In actual fact, the parties who should be responsible are clients and developers who must be able to allocate enough funds for safety and make it a requirement," he says.

"Safety should be incorporated from the very beginning of the project planning. Consultants must design projects taking safety into consideration. Only then will safety be enhanced. So the good thing about OSHIM is the responsibility now will be borne equally

“To me, OSHIM is a game changer as far as safety in construction is concerned especially when it is enforced as an Act.”

by the clients, developers, consultants and contractors. Effectively this will also eliminate the problem of contractors overlooking the safety aspect in order to cut cost and secure projects.”

Another step forward is the Quality Assessment System in Construction (QLASSIC), which has now been approved by the Ministry of Housing and Local Government, making its adoption mandatory for all housing projects under its ministry. CIDB reacts very positively to this move since the government is targeting to build 100,000 houses per year, most of which will come under its ministry. This, in turn, brings great benefit to the public who can now expect quality assured affordable accommodation.

In terms of integrity, the government has introduced the Anti-Bribery Management System (ABSM), which is designed to implement a series of measures to help prevent, detect and address bribery. Once it becomes mandatory the management will be held responsible and the onus will be on them to demonstrate that all necessary measures have been undertaken to prevent corruption. The most effective way to monitor this is by adopting the integrity principles and procedures of ABMS.

When it comes to sustainability, CIDB has taken a bold step. Progressing from MyCREST, an assessment for sustainability that can only be used for the construction of buildings, CIDB now introduces INFRASTAR. “This is a new rating tool that has a much wider scope

including roads, highways, airports, bridges, dams, ports, just about any construction. CIDB developed this sustainable infrastructure rating tool to be adopted in Malaysia at both the design and construction stages,” says Dato’ Asri, adding that there will be a lot of training and promotion of INFRASTAR and that CIDB hopes the government makes INFRASTAR mandatory for projects worth more than RM100 million.



The CE is also happy to announce that the Industrialised Building System (IBS) method of construction is moving very fast in Malaysia, with many industry players having already adopted the system. IBS is not just mandatory for all government projects but also for private sector projects exceeding RM50 million.

Dato’ Asri was appointed CIDB’s CE in 2016, after years of service to the agency in various capacities. The trained Mechanical Engineer, the only first class graduate of the entire engineering faculty on the year he

graduated from the University of Adelaide where he studied from matriculation right up to his degree as a JPA scholar, started his career with the Public Works Department (JKR) before joining CIDB. Along with more than three decades in the public service Dato’ Asri has also held the position of President of the Professional Services Development Corporation (PSDC) for three years, where he was responsible for developing the capability and

“INFRASTAR is a new rating tool that has a much wider scope including roads, highways, airports, bridges, dams, ports, just about any construction. CIDB developed this sustainable infrastructure rating tool to be adopted in Malaysia at both the design and construction stages.”



Dato’ Asri explaining CIDB’s plans to its stakeholders



Technology must be embraced, and quickly, said Dato' Asri

“ We want to expose our people to that scenario which is why we are working on the road map. CIDB is also working on the Big Data agenda. We now have a system called CONVINCENCE that integrates 15 data into one including that of contractors, projects, consultants, costs - everything related to construction. ”

capacity of the professional services sector in facing with the challenges of liberalisation.

“I love Add Maths and Physics and used to ace all my exams from school right up to university,” smiles the diminutive gentleman, recollecting his younger days as a bright-eyed brilliant scholar with the world at his feet. In fact, he was offered a well-paying opportunity by a leading international company

which had earmarked him even before he graduated but had to turn it down to take up the government position. There is perhaps a pinch of disappointment at how life might have turned out, but Dato' Asri is not one to lament on lost opportunities. He laughs characteristically, “Well, it's got me to the CE's position today, so I must say life's been good.”

As CITP will formally come to a close in 2020, CIDB is preparing itself for the next phase of transformation - Digitisation of the Construction Industry. CIDB is in the midst of developing the IR 4.0 Construction Roadmap, which is expected to be completed by the year-end. “The roadmap is on how we want to look at digitalising our construction industry. We will be highlighting ways to work towards this and one of the biggest strategies is to strongly promote the use of Building Industry Modelling (BIM).”

Dato' Asri admits that BIM faces two major challenges. Firstly, the software is quite costly and secondly, there aren't enough BIM-competent people. To

address the problems CIDB has opened MyBIM Centre offering very highly subsidised training programmes “to flood the market with BIM competent people”. There is also a scheme to assist smaller contractors so they can either buy or use the BIM software on a pay-per-use basis.

When asked whether he thinks the Malaysian construction industry will adapt and embrace the state-of-the-art technology, Dato' Asri pauses for a wink before saying: “It's true that the technologies used in construction around the world are getting increasingly sophisticated. China for instance even uses its own BIM which is not what the rest of the world is using! Robots and big data have functions in the industry now. We want to expose our people to that scenario which is why we are working on the road map. CIDB is also working on the Big Data agenda. We now have a system called CONVINCENCE that integrates 15 data into one including that of contractors, projects, consultants, costs - everything related to construction.”

With the completion of one major event, ICW 2019, the year is off to a good start! And by looking at the tight deadlines set for CITP achievements throughout the year, it doesn't look like the man, nor the organisation he leads, are showing any signs of slowing down. ■



The Malaysian construction industry shapes up faster with IBS



Photo Credit: Nikkei Asian Review

Japan Sets Up Industry Watchdog to Keep Foreign Workers Safe

Japan is setting up a supervisory body to protect foreign workers in the country from being underpaid and mistreated by employers.

Japan's main construction bodies will have representation in the body, and companies hoping to hire foreign workers must cooperate with it. The body will also cooperate with foreign educational institutions to train workers and conduct exams regarding technical terms and Japanese culture.

Foreign workers taking part in the programme will receive IC cards that will help to manage data about their careers, experience and construction-machinery certifications. This data will be important because workers with more experience and certifications will qualify for higher-paying jobs.

A new law will also take effect in April to ease the hiring of workers from abroad.

Source: asia.nikkei.com



South Korea Eyes Asean Port Projects

South Korea has decided to beef up its presence in Asean as the domestic construction industry is struggling and shows no sign of reviving, reports The Diplomat.

As a start, South Korea will be joining hands with Laos to support the development of a dry port in the land-locked communist country.

Under the memorandum of understanding (MOU) signed on February 15, the two countries agreed to jointly implement port development cooperation projects and exchange human resources such as port experts.

This MOU is another step forward in South Korea's current support for port cooperation projects, including the establishment of a national logistics transport system and the feasibility study of dry ports.

In August last year, the South Korean government also began to establish basic plans for 34 ports nationwide in Vietnam, and, in October, it also signed a MOU on the cooperation of port development between the two countries.

With that MOU, South Korea pledged to help Vietnam to study the function of ports by region, direction, and timing of development as well as the design of the port infrastructure.

Such moves came after South Korea's participation in Asean Maritime Transport Working Group Meeting held in August 2018.

Source: www.thediplomat.com

Going Modular with Prefabricated Bathroom



Modern and sophisticated ready-to-use, prefabricated bathrooms

Eastern Pretech Embraces the Next Phase of IBS

In a corner of a sprawling open space on the 10th floor of an office building some 40 minutes south of Kuala Lumpur, a group of young people can be seen hard at work on their latest computers. These are not geeks or hackers. They are today's construction workers.

"This is where our in-house design and engineering department carries out detailed design, research and development work. Everything we do has to be very precise," said Matti Mikkola, the CEO of Eastern Pretech (Malaysia) Sdn Bhd, a company which provides a precast concrete system that "simplifies construction methodologies". Essentially, Eastern Pretech takes construction activities away from the construction site to the air-conditioned rooms where Industrialised Building System (IBS) components are designed for various construction projects.

Looking ahead, apart from producing precast concrete components and precast products for infrastructure, Eastern Pretech is moving into making prefabricated bathroom units. Toilets and bathrooms are the most labour-intensive operations when it concerns

"It's a box containing a whole bathroom and you shift it to the site. You either shift it into the building from the side or lift it in from the top. We do not use fibreglass like the Japanese and Chinese systems so the walls do not feel like plastic."

quality finishes and accessories installation. Good standards and high-quality workmanship are crucial in the construction of toilets and bathrooms to avoid maintenance and water-tightness problems. Building bathrooms using conventional method is a painstaking process. It is the dirty wet work that involves many subcontractors working in a constrained environment.

"Our prefabricated bathrooms are simplified ready-to-use units. We produce them lightweight thus they can be easily lifted and fitted. There won't be any waste," said Eastern Pretech's senior manager Zainuddin Aspar during a visit to the company's factory in Beranang where these bathrooms are manufactured. About 370 staff from the company's Beranang factory and more than 70 from its Sungai Petani factory report to Zainuddin who has been with the company for 24 years. The company has another factory with 400 workers in Johor.

"It's a box containing a whole bathroom and you shift it to the site. You either shift it into the building from the side or lift it in from the top. We do not use fibreglass like the Japanese and Chinese systems so the walls do not feel like plastic. In fact, with our units you will not know



Each and every component produced are bar coded for easy identification

that it was prefabricated at all. We use a dryboard system, which simplifies renovation work. Whoever has done any interior walls would know how to work with dryboard walls and in future if you want to change your interior walls, you can," added Zainuddin.

Mikkola chipped in to say that the company was one of the biggest in producing prefabricated bathrooms in Europe. "Having done quite a bit of work in Singapore, we are only now starting in Malaysia. Earlier we took a respite from the business when it started becoming too competitive but we are now coming out with a slightly modified system. It is something we are introducing into the Malaysian market very soon."

"Any builder would tell you that the biggest cost and time-consuming component of a building are the bathrooms", said Mikkola. So the preassembled bathrooms allow for good savings for both these variables. On a side note, Eastern Pretech is a Malaysian company, where Mikkola and one other employee are the only expatriates. The rest are Malaysians.

In Malaysia since 1989, the company adopts Building Information Modelling (BIM) which allows them to explore a project's key physical and functional

digitally, before it is built. They have also been instrumental in the implementation of IBS locally. "These new technologies are now moving the construction industry forward, especially the BIM. If you look at our design department, we have more than 40 people doing design work on their computers. Wherever possible, everything is done in 3D," he explained.

He went on to say that by adopting technology, the process of construction becomes faster, but not necessarily any cheaper. "The process of engineering, manufacturing and installation, for instance, are a lot faster and sometimes it's cheaper but often times it is not the case. The fact, however, you save cost as the building can be done in half the time. In terms of precasting the main benefits are the speed and the ease of doing things and a higher build quality," he added.

