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CONSTRUCTION FROM A NEW ANGLE

ISSUE 2 • APR - JUN 2021

Utilising Technology towards Project Safety

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An Architect's Experience

One Year with Covid-19 -
How Do You Manage, Legally Speaking?

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Encore Melaka:
The Crown of Impression City

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EDITORIAL MESSAGE

Safety First, Always.

As the pandemic continues to rage on around us, nothing is more important than safety. In times like these, it is the stellar contractors who value safety above all else that come to mind. Whatever your business goals are, they should never come at the expense of your workers' health and safety. This is why we are delighted to showcase MMC Gamuda as this issue's Cover Story. Their commitment to safety serves as both an inspiration and a goal for us to aim for.

Our *Situational Analysis of the Construction Industry* article offered some insights on mitigation strategies and immediate reform measures to help the construction industry rebound. We also took a look at how our QLASSIC awareness efforts under the Construction Industry Transformation Programme 2016 (CITP) performed - the results are promising and will continue to improve once the pandemic has been contained.

We included the full experience of a Building Information Modelling (BIM) implementation from an architect's perspective. Like us, NRY Architects advocates that BIM should be implemented across all project phases to fully reap its benefits.

We asked our panel of industry experts whether the RM528 million award tenders by the Ministry of Works are enough to give our industry the boost it needs during these trying times. Among the opinions voiced was the need to accelerate the growth and recovery of the construction sector to revive the sluggish economy and mitigate the effects of the Covid-19 pandemic, as well as to remove unnecessary, redundant or obsolete regulatory hurdles that may impede that growth.

As the vaccine rollout continues on its upward trajectory and we return to some form of normalcy, there is hope for a better tomorrow.

Datuk Ir. Ahmad 'Asri Abdul Hamid
Chief Executive, CIDB Malaysia

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Baubot in action

Precision cutting with the robot arm's plasma torch tool

Printstones Unveils Baubot Construction Stair-climbing Robot

Austrian startup Printstones introduced the Baubot construction robot in April 2021, which features modular design and open-source software to enhance the possibilities of technology.

According to the company, the robot was intended to boost automation in the construction business, alleviate safety issues on the work site, and lower total expenses. Baubot can travel at speeds of up to 3.2 km/h and even climb stairs, thanks to off-road caterpillars.

It can be controlled via a smartphone as well as pre-programmed commands. The robot can carry weights of up to 900kg for eight hours without needing to be recharged.

The Baubot multifunctional robotic arm has a range of up to a metre with an accuracy tolerance of less than 1mm and can accommodate a variety of tools for performing construction tasks such as milling and drilling, screw wrapping, plasma cutting, welding, brick laying, grinding, and painting surfaces.

The built-in cameras on Baubot allow you to monitor the object, as well as the built-in illumination for night work and the built-in screens for displaying status notifications and instruction messages for workers. According to Printstones, the robot takes very little time to set up and can be delivered to the site using a standard conveyor.

The Baubot is available for purchase from May 2021, along with a set of software development tools that will allow users to programme the machines to perform specific tasks. According to Prinstones, pricing will be determined by the amount of engineering involved in manufacturing as well as the applications integrated into the robot in question. At this moment, the company anticipates that each unit will take approximately six months to ship and the selling price starts from 150,000 euros.

Source: www.newatlas.com

New Aluminium Generates 85% Less Emissions

En+, a metals company listed in London and Moscow claims to have developed an aluminium that generates 85 percent fewer pollutants than traditional counterparts.

The metal "Allow" produced by En+ was created using new-generation inert anode electrolysers at the En+ Krasnoyarsk plant in Russia.

According to its producer, its production emits less than 0.01 tonnes of CO_2 equivalent per tonne of metal.

Inert anodes replace typical carbon anodes with non-consumable materials such metal ceramics or alloys, resulting in an 85 percent reduction in smelting emissions.

The new electrolyser has a capability of around 1 tonne of aluminium per day at a current of 140,000 A.