Last year the company completed the precast components used for the construction of Ikea's flagship outlet in Penang. "At Ikea Penang, we had no more than 60 to 70 people on site at any one point. We managed the approximately 800,000 square feet structure in six months, which would have been impossible with the conventional system."

"Any builder would tell you that the biggest cost and time-consuming component of a building are the bathrooms"

Nevertheless, there are challenges too as every precast component needs to be exact and precise just like building a Lego structure, or fitting a jigsaw puzzle. "Every single component we make is separately designed with individual drawings. So, if we are rolling out 200-300 components a day that means there are 200-300 separate drawings for each component, pertaining to its shape, size, reinforcement bars, dimensions and layout. The major challenge is that it has to be accurate. We call it tolerance level."

He added that the tolerance level for the tunnel segments and railway sleepers they are currently doing for MRT2 is only 1-2 mm whereas for a typical building, the tolerances are less stringent as it depends on the specifications. It can be between 5 mm to 10 mm.

"The tolerance is not by a few inches but by millimetres, otherwise they don't fit it. We design them in 3D on our screens to ensure perfect fit. Precision and accuracy are very important. Sometimes the connections are so congested and tight." ■



Senior Manager Zainuddin Aspar and CEO Matti Mikkola



The making of a prefabricated component



More Public Infrastructure Spending Expected in China in 2019

China's construction industry strengthened in the latter stages of 2018 and more public infrastructure spending is expected in 2019.

However, a return to the boom years of double-digit growth in construction is not anticipated anytime soon, with GlobalData expecting the industry's expansion to remain on a general slowing trend.

Construction activity in China expanded by 6.1% year-on-year in the fourth quarter of 2018, pulling up growth for the year as a whole to 4.5%.

Although this was a marginal improvement on the 2017 figure, the pace of expansion in 2018 was still relatively sluggish for the industry as a whole, bearing in mind that over the preceding 10 years China's construction industry expanded at an annual rate of 11%.

Reflecting the weak performance in the buildings sector, total floor space of buildings completed dropped by 1.3% in 2018 compared to the previous year's total.

The heady days of double-digit growth in China's construction industry have long gone, with the authorities taking steps in recent years to rein in excessive debt-driven investment in infrastructure and urban development that had resulted in excess capacity in infrastructure and industry, and oversupply in real estate.

Source: www.designbuild-network.com



Norway to have Ocean-inspired Theme for Expo 2020 Dubai

Norway's pavilion for the Expo 2020 Dubai will showcase an oceanic theme to portray Norway as a leading ocean nation which presents sustainable technologies and solutions to an international audience.

The pavilion will be designed by a consortium of the country's designers Rintala Eggertsson Architects, Expomobilia and Five Currents. Its design and content will effectively convey the theme and contribute to further strengthening the perception of the importance of a sustainable use and development of the ocean.

"Norway has large and important ocean industries, such as oil and gas, seafood and maritime sector and the government's goal is for Norway to be a leading ocean nation," said Torbjørn Røe Isaksen, Minister of Trade and Industry of Norway.

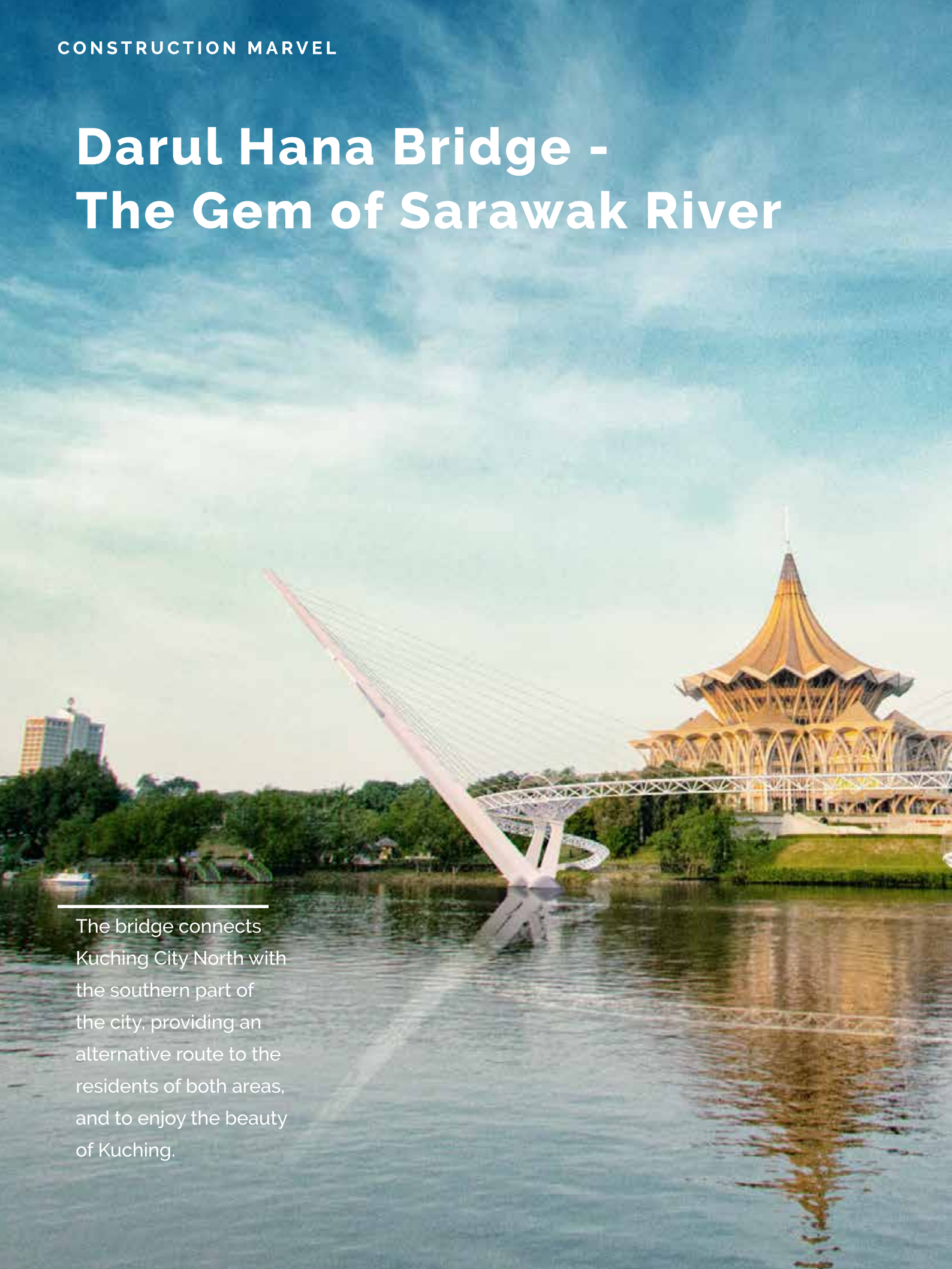
"We therefore need to take an international leadership role on important ocean issues and be at the arenas where solutions to the world's challenges are discussed. Expo 2020 will be such an arena."

He also said the core exhibition will consist of 680 sqm interactive space that is designed to be playful, educative and interesting as well as highlight the country's position with ocean issues. There will also be thematic days and weeks highlighting and discussing important issues related to sustainable use and development of the ocean.

Source: meconstructionnews.com

Darul Hana Bridge - The Gem of Sarawak River

The bridge connects Kuching City North with the southern part of the city, providing an alternative route to the residents of both areas, and to enjoy the beauty of Kuching.







The Darul Hana bridge connects the Kuching Waterfront in the south of the city to the Botanical and Orchid Gardens in the north

This unique 336-metre S-shaped pedestrian bridge measures 3.25m in width and looms 12 meters above the water. It is supported by seven stayed cables at both sides that are 45 metres high from two 48-degree outward angled steel towers topped out with stylised hornbills, denoting the emblem of Sarawak. An S-shaped, curved bridge with two masts, inclined in opposite directions, symbolises the balance of cultures living together.

The S-shaped structural design was inspired by the meandering rivers of Sarawak. The walkway would appear being held by a web of angled wires reminiscing the arched wings of a traditional Bidayuh bamboo bridge. The bridge stands as a homage to its name derived from Sarawak's full

name under the Brunei Sultanate, Sarawak Darul Hana, which means 'Home to Peace and Tranquillity'.

Two viewing decks, both measuring 30m by 10m and located on each pier, allow pedestrians to stop and enjoy the panoramic views of the city and traditional Malay villages nearby, including enabling them to enjoy closer views of the Astana and the Sarawak State Legislative.

- **Designer and Lead Consultant:** KTA (Sarawak) Sdn Bhd
- **Client:** Sarawak Economic Development Corporation
- **Turnkey Contractor:**
 - PPES Works (Sarawak) Sdn Bhd
 - NAIM Land Sdn Bhd JV



The pedestrian bridge provides passage for river vessels to pass through

Design and Form

Designed with aesthetics and ergonomic considerations, the bridge is an S-shaped 3.25-metre-wide walkway that meanders 335 metres over the Sarawak River. Its curved plan allows a comfortable walkway gradient that is suitable for access by disabled persons, while still providing sufficient clearance for river vessels to pass beneath it. It also orients the bridge towards particularly attractive surrounding viewpoints.

Inclined concrete columns branching from the base of each tower support elliptical egg-shaped viewing platforms. Each platform is 30 metres long by 10 metres wide and covered with a golden roof to match the roof of the nearby DUN.

Nine inclined concrete 'fingers' support the sharply curved approach span at the Waterfront end of the bridge. The number of 'fingers' correspond to the number of points on the star at the centre of the state flag.



The bridge's steel spaceframe is suspended from two 50-metre-high steel towers that are angled steeply away from each other

Construction

The bridge comprises two towers, a network of double-galvanised cables and a precast concrete walkway deck. The project team have worked with a number of specialists to develop the construction methodology system.

The load-bearing structure consists of a curved, one-side supported steel tube truss superstructure with two outwards inclined steel masts. The bridge was erected using the segmental balanced cantilever method and built on three in-river piers with bored pile foundations. Each segment of the

steel truss is four metres. The connection of last steel truss segment of the bridge deck was lifted in place on 16th June 2017. The bridge was officially declared open by the Governor of Sarawak on 11th November 2017.

Despite the site constraints and technical challenges, an efficient project execution plan and successful collaborations among various stakeholders helped to minimise construction risks involved in working on the Sarawak River.



Significance

The bridge's steel spaceframe is suspended from two 45 metres high steel towers that are angled steeply away from each other. Even though the towers pull in opposite directions, by carefully fine-tuning the walkway curvature and tower inclinations, the designers were able to balance all forces and keep all elements in harmony. This symbolises the state leaders' efforts to bring balance and harmony in a multiracial and multicultural society. ■



The bridge form was developed in Kuching by Ng Chun Chien and Kamal Fozdar using cutting-edge 3D-modelling (RHINO) and structural analysis software (SAP2000)



Building a Career as Construction Project Manager

From humble beginnings as a construction project manager to now supervising Mega Jati Consult Sdn Bhd, a mechanical & electrical consultant company as one of its directors, Dr. Muhammad Arkam Che Munaaim has made it with passion, focus and grit.

Perlis-born Dr. Arkam has two decades of experience managing construction projects and has been a part of wide-ranging construction projects - high-rise commercial and industrial buildings, highways, expressways, schools, and hospitals to solar power plants.

Friendly with a welcoming smile when met in his office, Arkam shared with HEIGHTS his inspiring back story as a construction project manager.

"Construction project managers are responsible for planning, budgeting, coordinating and supervising construction projects from initial development to completion. This job is crucial as it ensures construction projects regardless of size are monitored extensively from the beginning to the end. The construction project manager has the ultimate responsibility for overseeing all aspects of the project in hand until it is delivered," explained Arkam.

“ One of the main misconceptions pertaining to this job is that people generally assume that construction project managers and project managers are the same. It is actually a misnomer as they have similar but different job scopes. ”

The young man who started off as a resident engineer upon obtaining his degree in electrical engineering from UTM, went on to acknowledge that while hands-on experience and skills are important requirements to master any craft, without the required knowledge it is difficult to chart a clear direction in any career path.

Having obtained his practicing license from the Board of Engineers Malaysia, Akram was attached to a construction company and was specifically involved in testing electrical installation in construction projects. At the same time while gaining work experience he also diligently pursued higher academic qualifications, completing his Masters in Building Technology and PhD in Energy Conservation from USM.

“ A construction manager plays the intermediary role between his clients and construction workers, between the stakeholders and builders, and is required to deal with various parties such as architects, project management team members, authorities, subcontractors, third parties, service providers and even local residents ”

“One of the main misconceptions pertaining to this job is that people generally assume that construction project managers and project managers are the same. It is actually a misnomer as they have similar but different job scopes. For instance, project managers are usually office based whereas construction project managers are stationed at construction sites,” Arkam clarified.

There are about 179 construction project managers registered with the Construction Industry Development Board Malaysia (CIDB). Remuneration is heavily dependent upon company size and the scale of the project. A beginner in this field could earn between RM3,000-4,000 a month, while an experienced construction project manager could earn up to RM20,000 a month.

A construction project manager oversees every aspect of the construction process of a project and each project has a complete life cycle starting from the pre-construction to the construction phases, and finally the post-construction.

It can be a rewarding career but it clearly comes with a heavy responsibility since a construction project manager has to monitor every development in the construction process. “Although the fundamentals are the same, the project cycle for the construction of a school, for instance, will be different in certain

“ Construction project managers are responsible for planning, budgeting, coordinating and supervising construction projects from initial development to completion. This job is crucial as it ensures construction projects regardless of the scale are monitored extensively from the beginning to the end ”

aspects from the project cycle for the construction of a hospital. Therefore, as a construction project manager, it's important to attain extensive experience by being a part of various types of construction projects. Every project that I have undertaken has given me valuable insights to understand every facet of this job.”



Arkam has managed several solar power plant projects in the country.



Arkam discusses details of a project with his staff

Arkam listed the variety of projects that have given him a range of exposure. "Diversity in experience certainly adds value to your career and will help to broaden your horizon," said Arkam who recently completed the installation of streetlights and traffic lights at the Penang Batu Maung Expressway project. He is currently working on various construction projects, namely the Kluang Sports Complex and Penang Tasek Gelugor Primary School.

"A construction manager plays the intermediary role between his clients and construction workers, between the stakeholders and builders, and is required to deal with various parties such as architects, project management team members, authorities, subcontractors, third parties, service providers and even local residents," explained Arkam. It is clear that construction project managers need to be good communicators in order to coordinate the workload, to ensure all work meets expected standard, quality, time-line and budget. They are also expected to maintain



A ready steel dome for the surau in the Advanced Technology Training Centre project in 2008

good interpersonal relationships with everyone as construction work involves dealing with large groups of people. This can be challenging as it is the duty of a construction project manager to work towards achieving agreement in taking any decision regarding the construction process in case of any discrepancy.

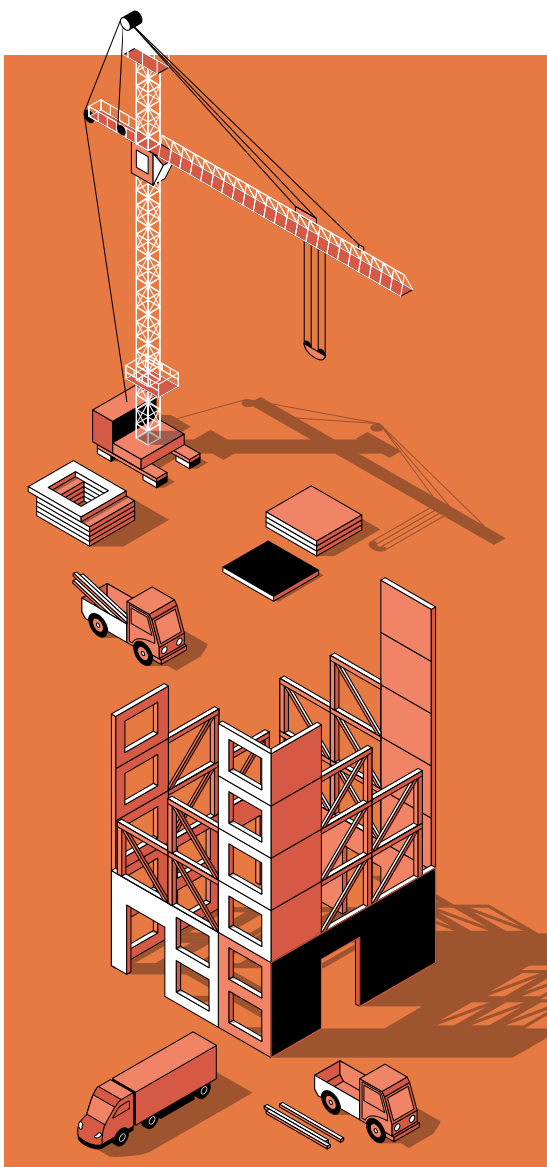
"For instance, if there is a dispute between the drawings of an architect and the civil engineer, this could cause a problem to the building contractors. It's important to identify errors and clarify any miscommunication to ensure work progresses smoothly. You cannot let your ego drive your actions at work as it's very important to work towards

achieving consensus and collaborate together as a team."

Challenges present within the purview of this job include meeting deadlines, dealing with legal issues, lack of funding as well as risk management and mitigation. "One of the significant lessons I have learnt as a construction project manager is to ensure that the construction projects are scheduled well and are delivered on time to clients. Any delay could cause your company's reputation and if it is a government project, you must comply with the Commercial Operating Date (COD) to prevent the issuance of demerit points that will cast a black mark on your track record."

Construction projects are exposed to various unpredictable risks. An experienced construction project manager should be able to see the big picture and identify the risks beforehand. It is the job of the construction project manager to work with a special risk assessment team for a risk response plan to reduce its impact.

"Anyone interested in pursuing a career as a construction project manager has to bear in mind that this job requires a high level of dedication, passion and determination. One must be a perpetual learner and a visionary by always looking forward towards what's on the rise in the industry," shared Arkam on a concluding note. ■



Pathway to become a construction project manager

Academic requirements: Diploma/degree in Engineering, Construction, Architecture, Quantity Surveying or Project Management, followed by several years of work experience in construction projects.

There are three routes to become a Certified Construction Project Manager (CCPM) under CIDB Malaysia.

Route 1
Attend 20-day classes and sit for assessment at end of every class.

Route 2
Written assessment - attempt 120 questions in 3 hours.

Route 3
Professional interview - assessment on experience and knowledge in project management.

In addition to qualification, project management practitioners have to clearly demonstrate experience, knowledge, skill and competency to attain CCPM.

No diploma or degree but have significant on-site experience? You still have an opportunity. Go through one of the three available routes under CIDB. ■

What's Next in Construction... From People Who Matter



David Bian Cheng Wei, Senior Manager, China State Construction Overseas Development Company Ltd., speaking at ICW2019

"The construction industry is seeing the benefits of BIM in construction and is using it to improve their processes. BIM is a process for creating and managing all the data about a project. Building information models contain digital descriptions for every aspect of the physical project. BIM enables projects to be built virtually before they are built physically, eliminating many of the inefficiencies and problems that arise during the construction process.

Benefits of BIM in construction include better collaboration and communication, model-based cost estimation, preconstruction project visualisation, improved coordination and clash detection, reduced cost and mitigated risk, improved scheduling or sequencing, increased productivity and prefabrication, safer construction sites, better builds, stronger facility management and building handover.



Cheong Jin Xi, CEO of Poladrone Solutions, a Cyberjaya-based company that specialises in empowering heavy industries through drone-powered technology, speaking at ICW2019

"The construction industry is slow to accept the fact that drones can make major changes and simplify their business. Generally, mid-level workers are open to the idea of drone usage but when the matter goes up to the management level, they would reject the idea. This is possibly due to the idea of introducing change through technology, which not many people wish to adopt. Drones provide safety at high-rise construction sites. It can enhance safety and also save cost and time. What takes a construction worker two days to achieve, the drone can complete the task in 20 minutes. If the construction site is vast, the drones can cover the distance much faster. It can gather data with time sync. The thermal imaging can actually detect cracks on external walls and is a much safer measure compared to a worker on a scaffolding. Drones can also capture pictures and this allows for a systematic scrutiny of the work progress."



Amarjit Chhina, CCO of MRCB, speaking at ICW 2019

"The existing Industrialised Building System (IBS) that is being implemented across the construction industry is an effective technique but as technology advances, there will be a need for more sophisticated systems to cater for the demands of buyers based on the latest developments. Likewise, the MRCB Building System (MBS) is with all the latest features of automation and is designed to create buildings quicker than ever without compromising on the overall project quality and efficiency. We can now complete construction projects within unimaginable time frames with lower cost, lesser material wastage and dependence on manpower. This system is definitely a major breakthrough and it will revolutionise the landscape of the construction industry in Malaysia. Overall, the MBS system is more efficient, faster and safer as it reduces risks and ensures safety on site. It is definitely the way forward for the construction industry."