"As part of our net zero commitment announced in January this year, we declared sector-leading carbon reduction targets — net zero by 2050 and at least 35% reduction in emissions by 2030. Today, I am pleased to announce that we have taken a significant step forward on this path, resulting in a significant milestone for the industry," said UK Conservative peer Greg Barker (Lord Barker of Battle), executive chairman of En+ and former UK energy and climate change minister.

He went on to say, "Another game-changing benefit of this technique is the release of oxygen throughout the aluminium production process." One inert anode cell can produce as much oxygen as 70 hectares of forest."

Source: www.constructionmanagermagazine.com

Aluminium discs used as cladding on a building

The CCTV headquarters in Beijing

China's Planning Authorities Prohibits "Ugly" Structures

The National Development and Reform Commission (NDRC) of China has recently declared that it will discourage the development of towers taller than 500 metres and prohibit the construction of 'ugly' buildings.

The National Development and Reform Commission (NDRC), the country's primary economic planning authority, stated that its goal was to improve urban planning. It will also discourage the construction of buildings whose engineering and technological sophistication are unjustified.

The decision on height is unlikely to have a significant impact on Chinese construction: the country has 2,395 buildings over 150m tall and 95 buildings over 300m, but according to the Council on Tall Buildings and Urban Habitat, only four of the world's 12 buildings exceeding 500m in 2020 are in Mainland China.

According to Li Luke, a professor of architecture at Tsinghua University, skyscrapers taller than 500 metres are still viable, but every design must be evaluated for cost and safety.

"Both the builders and the consumers should decide if it is worth the cost and risk of constructing a skyscraper," he said.

The Chinese authorities have previously addressed the issue of unsightly buildings, but apparently without success, as evidenced by this announcement of further prohibitions.

It is difficult to define what constitutes as ugliness in a building. According to Global Times, the CCTV headquarters in Beijing, designed by Dutch architect OMA, has been both lauded as a masterpiece and mocked as the 'Big Underpants'.

Chinese social media users frequently upload photographs of their favourite 'ugly' building, arguing about mismatches between form and function, homages of Western or old Chinese architecture, and buildings that simply appear strange.

"The authorities must recognise that there must be a rationale that cannot be disregarded if the general public deems the architecture to be 'ugly'," he stated.

One noteworthy example can be found at an unfinished amusement park in Hebei Province, North China, which is half China's Temple of Heaven and half the US Capitol. Another popular attraction in Chongqing is the well-known 'Flying Kiss'.

Source: www.globalconstructionreview.com

Construction of the Philippines' Longest Bridge is Ready to Begin

The Department of Public Works and Highways (DPWH) of the Government of the Philippines (GOP) has commenced preparations for substructure work on the 3.169 km Panguil Bay Bridge Project.

"The soon-to-be longest bridge in the Philippines will bring about greater connectivity for Filipinos and stimulate inter-island connectivity in Northern Mindanao," said DPWH Secretary Mark A Villar.

Although the bridge building has been hampered by restrictions on the movement of people and products caused by the Covid-19 outbreak, the contractor can now proceed with the delivery of equipment and materials for its foundation works.

The Panguil Bay Bridge, which is scheduled to open in 2023, will extend well beyond the 2.16km San Juanico Bridge, which connects the provinces of Samar and Leyte in the Eastern Visayas area.

Namkwang-Kukdong-Gumwang, a Korean joint venture contractor, has delivered the bridge foundation construction equipment to the project site by vessels from South Korea and Brunei.

Tugboats, revolving cranes, barges, vibro pile hammers, reverse circulation drilling (RCD) machines, and steel casings were among the important bridge equipment that has arrived at Silanga Port in Tangub City, Misamis Occidental. Concrete batch plant, excavators, motor graders, dump trucks, payloaders, and vibratory rollers were among the major land-based equipment that has arrived in Tangub City, Misamis Occidental, and Tubod, Lanao Del Norte.