Matti Mikkola, CEO of Eastern Pretech (Malaysia) Sdn Bhd, speaking to HEIGHTS

The trend is to build high, and this is because of land price. At the moment, the technology is there to do low rise in terms of these volumetric units. This is not really a big challenge. We were part of several projects in the Middle East where we were doing these volumetric units for low-rise buildings. They were concrete boxes and all the internal stuff. So you just assemble many of those to form them.

You can do bungalows, student housing, dormitory or staff housing. The technology for this is already available. The difficulty right now is doing high rises. I mean how do you stack all those boxes on top of each other and be able to take all that weight? It's very tough. But I think these can be solved quite quickly."



Chang Bar Kuei, Director of SANY Construction Industry Development, speaking to HEIGHTS

"You can have technology, material and machinery but without properly trained, efficient manpower it is impossible for the absolute best outcome. Currently, the TVET programme here is fragmented since there's overlapping of responsibilities between different government bodies, but the present government has been supportive in bringing about positive change into TVET. Since TVET involves many ministries, it could take a bit of time but we will certainly benefit with a clearer direction to know where we are headed. With that in order, I'm certain Malaysia would catch up with the tide of upgrading."



Lilian Tay, Director of Veritas Architects and President of Pertubuhan Akitek Malaysia, speaking at ICW2019

"Augmented/Virtual Reality (AR/VR) is still a very early technology, which is currently being used as a communication tool, rather than a design tool. It's really used for the benefit of the client. Although architects get quite familiar with the three-dimensionality of the space they design, the same cannot be said of the client who only looks at the end product. AR/VR technology helps those not directly involved with the design process of a building to have a closer experiential understanding of the design before the building is built.

Robotics is also making an appearance on the scene. While the current problem with robotics lies in scaling robotic technology to construct large buildings, there have been attempts to use robotics to build parts, which are then combined to create a bigger conglomerate. Nonetheless, the

process of using robotics is still a long way from coming to Malaysia where traditional construction is still able to build rapidly and with quality. The city of Kuala Lumpur of today is built on the back of great constructors using a lot of manual labour and traditional construction methods. There would be many opportunities for robotics in the future - for example in industrial design products and fabrication of building components."



Dr. Muhammad Imran Sarwar, Co-Founder and CTO, Digital Next Solutions Sdn Bhd, speaking at ICW2019

"A smart city is not about concrete... it is about connectivity and data that can make life easier for its citizens. It uses data obtained by numerous interconnected sensors, devices and machines located throughout the city that are stored as big data in cloud storage and analysed to make smart decisions in many areas of the complex daily activities, monitoring, management and operations of the city and its ecosystem. These will promote and help drive various divisions such as Smart Energy, Smart Environment, Smart Transport, Smart IT, Smart Building and Smart Healthcare.

An example of smart technologies being implemented in a city is Penang. It is experiencing issues in three major and common areas of city management - traffic congestion, pollution and waste management. We are looking to work with the state government to implement Smart City Solutions comprising systems with sensors to solve these issues."



Photo Credit: positive.news

The Future of Construction Could Be...Algae

It could just be that this unorthodox building material can absorb carbon dioxide and help insulate the structure underneath.

French architects have designed a tower block that uses algae to absorb CO₂. Proposed for the Chinese city of Hangzhou, the French Dream Towers are set to feature a 'bioactive' building facade and have been dreamt up by Paris-based XTU architects.

The 'biofacade' acts a bit like double glazing, but instead of air being present between the two panes, there is water and algae. As well as helping to offset the building's environmental impact by absorbing carbon dioxide, the algae helps insulate the structure, say designers.

Interest in bioactive facades has grown since an algae-powered building was unveiled at the 2013 International Building Exhibition in Hamburg. That project, BIQ House, turns algae harvested from the facade into biogas, which is used to power the property.

Source: www.positive.news



Vietnam Kick Starts its High-Speed Rail Project

Vietnam's proposed North-South High-Speed Railway (HSR), shelved in 2010, looks set to be back on track again. The project is expected to improve the transport quality for nearly half of the country's population.

The country's Ministry of Transportation presented a pre-feasibility study for the project in February which found that north-south transport routes currently benefit 49% of the nation and serve a population which accounts for 61% of the country's gross domestic product (GDP).

A study last year reported that a proposed 1,545 km HSR connecting Hanoi to Ho Chi Minh City with 20 stops may cost more than US\$58 billion. Interestingly, the original project was shelved in 2010 over an estimated US\$56 billion price tag.

In 2007, Vietnam's then-Prime Minister Nguyen Tan Dung announced plans for a 1,630 km track linking Hanoi to Ho Chi Minh City. It was expected to reduce travel time by rail from over 30 hours to just under 10.

The project was initially estimated to cost US\$33 billion and is based on Japan's Shinkansen bullet train technology. Funding would be provided by the Vietnamese government, Japanese development assistance funds and loans raised by Vietnam Railways. However, by 2010, cost estimates ballooned to over US\$56 billion. Critics argued that the cost was too high, the resultant high fares would be unaffordable and the railway would not be able to serve the majority of Vietnam's citizens as they mostly lived in rural areas.

Source: www.theaseanpost.com

ICW 2019 at a Glance

The International Construction Week (ICW) 2019 concluded on a high note. Powerful learnings, useful sharings and various technological advancements in construction were introduced.

Here is a snapshot in pictures.







Malaysian Tiles to Adorn UK's Battersea Luxury Apartments

Makers of Johnson Tiles Malaysia, Johnson Tiles Australia and Kingres is set to continue its global foray



Just as there's no question about the durability and appearance of ceramic or stone tiles, there's no doubting Dato' John Chua's steely character and business acumen as the Group Managing Director of Kim Hin Industry Bhd (KHIB), a public-listed company and producer of the world-renowned ceramic and porcelain tile brand, Kingres.

In 2018 the company was awarded the Matrade Export Award in recognition of its contributions to the nation's exports. The company's history though goes well back into the '70s when the business was founded by John's father, the late Chua Chui Tham.

The biggest hurdle right from the start for Kim Hin Industry was with the Malaysian psyche. "It's a stigma really. Anyone in any industry will tell you this - it's much harder to convince our own domestic customers with Malaysian-made products than to do it outside of our shores. Our people, unfortunately, are still caught up with the thinking that anything made in Malaysia is inferior. This is despite us having quality control governing bodies such as SIRIM and CIDB."

John came to the quick realisation that to build the company's image and gain customer confidence, Kim Hin Industry's tiles needed foreign accreditation. He decided to test the reception from neighbouring Singapore, a nation well known internationally for their high standards and hawk-eyed conformity assessment that include testing, calibration, inspection and certification.

It was no less than the Singapore government's renowned Housing Development Board (HDB) that Kim Hin Industry approached. "They are known to be one of the hardest and most difficult markets to enter because of the stringent procedures and I'm proud to say we managed to get their certification and performed well too."

The next milestone was taking their tiles to Peninsular Malaysia. Kim Hin Industry was able to grow very quickly in the much bigger peninsula market despite fierce competition from established companies such as H&R Johnson Tiles.

It was the period of Prime Minister Tun Dr Mahathir Mohamad's first tenure and Malaysia's construction industry was in the midst of a boom. John is quick to give credit where due.

"I'd say Tun Mahathir's greatest legacy is in introducing and promoting the Buy Malaysian Products policy. Unfortunately, the policy has been left in the back burner by the policy makers after him."

With the right kind of support and encouragement at that time, Kim Hin Industry was able to make further inroads abroad, this time expanding to Australia. Backed by their competitive pricing and quality certification from SIRIM and other international certification bodies, Kim Hin Industry became one of the first Malaysian companies to export tiles to Australia.

That was in the late '80s when the company shifted from using Japanese and Taiwanese technology to Italian mastery and know-how to improve their manufacturing capability. They weren't the first to take that leap as fierce rivals such as H&R Johnson had already done it. It was nevertheless a major leap for Kim

“The biggest hurdle right from the start for Kim Hin Industry was with the Malaysian psyche. It's a stigma really. Anyone in any industry will tell you this - it's much harder to convince our own domestic customers with Malaysian made products than to do it outside of our shores”



Top: Kingres Tile Library

Bottom: Kingres Showroom in Vietnam



Group MD Kim Hin Industry Bhd Dato' John Chua has a far-sighted vision for his tiles

Hin Industry and by 1992 they became the second ceramic tile company to be listed on the main board of KLSE, again just behind H&R Johnson.

In the early nineties China was opening its market, "looking for foreign investment" according to John, and in 1995 Kim Hin Industry decided to take up the offer to set up a manufacturing plant in Shanghai. Today, it is one of very few Malaysian companies that is still operating and surviving in the competitive landscape.

"It was when Malaysia was a tiger economy and China looked at our companies with great respect. It was the good times, under the stewardship

of Tan Sri Rafidah Aziz who was very energetic in promoting Malaysian investments overseas."

The good times ended with the 1997 Asian financial crisis, causing many businesses to fold up. The volatility of the ringgit especially against the US dollar made it tough to do business. Kim Hin Industry took it as a period of consolidation and the company stopped its expansion and acquisition and was able to successfully negotiate the challenge.

By 2014 the Kimgres brand was very well recognised in Australia, making it the biggest exporter of tiles from Malaysia to Down Under. That same year Kim Hin Industry bought over its chief foe Johnson Tiles Australia. In 2016, Kim Hin Industry bought over Johan Ceramics (formerly H&R Johnson Tiles Malaysia). By his own admission, it was H&R Johnson that John had looked up to when he started out so it was quite a monumental feat when he finally took over his arch-rival in his home ground.

While Australia accounts for a large portion of Kim Hin Industry's exports,

the group has also ventured into other markets including the United States, United Kingdom, Taiwan, New Zealand, Pakistan, Vietnam and the Middle East.

It is undoubtedly John's conviction, tenacity and persistence in confronting authorities head-on that has been the biggest contributory factor to Kim Hin Industry's meteoric rise and their position as one of the leading names connected to some of the biggest construction projects till date.

Under John's direction Kim Hin Industry is where it is now - supplying Kimgres Tiles to prestigious projects such as the iconic Battersea Power Station luxury apartments and the redevelopment of the BBC Television Centre in London.

Even with Battersea, a wholly owned Malaysian project, John had to work hard to convince the relevant people and "remind them of the call to use Malaysian-made products in Malaysian investments abroad". "We had to meet strict regulations but we proved to them we had the capability to produce whatever quality that may be required to meet world class standards."