The overall cost for this mega bridge in Northern Mindanao, which will connect Tangub City and Tubod in approximately seven minutes, is more than US$152 million. GOP will fund more than US$44 million of the total expenditure, while the remaining amount of more than US$107 million would come from a loan agreement between the Korean Export-Import Bank (Korea Eximbank) and GOP. Despite the halt of most works owing to the Covid-19 epidemic, the Panguil Bay Bridge's detailed engineering design was completed in December 2020.

Source: www.worldconstructionnetwork.com

The Panguil Bay Bridge (Photo credit: Lance Asper / Unsplash)

All thumbs up from MMC Gamuda's OSH team

SAFETY PAR EXCELLENCE

In line with its commitment to safeguarding the workforce, MMC Gamuda has gone above and beyond in establishing new operational capabilities to curb the spread of Covid-19 in the worksite and utilising technology to improve project safety. It is now reaping the benefits.

With the highest fatality rate seen in Malaysia compared to other sectors, construction sites are considered high-risk environments that require strict safeguards to ensure the safety of both workers on-site as well as the surrounding public.

In 2019 alone, Occupational Safety and Health Department (DOSH) recorded 144 deaths and 4,863 accidents in the construction sector out of a total of 1,276,400 construction workers, which works out to a fatality rate of 11.28 per every 100,000 workers. As there are countless construction projects currently on-going throughout the country, it is vital that industry players take the necessary steps and precautions to keep both their workers and the public from danger.

Concerned about safety? Take a page or two from MMC Gamuda KVMRT (PDP SSP) Sdn Bhd, the leading industry pioneer in construction safety. MMC Gamuda is the turnkey contractor for the MRT Putrajaya line project, which includes an underground works package as part of the over 50km-long alignment from Sungai Buloh to Putrajaya via Serdang.

> *"We believe that by keeping our construction site secure, we are also keeping the public safe"*

"MMC Gamuda truly believes that our people are our most important asset, and maintaining a healthy and safe work environment has become the Group's primary goal in safeguarding our workforce," said Norazar bin Abdul Rahman, MMC Gamuda's OSH Manager. "Our people include not only staff and workers, but also subcontractors, vendors, and everyone else who is affected by the work we do. We believe that by keeping our construction site secure, we are also keeping the public safe."

Norazar bin Abdul Rahman, MMC Gamuda's OSH Manager.

Utilising Technology to Improve Project Safety

Tunnelling is painstaking work often performed under arduous and confined conditions, with an average of 4 to 5 meters excavated per day. Notably, the Sungai Buloh-Serdang-Putrajaya MRT (Line 2) of KVMRT will feature 11 underground stations within a pair of 13.5km-long tunnels, making it Malaysia's longest railway transport tunnel.

Additionally, the city centre's extreme karstic limestone geology poses a high risk of sinkhole incidents during tunnelling activities and threading the tunnels through high-end properties. Thus, MMC Gamuda must adhere to extremely stringent risk management requirements governed by the International Tunnelling Insurance Group through the British Tunnelling Society Risk Management Code of Practice BS6164:2011 and ISO 310.

As an innovative tunnelling contractor with a passion to drive technological advancement through engineering

16,000 tunnel rings have been constructed for the MRT Putrajaya line. Photo credits: MMC Gamuda

excellence, MMC Gamuda has revolutionised tunnelling by introducing the Autonomous Tunnel Boring machine (A-TBM) system to be used in the Klang Valley Mass Rapid Transit construction project in 2019. Developed in-house, A-TBM offers tangible improvements in tunnel construction efficiency, safety, and quality. The Group owns and operates ten TBM units which the A-TBM system was plugged into, each valued at approximately RM40 - RM60 million.

A-TBM improves productivity by optimising each drive to its optimal parameters. Most importantly, it promotes a safer environment for its workers underground. "With a reduced need for intervention works where workers are sometimes subjected to compressed air environment in the tunnel boring machines, we are eliminating the risks of potential mishaps. With better adherence to the design tolerance, we can avoid costly mistakes due to human errors. Safety is further improved by allowing tunnellers to accurately control the face pressure of the TBMs and to adjust parameters at regular intervals, autonomously. Also, accurate face pressure control is important to reduce the risk of sinkholes," Norazar clarified.

"We built our A-TBM system following the invention of the Variable Density TBMs (VD-TBMs) for the MRT Putrajaya Line, to further advance the tunnelling performance of the Group. The MRT Putrajaya Line is a perfect testing ground for our A-TBM system as the underground alignment traverses through existing infrastructures and highly variable geological conditions, with over a dozen interfaces between the geologies. Our system has been deployed across all these geologies which has provided a wealth of information to optimise the behaviour of our system," said Norazar.

> *"With a reduced need for intervention works where workers are sometimes subjected to compressed air environment in the tunnel boring machines, we are eliminating the risks of potential mishaps."*

The MRT project has numerous Centralised Labour Quarters (CLQs) that were drastically revamped to accommodate Covid-19 prevention SOPs. Photo credits: MMC Gamuda

The MMC Gamuda KVMRT Training Centre

> *"We want to train our people so that they have the necessary skills and knowledge to keep everyone safe at work."*

"As part of the tunnel boring machine's safety requirements, an underground refuge chamber is provided as a safe place for workers in the event of an emergency. It is fully air-conditioned and the oxygen supply enough for 20 people lasting 24 hours," he added.

Safety & Competency Training is of Paramount Importance

According to Sirajunnisa Mohamed Farook, MMC Gamuda's Head of Safety, Health, and Environment, unskilled workers are one of the major factors behind accidents at project sites. As such, training and development programmes are identified and scheduled for workers to gain the knowledge and skills required to meet their performance and job expectations. "We want to train our people so that they have the necessary skills and knowledge to keep everyone safe at work," she said.

To this end, MMC Gamuda has designed numerous new safety schemes customised to the work packages, such as the Gamuda Construction Safety Passport (GCSP), the Project Delivery Partner's (PDP) SHE Passport Scheme, and the Underground Construction Skills Certification Scheme (CSCS) in all of their projects. "CIDB has recognised our GCSP as being similar to their Green Card Programme, while the PDP's SHE Passport Scheme and CSCS are credential card schemes that ensure all staff and workers on-site have the requisite training and competency certificates for the type of work they do," she said. "In doing so, we ultimately minimised the risks associated with incompetency for high-risk construction operations."

Sirajunnisa Mohamed Farook, MMC Gamuda's Head of Safety, Health, and Environment

CSCS tracks individual professional development through logbook records and periodic on-the-job assessment using a system of seven colour cards based on hierarchy, namely, black, gold, white, blue, red, green and yellow for site visitors. These skill cards include a range of specialist subjects, such as scaffolding, heavy lifting, electricals and temporary works. "We have availed a touch screen test centre to support everyone working on the project in passing a trade-specific examination," she added.

MMC Gamuda has full fire and rescue capabilities

Going Above & Beyond to Combat Covid-19

With Covid-19 wreaking havoc on our national front since early 2020 and showing no signs of stopping, construction industry players face an uphill battle in combating the virus. At the time of print, MMC Gamuda is the first and only contractor to have introduced mandatory fortnightly Covid-19 screening for its workers, using the polymerase chain reaction (PCR) process.

"We began routine mass screening in May of last year with RTK antibody test kits using blood samples and antigen rapid test kits (RTK-Ag) using nasopharyngeal swab samples, and later on, upgraded to the PCR system, which is regarded as the gold standard for Covid-19 testing," said Sirajunnisa.

Due to the massive amount of daily tests, the Group decided to establish its very own PCR lab last November, with the ability to process 4,000 samples a day. "This is critical to serving our entire workforce of approximately 16,000 employees and workers," Sirajunnisa said.

> *"From RTK antibody test kits and RTK-Ag, we upgraded to the PCR system, which is regarded as the gold standard for Covid-19 testing."*

So committed is the Group to safeguard the health of its workers that entry to the office buildings, training centre and centralised labour quarters (CLQs) is only allowed for workers who have been recently tested negative for the virus. "This is achieved by assigning a unique QR code to each personnel that monitors their testing records and regulates their access into our work premises or CLQs," she stated.