After all these years and setbacks, John still remains optimistic on changing the mindset of Malaysian developers overseas helping Malaysian industries at home. "I feel there's much more that the government, CIDB and Matrade should be doing to vigorously promote Malaysian-made products. We are not supported by anyone like the way China supports its businesses by giving export rebates. The fact is, the encroachment of China companies in the tiles business is quite alarming. Malaysia currently imports almost RM500 million worth of tiles from China alone."

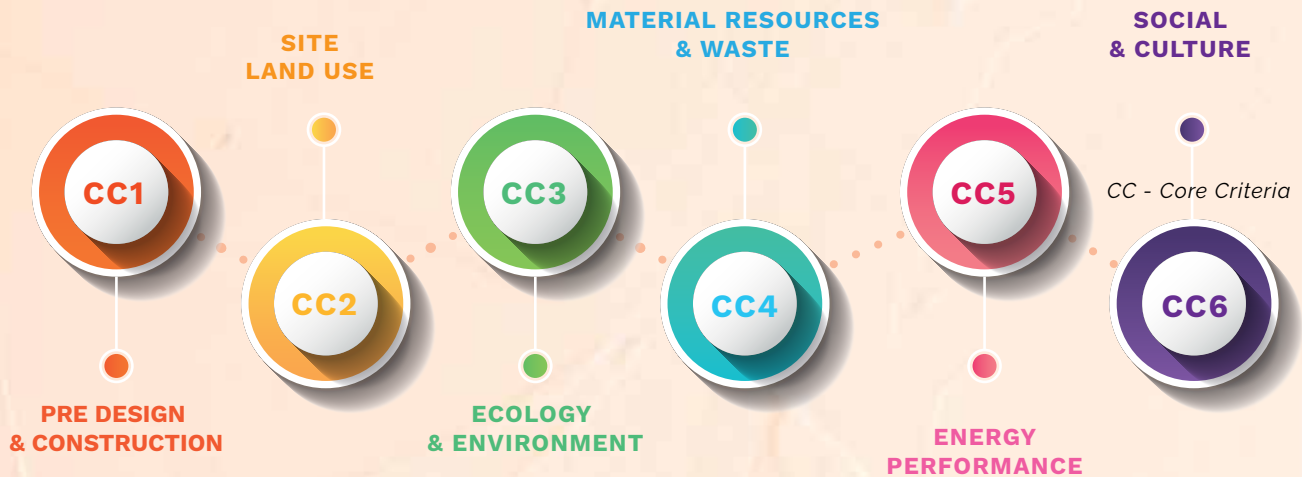
Buy Malaysian first and half our problems will be solved is John's firm mantra. ■

"I feel there's much more that the government, CIDB and Matrade should be doing to vigorously promote Malaysian-made products. We are not supported by anyone like the way China supports its businesses by giving export rebates"



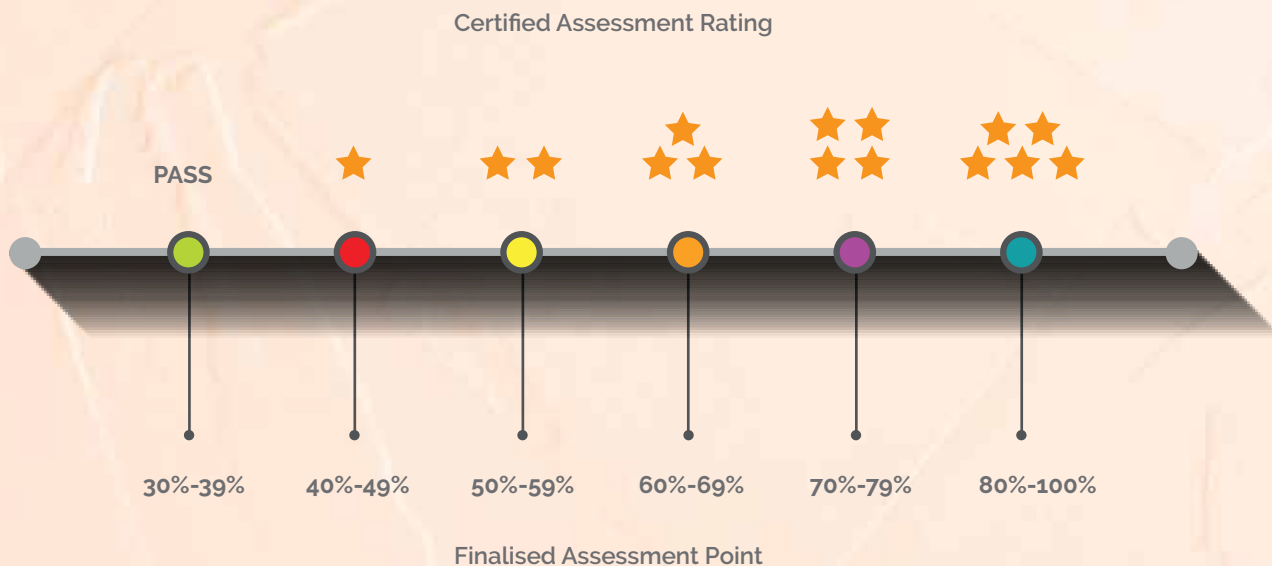
THE ESSENCE OF SUSTAINABLE INFRASTAR

A sustainable rating tool developed by CIDB Malaysia to assess sustainable measures in Malaysian construction projects – design and construction stages.



SUSTAINABLE INFRASTAR CERTIFICATION

A certified assessment that achieves 40% and above credit percentage will be awarded with a star rating. The classifications of assessment points with their respective ratings are as follows:



APPLICABLE PROJECTS

Sustainable INFRASTAR can be applied to all projects:



Roads, Tunnels and Bridges



Rail Transport System



Water Utility Services



Airports



Waterways, Canals and Ports



Waste Facilities - Solid Waste, Wastewater and Hazardous Materials



Energy Generation and Distribution



Telecommunication

The Woman who Moved the Twin Towers

It was a solution no one dared to voice out - not after the masterplan had been approved, and especially not after the then Prime Minister Tun Dr Mahathir Mohamad had officiated the project with a groundbreaking ceremony. This was the Petronas Twin Towers, the first 88-storey iconic super high-rise to be built in the country in 1992.

The then 30-year old Dato' Hashimah Hashim who had been headhunted from a good job in London to join Petronas, informed her bosses that the planned towers needed to be moved due to large limestone cavities found during the soil investigation.

"I was only a young engineer and I made the recommendation to move the towers 60m southwest due to the irregularities found in the original site. Imagine my pleasant surprise when I received a phone call the very next day informing me that my proposal was accepted." It resulted in the Petronas Twin Towers standing grandly in its current location - some metres away from its original spot!

Dato' Hashimah has come a long way from those early days. Growing alongside the company in various key roles, she currently serves as the Executive Director and Board Member of KLCC Projek Sdn Bhd (KLCC Projek), a

company that is wholly owned by KLCC Holdings Sdn Bhd and fully owned by Petronas.

Warm in approach and vastly experienced, this distinguished individual who decided to follow in her father's footsteps in construction, graduated from UK's University of Nottingham in Civil and Structural Engineering.

Today, KLCC Projek is an expert in building high rises above 60 storeys. This includes townships, especially in those that incorporate transit-oriented development (TOD). To ensure the efficiency of the many projects the company is working on, they have gone digital, adopting the Building Information Modelling (BIM).

"I am a big fan of BIM and it is the way to go. We have incorporated it as part of our KPI, so even the top management is familiar with BIM. We use it for planning, design, construction and facility management," she told HEIGHTS in an interview at the Malaysian Petroleum Club, located in one of the iconic twin towers.


Dato' Hashimah is also transfixed with the modularity of industrialised building system (IBS). IBS works really well with repetitive designs and the quality of the components can be controlled far

more efficiently as opposed to in-situ construction. Thus, BIM and IBS work hand-in-hand.

" I was only a young engineer and I made the recommendation to move the towers 60m southwest due to the irregularities found in the original site. "

The technique of modular design was successfully used for Universiti Teknologi Petronas project, she explains. While the buildings look the same because they were modular, KLCC Projek got creative to ensure they do not look uniformed. In a nutshell, Dato' Hashimah believes that IBS, creativity and the use of BIM make for the best combination to cater for fast construction.

KLCC Projek also invests in training, sharing good values and embracing an anti-bribery culture among staff. "In project management, these are very important. One of the key things we do is sharing of good core values because we want to inculcate the habit of doing the right things right the first time. We

A portrait of Dato' Hashimah Hashim, a woman wearing a bright blue hijab and a dark navy blue suit. She is standing on a balcony with a metal railing, leaning her right arm on it. The background features a modern, curved glass skyscraper, likely the Petronas Towers in Kuala Lumpur, under a cloudy sky. The text "A soft-spoken force of nature, Dato' Hashimah Hashim's journey in construction" is overlaid in the top right corner.

A soft-spoken force of nature,
Dato' Hashimah Hashim's
journey in construction



The drawbridge in Terengganu

practice the five Quality Principles (5QPs) and the Petronas Cultural Beliefs (PCB). These are vital as we have to maintain our quality and standards in all our projects, including Putrajaya, KLCC Precinct and the East Coast Economic Region (ECER)."

In addition, the company also adopted the ISO 9001:2015 QMS (Quality

Management System), ISO 14001:2015 EMS (Environmental Management System), OHSAS 18001:2007 OHSMS (Occupational Health and Safety Management System), and most recently, the ISO 37001:2016 ABMS (Anti-Bribery Management System) – where KLCC Projeks is the second project management company certified to this standard in Malaysia.

It is hard to imagine such a dedicated workaholic having any time at all for non-work-related activities but that's not true as her subordinates say she is just as great at baking. "I have a few groups of friends outside of work, whom I enjoy spending time with. We all need that. I work at keeping fit too because I still go for site inspections. I swim and spend quality time with my husband and

daughter. I also enjoy cooking because we don't like eating out."

KLCC Projeks takes pride in a long list of awards and recognition as it firmly believes in delivering excellence and superior performance. To test themselves further as a way to identify areas of improvement, the company entered the competition ROSPA Award (Royal Society for Prevention & Accidents) in the UK, known for its strict adherence to safety principles of construction. KLCC Projeks walked away with the silver award, realising that they meet the international benchmark. Dato' Hashimah lays the success of the company to her project managers. "They are very committed and have worked hard in getting to where we are today. I am very proud of them."

"I am a big fan of BIM and it is the way to go. We have incorporated it as part of our KPI, so even the top management is familiar with BIM. We use it for planning, design, construction and facility management."