These measures are in addition to the standard temperature scanning and hand sanitisation procedures at all access points. "We also segregate workers from different shifts and others with similar skill sets or specialisations, via the zoning method, to reduce the risk of the whole team being ill or being quarantined at the same time. People who work together, stay together in their own bubble."

Covid-19 Testing Laboratory. Photo credits: MMC Gamuda

Last year, MMC Gamuda built a new Covid-resilient CLQ within three months. The self-contained facility has all of the requisite amenities to reduce the need for movement. They also acted quickly to tighten all perimeters with restricted access and segregation at all other existing CLQs, which house more than 5,000 employees across Klang Valley.

"Workers only use our dedicated transportation to travel between their worksites and CLQs. Each residential block within the CLQ is separated by physical "firewalls" that prevent cross-infection between residents of different blocks," Sirajunnisa explained. She went on to say that while some may view these CLQ measures as being overly stringent, it is essential for the safety of all. The workers residing at the CLQ are now no longer a threat in terms of spreading the virus, rather, it is outsiders who pose a greater risk of infecting the rest.

There are also dedicated centralised quarantine quarter's blocks within each CLQ where those infected can be safely separated from the rest. "We have doctors on hand at all times to track them as well as the people who have direct contact with them. We also have prepared meals for them to eat in their rooms," said Sirajunnisa. Impressed by the SOPs and high health and hygiene standards of the CLQs, the Ministry of Health approved of the Group's handling of internal asymptomatic and positive patients, thus reducing pressure on the public healthcare system.

"We have been reaping the benefits of our consistent strategy in combating the virus. When we first switched from the highly variable RTK-Ag testing to PCR, we saw an abrupt increase of hundreds of cases in a day. This caught us by surprise since they were mostly asymptomatic. Since the establishment of our PCR lab and bi-weekly testing, in addition to the strict SOPs imposed, the number of daily new cases has been further reduced. To date, we have conducted around 250,000 PCR tests," Sirajunnisa explained.

> *"Since the establishment of our PCR lab and bi-weekly testing, in addition to the strict SOPs imposed, the number of daily new cases has been further reduced."*

A Stellar Track Record in Safety

While the project has demonstrated a stellar track record of safety performance unlike any seen in other mega projects, the works package contractor of the Underground section, MMC Gamuda KVMRT (T) Sdn. Bhd., or MGKT in short, in particular has upped the ante by voluntarily participating in the internationally competitive British Safety Council (BSC) Five-Star Occupational Health and Safety audit since 2014. Both to benchmark growth as well as in appreciation of the added risks of underground construction, MGKT has shown its grit and dedication to continuous growth by maintaining a five-star rating three years in a row since 2018.

In 2019, BSC bestowed its highest award, the Sword of Honour, for the first time to MGKT after it qualified for the Sword of Honour selection rounds with a five-star rating in its 2018 Five Star Occupational Health and Safety Audit. MGKT went on to maintain its rating and has yet again won the 2020 Sword of Honour award.

The BSC audit, typically lasting a year, involves a thorough and quantifiable review of its workplace

A tunnel boring machine being assembled at an underground station's launch shaft. Tunnelling works couldn't cease during the first Movement Control Order, hence work went on carefully with additional Covid-19 prevention SOPs and safety measures in place. Photo credits: MMC Gamuda

health and safety policies, procedures, and practices. It also assessed the organisation's performance against key health and safety management best practise metrics through a thorough analysis of over 60 component elements. Notably, the scope of the 2019 audit included mental health and building information management (BIM).

MGKT is fully cognisant that workload, long hours, prolonged time away from home, work climate, and organisational variables all can negatively affect their workers' well-being.

"As an employer of workers from all walks of life, we understand the importance of maintaining a secure and stable workplace that promotes our workers' physical and emotional well-being. Mental health is a growing concern, and we plan to provide an avenue for employees to obtain confidential mental health support," said Sirajunnisa.

A Continuous Effort

Norazar stated that no major safety undertaking would be possible unless it is a collaborative effort. "At MMC Gamuda, safety is everyone's responsibility, from the top management to the workers on project sites. We instil in our workers a self-regulating mindset by empowering them to take personal responsibility for all safety and health issues."

He also emphasised that there are dedicated OSH Teams at both the headquarters and project sites and that they conduct OSH-related training regularly. "We continuously track our OSH practice via routine daily and weekly inspections, as well as Safety and Health Committee inspections and monthly inspections by Safety, Health and Environment (SHE) staff at the project sites. Additionally, we have internal and external audits performed by certification bodies .

"We use the lessons learned from incidents involving high-risk activities to close the gaps in our health and safety practices. For instance, we applied the lessons learned in MRT Kajang line to the MRT Putrajaya line project, and saw an improvement of about 60% on health and safety issues and improvement in SHE standards and practices," said Sirajunnisa.

"Safety is not a one-time event. To stay ahead of the curve and keep the projects going, our control protocols must be reviewed, refined, and enforced regularly. With our stringent safety measures put in place, work can be completed on schedule while ensuring the health and safety of all," Norazar concluded.

By Asima Architects Sdn. Bhd.

Meet Encore Melaka, the iconic performing arts theatre in Malaysia. The parabolic LED panels light up the otherwise calm and pristine white façade.

ENCORE MELAKA: THE ICONIC JEWEL ON THE STRAITS OF MELAKA

Like a sci-fi voyager ship, Encore Melaka sits calmly along the coast of Melaka, carrying within its belly, a 600-year story of Melaka.

Encore Melaka is home to the Impression and Encore series originating in China. Founded by leading Chinese directors Zhang YiMou, Wang ChaoGe and Fan Yue, these live musical performances located in various location throughout China, are elaborately choreographed and accompanied by stunning audio-visual effects highlighting locale's rich cultural heritage. Encore Melaka is the first of this performance series based outside of China.

Encore Melaka sits majestically along the Straits of Melaka in a planned 15-hectare mix development, Impression City. Boasting a 2,009 pax 360-degree rotating audience seat and 4 mesmerising performance stage, the theatre opened its doors to the public in July 2018.

The client approached us to come up with some concept proposals for an integrated masterplan in Melaka. He aspired to build and create a platform to showcase the cultural richness of his home state, Melaka. The idea was also to provide a catalyst and attraction for the intended development. As part of our masterplan proposal, we included a few images of Impression West Lake. After our initial presentation, we didn't hear back from the client and thought that it was just another project that had perished in the valley of proposals' deaths.

About a year later, the client gave us a call out of the blue and told us he had acquired the rights to produce an Impression and Encore series in Melaka. During the client's visit to China, he had also chanced upon the Impression Series himself and was blown away by its grandeur.

Reflection of Encore Melaka from across the canal

Thus, the search for a site began.

After exploring a few different sites, each with its own potential, one of which was dramatically dismissed by the director herself, Wang ChaoGe, for having no view of the Straits of Melaka, we finally settled onto the theatre's current home in Kota Shahbandar, a reclaimed land with stunning sunsets along the coast of Melaka.