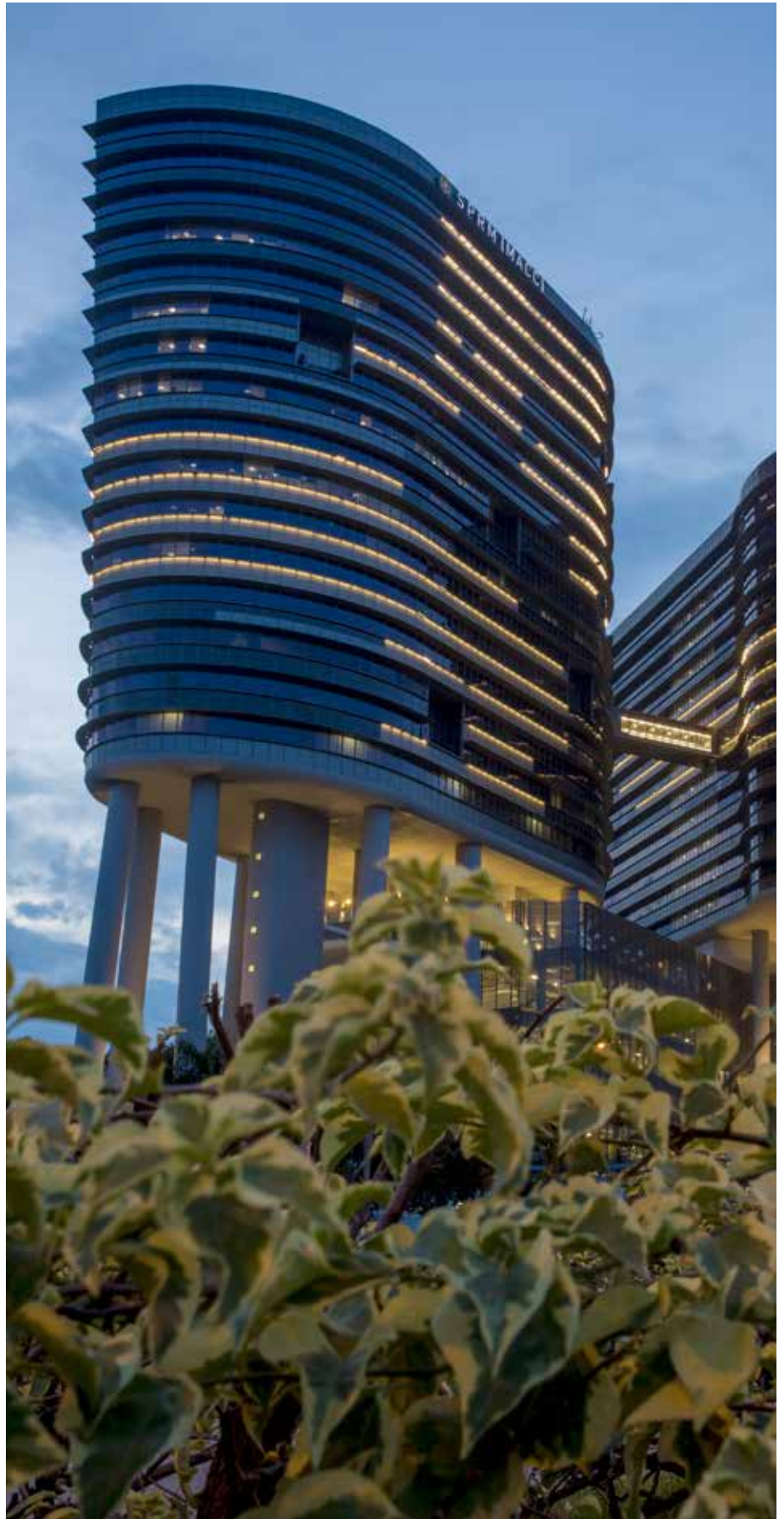
Dato' Hashimah herself was awarded the CTBUH Fellows 2019. She is the first Malaysian to receive the prestigious recognition from the renowned Council on Tall Buildings and Urban Habitat (CTBUH) in Chicago, USA.

The achievement, undoubtedly, is laid in the foundation of leadership. "Empowerment is important. I set the vision for our company and make sure everything is in place and foremost of all, I empower my people by training them well. With 340 staff and 60 projects happening concurrently, there has to be a structure of monitoring and improvement."

Understanding that KLCC Projek is a service provider, staff are groomed to build their confidence and expertise levels. By her own admission Dato' Hashimah is a firm yet fair person who believes in engagement. "I listen to what people have to say. I am a believer in knowledge sharing as well. Imagine, with our workforce of 340 each with average work experience of 10 years- the collective knowledge is tremendous! It would be a shame if people worked in silos." In line with this, the company encourages knowledge management, where staff can share their experience in the company portal. In addition, there is a dedicated annual Knowledge Day for staff, which is usually carried out in the third quarter of the year.

"I empower my people by training them well. With 340 staff and 60 projects happening concurrently, there has to be a structure of monitoring and improvement."

"I learned something invaluable the day I was told that my recommendation to move the Twin Towers was approved. That is, to always listen to your people and their ideas, regardless of their position. And that, is something I practice till today," she said. ■



The new MACC building in Putrajaya

Promoting IBS Solutions and Training Young
Malaysian TVET Skills, The China Way



It's SANY Time

The fact that China has caught up with its European and American counterparts in the construction business, largely owing to strong infrastructure spending, is old news. SANY Group, a Fortune 500 company with growing international presence in the design and manufacturing of construction machinery, leads the way with plants in the US, Germany, Brazil and India, and businesses covering over 100 countries and regions worldwide.

With a heavy focus on quality, technology and research and development, SANY has contributed majorly towards changing perceptions of Chinese manufactured construction equipment, material, and design. Recognised as one of the most innovative and successful companies globally, and its concrete machinery ranked number one in the world, SANY is now ready for Malaysia.

SANY Construction Industry Development (Malaysia) Sdn Bhd (SCID) signed a Memorandum of Understanding (MoU) with Construction Industry Development Board Malaysia (CIDB) in December 2018 to build capacity in Industrialized Building System (IBS) in order to drive productivity in construction.

"Sany has a very good base in China after 30 years. With China moving so rapidly,

SANY has always kept pace, as we use our own equipment to support all the big projects we have been involved in over the years; from China's bullet trains to many of our high-rise wonders, such as the Shanghai Tower. We believe that by combining our strength, expertise and resources with Malaysia, we can truly make a difference in the industry, which is also being in line with the Malaysian government's seriousness in promoting IBS construction," begins Keade Wang Zhenyi, General Manager of SANY Construction Industry Development (Malaysia) Sdn Bhd.

In Malaysia, SANY is dedicated to promoting IBS solutions to optimise its efficiency gearing towards automation Industrial Revolution 4.0, one of the Malaysian government's initiatives. In collaboration with various local partners, SANY has established three pre-cast factories across Malaysia and has proven its success through completed IBS projects, mainly affordable homes. IBS involves much more than just the use of prefabricated components and mechanisation into building, as there is also the crucial aspect of design. It is only then that there can be increased efficiency, quality and productivity of construction projects. Wang goes as far as to say, how competitive the price of a house is, depends largely on design. He also acknowledges that Malaysia

"In Malaysia, SANY is dedicated to promoting IBS solutions to optimise its efficiency gearing towards automation Industrial Revolution 4.0, one of the Malaysian government's initiatives."

needs very clear policies on what constitutes IBS, and believes that the Works Ministry and CIDB are working on a structure for a policy.

"In SANY we provide the whole package. It's a value chain where we have the capacity to take on the responsibility right from the designing, production and installation stages, which means the buck stops with us. Over the years SANY has gathered so much data on construction and has been focussed on IBS systems. We have also consulted with countries that specialise in IBS, to collect and benefit from their know-how and have also engaged eminent consultants. We have set up very big factories and research and development centres in Germany, America, Japan and India to create what we call, a China Construction Building Model (CCBM)."



Sany's intelligent manufacturing pilot demonstration project in PR China

It is using this model that SANY has the capacity to build 1,000 houses and are able to train 2,000 workers at its IBS factory located in Kijal, Terengganu. It is also where SANY's first IBS factory was built. Wang shares that the reason for Terengganu being SANY's first point of investment was

because it is the sister state of the province of Hunan, SANY's birthplace.

SANY Malaysia is also geared up for a transfer of technologies in the academic field. They are already working in collaboration with a technical

college in Perak, under the Malaysian government's Technical and Vocational Education Training (TVET) system. SANY has developed its own framework, using the DPI+ 3 E model [Design, Production, Installation + Equipment, Education and Entrepreneurship].



Left: Keade Wang Zhenyi, General Manager of SANY Construction Industry Development (Malaysia) Sdn Bhd



Right: Chang Bar Kuei, Director of SANY Construction Industry Development

"We realise manpower is essential to complement the industry, and Malaysia has manpower supply, apart from generous resources. You can have technology, material and machinery but without properly trained, efficient manpower it is impossible for the absolute best outcome. Currently, the TVET programme here is fragmented since there's overlapping of responsibilities between different government bodies, but the present government has been supportive in bringing about positive change into TVET," explains Chang Bar Kuei, Director of SANY Construction Industry Development. "With the new government, we can naturally expect new policies. Since TVET involves many ministries, it could take a bit of time



but we will certainly benefit with a clearer direction to know where we are headed. With that in order, and using SANY's advanced products and services, I'm certain Malaysia would catch up with the tide of upgrading," says Chang.

“ You can have technology, material and machinery but without properly trained, efficient manpower it is impossible for the absolute best outcome ”

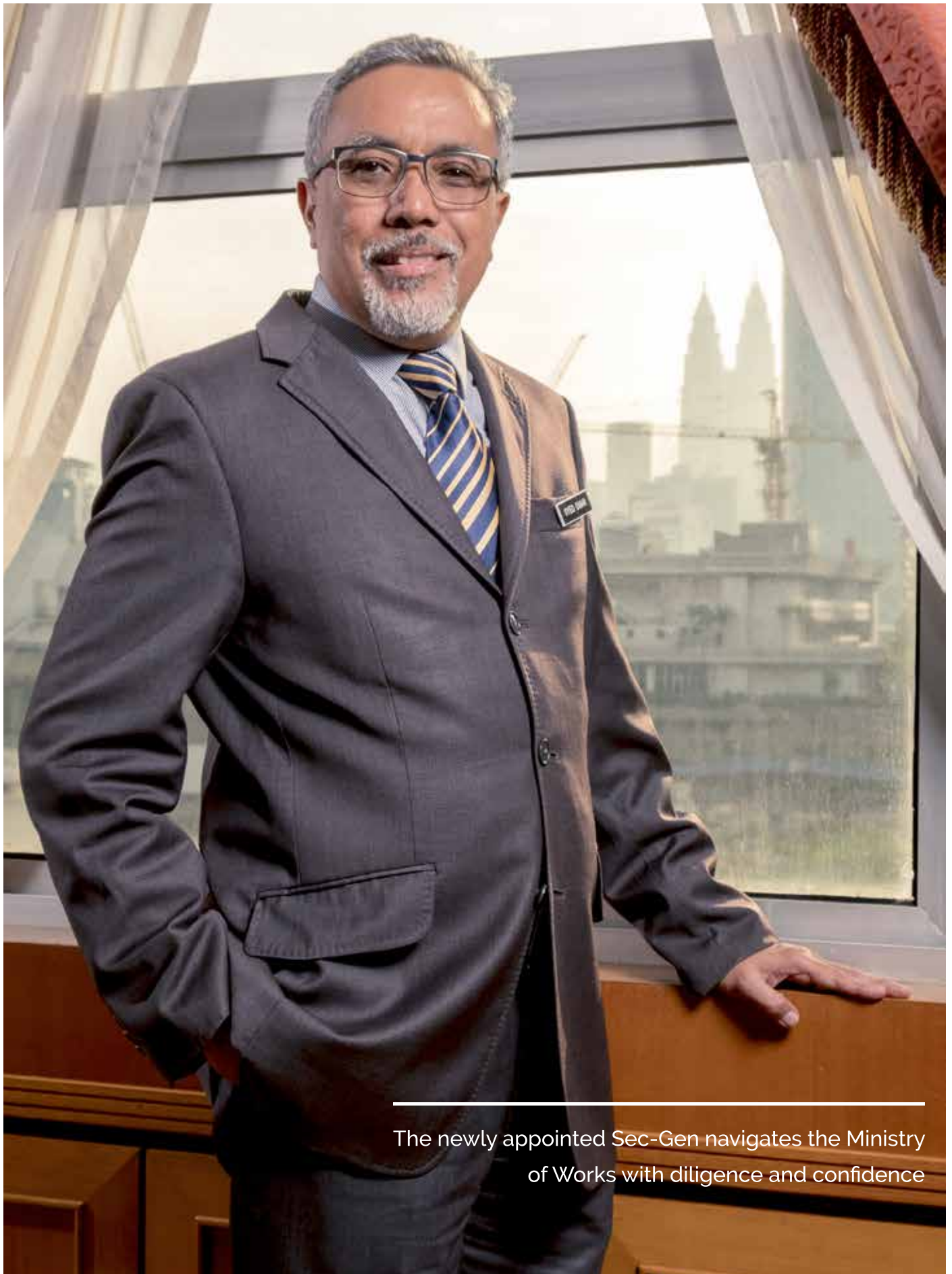
The Education Minister Dr Maszlee Malik on a recent visit to China made a visit to SANY Polytechnic College, an institution devoted to the integration of industry and education and coordination among engineering, liberal arts and art subjects. SANY Polytechnic College is public listed and has more than 7,000 students being trained to become world recognised engineers, operators or RD specialists.

"To further strategise ourselves in Malaysia, we feel our TVET programme must compliment the industry. Instead of heavy reliance on cheap foreign labour we want to train young Malaysian talents and give them job opportunities on a worldwide footage, using SANY'S leverage. We will, however, be selective about who we train because the right attitude is important. We want to make sure that the students we train have sound technical, and soft skills so that they can work anywhere in the world.

"We are currently working with the Ministry of Education and CIDB on coming up with an industry relevant syllabus, which is critical, and only then can we embark on selecting students. Eventually, we plan to offer our graduates not just jobs but jobs with better, competitive salaries than the current minimum wage. For that, the right candidates must be trained in skills that the industry requires," says

Chang, adding that it will fall nicely with SANY's theme, 'Globalisation Using Localisation'.

Wang Zhenyi reiterates SANY Construction Industry Development Malaysia's commitment to its Malaysian counterparts. "SANY is ready to transform the Malaysian construction industry with its new materials, technology and equipment, integrated with big data and the Internet of Things, just as we are prepared to train and employ Malaysian workers in industrialisation technologies to promote job creation and skill development, which in turn will boost the local economy. I'm confident we will be extended the necessary support by relevant Malaysian government agencies." ■



The newly appointed Sec-Gen navigates the Ministry
of Works with diligence and confidence

KKR Sec-Gen's Mantra - Leadership is not wielding authority, its empowering others with integrity

When Dato Dr Syed Omar Sharifuddin Syed Ikhsan clocked in on his first day as the new secretary-general of the Works Ministry in January, he found on his desk an 84-page dossier left behind by his predecessor on the things which he had to follow-up and do.

It was a new ministry and a new environment for Dato Syed Omar but the task ahead was not too daunting for him. With his years of experience in his previous positions as CEO of Majlis Agama Islam Perak (statutory body), Senior Deputy Director at the National Institute of Public Administration (INTAN) and Perlis State Secretary, Dato Syed Omar is familiar with the work structure and system. He understands the importance of dealing with the new set of people working under him.

"Good leadership and people management is not about dominance and being a control freak. It is about understanding your team players, identifying their strengths and placing confidence in them to do their part. I believe in my officers, I acknowledge them and I also monitor everything from time to time to ensure that efficiency and quality of work are not compromised in any manner," he told HEIGHTS in a recent interview in his spacious office at the ministry.

Ever smiling and ready to speak about his hobbies - as well as of his responsibilities ahead, Dato Dr Syed Omar is a firm believer in self-

leadership and to lead by example to one's colleagues. Author of a book on development of self-leadership called "Kepimpinan Lestari Mengupaya Diri, Memimpin Insan, Memperkasa Organisasi", Dato Syed Omar values the importance of communication.

The inspiration for the book, he said, stemmed from his modest background as son of a taxi driver from a small village. While reminiscing about his early years, Dato Dr. Syed Omar admitted to some doubts he had at a young age. "From the time I was a secondary student in Sekolah Menengah Iskandar Shah in Parit, Perak till pursuing my degree at University Malaya, I wondered if I would be able to fit in as I did not converse in English very well then."

"It was a setback but I persevered to move forward and finally had the opportunity to further both my Masters in the US and PhD in the UK. If I had not stopped the voices that emanated from

within me, I wouldn't be here today," shared Dato Syed Omar who is also an avid photographer.

The amenable top civil servant also shared his work culture, and on how he keeps himself fit and stress-free: "I'm an early riser and always plan ahead. I leave home at 6.45am every morning to skip the traffic to be at work at least an hour early and arrange my schedule for the day. If there's extra time I read books. I also enjoy my morning brisk walks and once in a while I participate in long distance run."

When the conversation slowly moved into his career, Dato Syed Omar said he has an extensive experience in serving in the civil service, starting from being an Archives Officer in 1984, to where he is now - to spearhead the Works Ministry as the Secretary-General. He also shared his new aspirations and strategies to manage infrastructure development throughout the nation.

"The digital evolution should be approached and implemented efficiently to ensure that we could reap its benefits in the long run. It has to be applied progressively and studied carefully before going on a full force to make it the operating standard of the construction industry, particularly in government construction projects"

"My role and responsibilities as the secretary-general mainly involve controlling the budget allocated for the ministry, human resource management and to deal with the core business of the ministry which is to look into infrastructure development and policy making for the construction sector. The construction industry in Malaysia is going through a systemic revolution and the current government has made it a national agenda to look into digitalising the industry. It is high time that the construction sector adopts and adapts

to the digital environment as it serves as a catalyst for the transformation of the industry," said Dato Syed Omar.

One of the major plans in the pipeline is to ensure that software technologies like Building Information Modelling (BIM) is adopted in upcoming construction projects and to implement e-works, a digitalised procurement system for government construction contracts. BIM being a cutting-edge 3D design software, contributes significantly to every phase of a project life cycle by creating a platform to allow projects to be visualised virtually before they are constructed physically. It aids in eliminating errors that arise during the construction process, diminishes delays, reduces costs and mitigates risks. Projects utilising BIM have shown to significantly maximise productivity at every stage of the project lifecycle and have a greater chance of success.

Dato Syed Omar explained that the adoption rate of BIM in Malaysia is still at an infant stage but the ministry and CIDB Malaysia are taking strong measures to

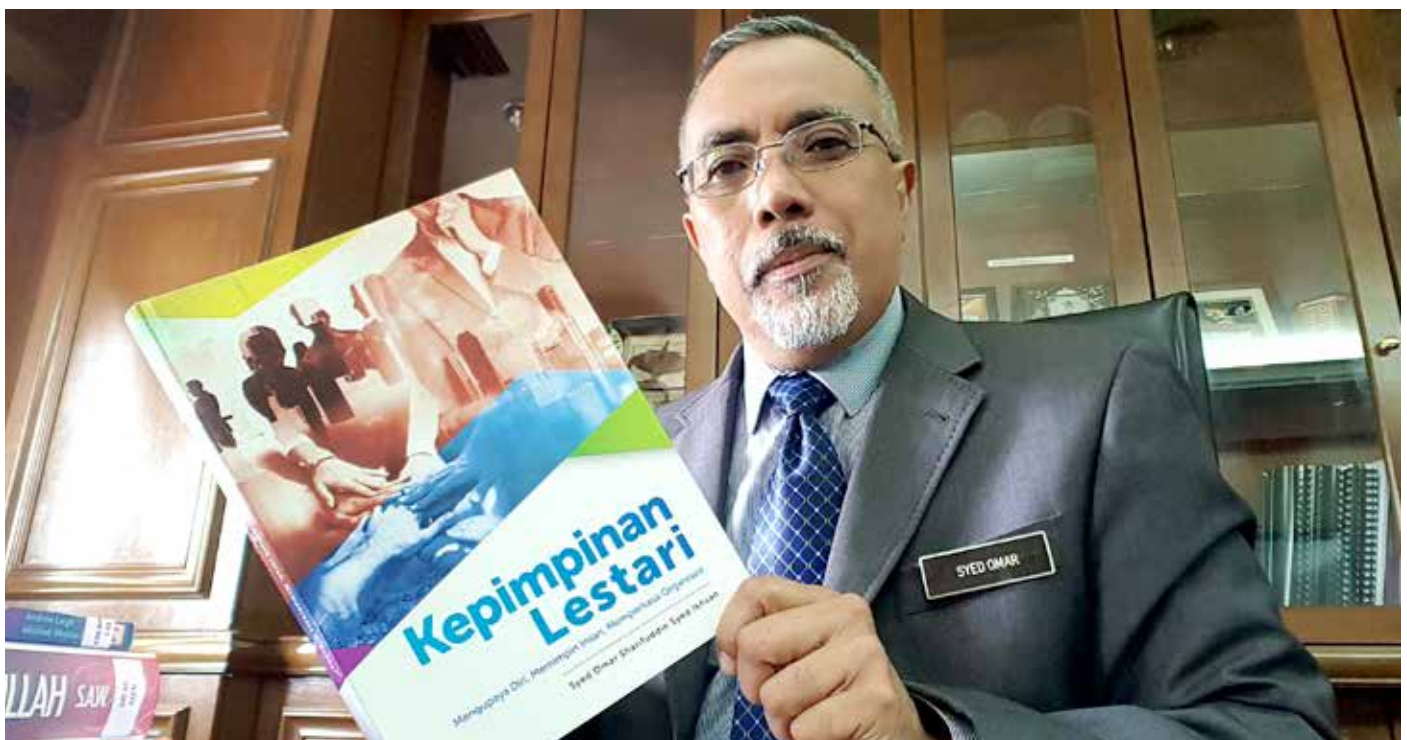
implement BIM in latest government projects and are increasing awareness by educating contractors to shift from the traditional way to BIM. "The digital evolution should be approached and implemented efficiently to ensure that we could reap its benefits in the long run. It has to be applied progressively and studied carefully before going on a full force to make it the operating standard of the construction industry, particularly in government construction projects."

The e-works system meanwhile is expected to be implemented in the near future. This comprehensive project is currently being researched by an independent consultant agency

"Good leadership and people management is not about dominance and being a control freak. It is about understanding your team players, identifying their strengths and placing confidence in them to do their part."

before its nationwide implementation. "The e-work system is not really new as the Finance Ministry has a similar 'e-perolehan' system in place and we are just emulating the success of the e-works system initiative in countries like New Zealand, Australia and South Korea. This system will streamline all the overlaps and display greater transparency in the overall procurement process."

Dato Syed Omar also explained that CIDB's initiatives are leading the industry in the right way to becoming competitive at the international front. One of their notable initiatives includes the introduction of the green card, a registration card issued by CIDB that is mandatory for all construction personnel of construction projects. Without the card they are not permitted into the construction site. Workers with the green cards are also covered by a special insurance scheme against death and accidents. "This is to ensure all workers are guaranteed of having work experience before stepping into the worksite and that all construction works are carried out in a safe manner," he said.



Dato Syed Omar with his book 'Kepimpinan Lestari: Mengupaya Diri, Memimpin Insan, Memperkasa Organisasi'



Construction in Australia is Slowing

Construction work across Australia has fallen by 3.1% in the last quarter of 2018, which one economist said could have dire consequences for the economy.

Australian Bureau of Statistics figures showed total building work on homes dropped 3.6% on the previous three months, while work on non-residential buildings grew by 1.9%.

The biggest quarterly fall came from a 5% decline in engineering work, while total construction work was down by 2.6% from the same time last year.

UTS Business School professor Warren Hogan told Trading Day the numbers were significant as construction has been one of the "key drivers" of the economy in recent years.

"If it peels off, the question is, where is the growth going to come from?" the former ANZ chief economist asked.

It's now two quarters in a row that construction has fallen.

Source: www.yourmoney.com.au



Here are 8 Sustainable Innovations in Construction Materials

Here is a list of some innovative construction materials and ideas that could revolutionize the industry and help us build a more sustainable future, according to inhabitat website.

They can lead to sustainable construction innovations that not only reduce the production of carbon dioxide, but also improve a building's longevity, reduce energy bills and increase the use of natural light.

So what are the eight materials? Here you go: transparent wood, bamboo-reinforced concrete, cigarette butt bricks, hydrogel, super-hydrophobic cement, synthetic spider silk, breathe bricks and LED and OLED lighting.

Source: inhabitat.com



Tuan Baru Bian is briefed on the new testing and certification programme for IBS

Having IMPACT to Test and Certify IBS

CIDB Malaysia has launched a new testing and certification programme for Industrialised Building Systems (IBS) called IMPACT, marking a milestone in the nation's effort to enhance the local IBS ecosystem.

It will now serve as a standard reference point for the construction industry to ensure the quality of IBS products and components in a systematic manner. It will ensure that the nation's shift towards IBS will happen within a systematic, productive and consistent ecosystem.

IMPACT is based on CIDB's standard known as Construction Industry Standard (CIS) 24:2018 IBS Manufacturer & Product Assessment & Certification.

The IMPACT programme is a holistic system that encompasses verification, validation, testing and certification of IBS products and components based on CIDB's standards. With the

*“ The IMPACT programme's systematic testing and auditing process gives industry players the assurance that the end product meets quality requirements, based on the certification given
- CIDB Chairman Tan Sri Dr Ir Ahmad Tajuddin Ali. ”*

implementation of this new system, the construction industry can be assured that IBS end-products are of high quality as they meet the specified requirements.

“The IMPACT programme's systematic testing and auditing process gives industry players the assurance that the end product meets quality requirements, based on the certification given,” said CIDB Chairman Tan Sri Dr Ir Ahmad Tajuddin Ali.

The certification process will also boost the public's confidence in the quality of IBS products, while also increasing its commercial value.

IMPACT was launched by Works Minister Baru Bian on Jan 17. Also present was Works Ministry secretary-general Dato' Dr Syed Omar Sharifuddin bin Syed Ikhsan and CIDB's Chief Executive Dato' Ir Ahmad 'Asri Abdul Hamid. ■



Certified. A participant receives a SSAP certificate



CIDB-Lendlease Programme Recruits 68 Site Safety Apprentice

The Safety Supervisor Apprenticeship Programme (SSAP) is a partnership between CIDB Malaysia and Lendlease, for which 68 apprentices had been recruited, and as of end January, a total of 34 of them have successfully completed the programme.

The SSAP graduates have been offered employment opportunities in the construction industry, including with Lendlease.

The SSAP is the first formal apprenticeship collaboration between the public and private sectors in Malaysia, addressing the safety needs of the construction industry. This initiative is also in line with the Construction Industry Transformation Programme 2016-2020 (CITP) to create a world-class construction industry that is highly productive, environmentally sustainable, with globally competitive players while focused on safety and quality standards.

"CIDB is committed in engaging construction industry players, to produce not only competent and skilled workers to serve in the sector, but also to train those at supervisory and managerial levels. I am confident that SSAP will help to develop an effective, highly skilled workforce in the industry.

"As agents of change, the apprentices are catalysts to bring the construction industry to the next level," said CIDB

Malaysia Chief Executive Dato' Ir. Ahmad 'Asri Abdul Hamid.

Jointly developed by Lendlease and CIDB, the structured programme provides industry-recognised training (encompassing both theoretical and onsite training components) through an integrated approach. Apprentices who successfully complete the SSAP will earn various certifications issued by the Department of Occupational Safety & Health (DOSH), National Institute of Occupational Safety & Health (NIOSH) and CIDB Akademi Binaan Malaysia (ABM).

These certifications are required before the apprentices can be appointed as site safety supervisors on construction projects. The collaboration between Lendlease Malaysia and CIDB will see a total of 150 apprentices being trained over the five-year programme period. The SSAP varies from 12 to 24 months, subject to trainees' experience. ■



CIDB Holdings Appoints Supian Musa as New CEO

Supian Musa, 55, has taken over as the new Chief Executive Officer of CIDB Holdings effective Jan 2, 2019. He replaced Sr Abdul Latif Hitam who retired on Nov 24, 2018.

With more than 20 years of experience in a variety of management and corporate roles, Supian will lead CIDBH as it enters a new phase in the company's development.

Hailing from Gemas, Negeri Sembilan, the double degree holder from Universiti Teknologi Malaysia was previously in charge of the Akademi Binaan Malaysia (ABM) Wilayah Selatan for 15 years. ■

Events to Look Out for in the First Quarter of 2019

EVENT	VENUE	DATE
International Conference on Civil and Architectural Engineering (ICCAE)	Koto, Japan	7-8 Apr 2019
International Conference on Civil and Architectural Engineering (ICCAE)	Guangzho, China	16-17 Apr 2019
International Conference on Sustainable Development and Green Buildings (ISCDGB)	Qingdao, China	25-27 Apr 2019
Smart Cities India Exhibition and Conference	New Delhi, India	22-24 May 2019
International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP)	Seoul, South Korea	26-30 May 2019
International Conference on Urban Planning and Property Development (UPPD)	Singapore	27-28 May 2019
International Conference on Civil and Architectural Engineering (ICCAE)	Palm Garden Hotel, Putrajaya	2-3 June 2019
International Conference on Architecture Built Environment, Design, Engineering Sciences	Bangkok, Thailand	11-12 June 2019
International Conference on Architecture and Civil Engineering (ICACE)	Swiss Garden Residences KL, Kuala Lumpur	26-27 June 2019

Get your events listed by sending an email to heightscidb@cidb.gov.my



Works Minister Tuan Baru Bian during the launch in Kota Kinabalu, Sabah

New Malaysian Standard Launched to Raise the Construction Bar

CIDB's Civil Engineering Standard Method of Measurement (MyCESMM) is now recognised as a Malaysian Standard, MS 2701:2018.

The recognition was accorded in January by the Department of Standards Malaysia, which is under the purview of the Ministry of International Trade and Industry.

This initiative is part of the overall strategy to raise the standards of the local construction industry to be on par with developed economies. It also achieves one of the KPIs set under the government's Construction Industry Transformation Programme 2016 – 2020 (CITP).

"The government recognises that the use of a standardised method of measurement is an important step towards the internationalisation of Malaysia's construction practices. MyCESMM was used to enhance the level of professionalism in the industry. The launch of MS 2701:2018 marks the next step in the development of MyCESMM as an industry standard," said Works Minister Baru Bian during the launch in Kota Kinabalu, Sabah.

He said MS 2701:2018 is now a national standard that can be applied to all projects in the country. It integrates various specifications that previously

existed in the Malaysian market, while consolidating best industry practices from around the world.

"Importantly, the recognition of MyCESMM as a Malaysian Standard was achieved after a long consultative and collaborative process with industry stakeholders, technical agencies as well as higher learning institutions," he added.

The introduction of MS 2017:2018 is one of the key initiatives to create a culture of high quality and professionalism in the Malaysian construction industry, thereby raising the quality of Malaysian construction practices to international standards. This will increase the competitiveness of Malaysian construction players in the global market, which is in line with the outcomes envisioned in the CITP's Internationalisation strategic thrust.

Also present at the ceremony was CIDB Chairman Tan Sri Dr Ir Ahmad Tajuddin Ali. ■



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