Design Concept

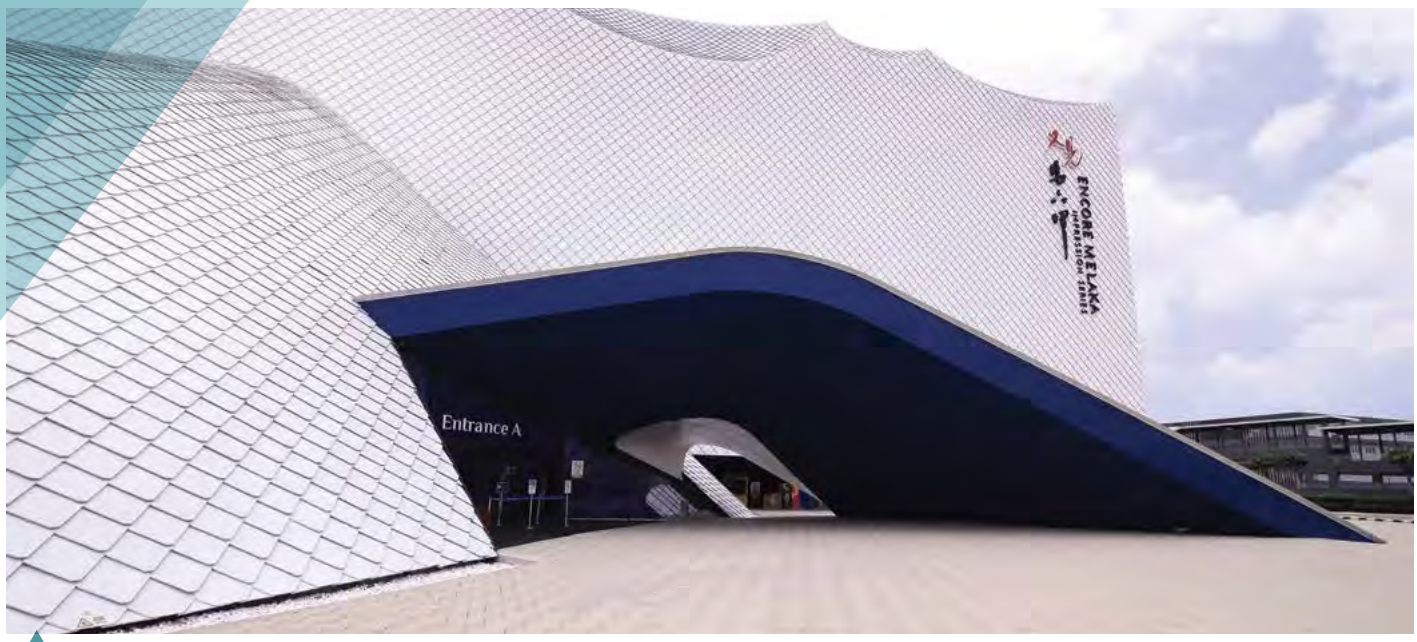
Chinese Architect WangGe from Beijing Institute of Architectural Design (BIAD) was appointed as the Design Architect in 2016, as they had previously worked with the Director on her productions.

The designer's intention was to have an iconic building located next to the Straits of Melaka, as this was an important historical trade route between East and West, and their influence is apparent in the many heritage buildings left in Melaka today. The building also signifies the long trade relationship that Malaysia has had with China since the 1400s.

The external marine blue walls and the contrasting white façade represents one of the main items traded between China and the Malay Peninsular in the 15th century – blue and white porcelain. The white

The theatre's current home has stunning sunset views of the Straits of Melaka

> *"The idea was also to provide a catalyst and attraction for the intended development."*



The white porcelain, which is represented by aluminium composite panels, and the blue accents pay homage to the blue and white porcelain trade between China and the Malay Peninsular in the 15th century

porcelain is represented by the aluminium composite panels, forming a pristine crisp white object by the coast. While the blue accents are evident throughout the building, from the external walls to the interiors.

The attention-grabbing aluminium composite panel façade is cantilevered three meters from the building which creates a protective skin against heavy rain and strong winds from the straits.

With its eye-catching parabolic-curved LED panels punctuated along the upper edges of the white facade, the unexpected dynamic visuals form a pleasant break between the calming white panels.

In summary, the building is akin to a 'painting' of multiple metaphors:

- A Rock that rises above the sea, which is robust and steadfast that can withstand trials and challenges.
- A Vessel or a junk that sailed from China, which is represented in the façade design with the sail like structure. It signifies the dynamics of cultural and trade exchange that is still evident today.
- Ceramic, which is represented as the main façade element as well as the parabolic LED 'ceramic' scales that are projected at the top edge of the façade with changing projections, representing waves and the unpredictable nature of the sea.
- Ocean Waves that capture the relentless spirit of the Chinese traders who crossed the oceans to reach Melaka.

Entrance and Circulation

Audiences enter the theatre through a fluid canopy and pyramid-like structure and take the escalator up to first floor. They will then be greeted by a brilliant blue circular raked seating area.

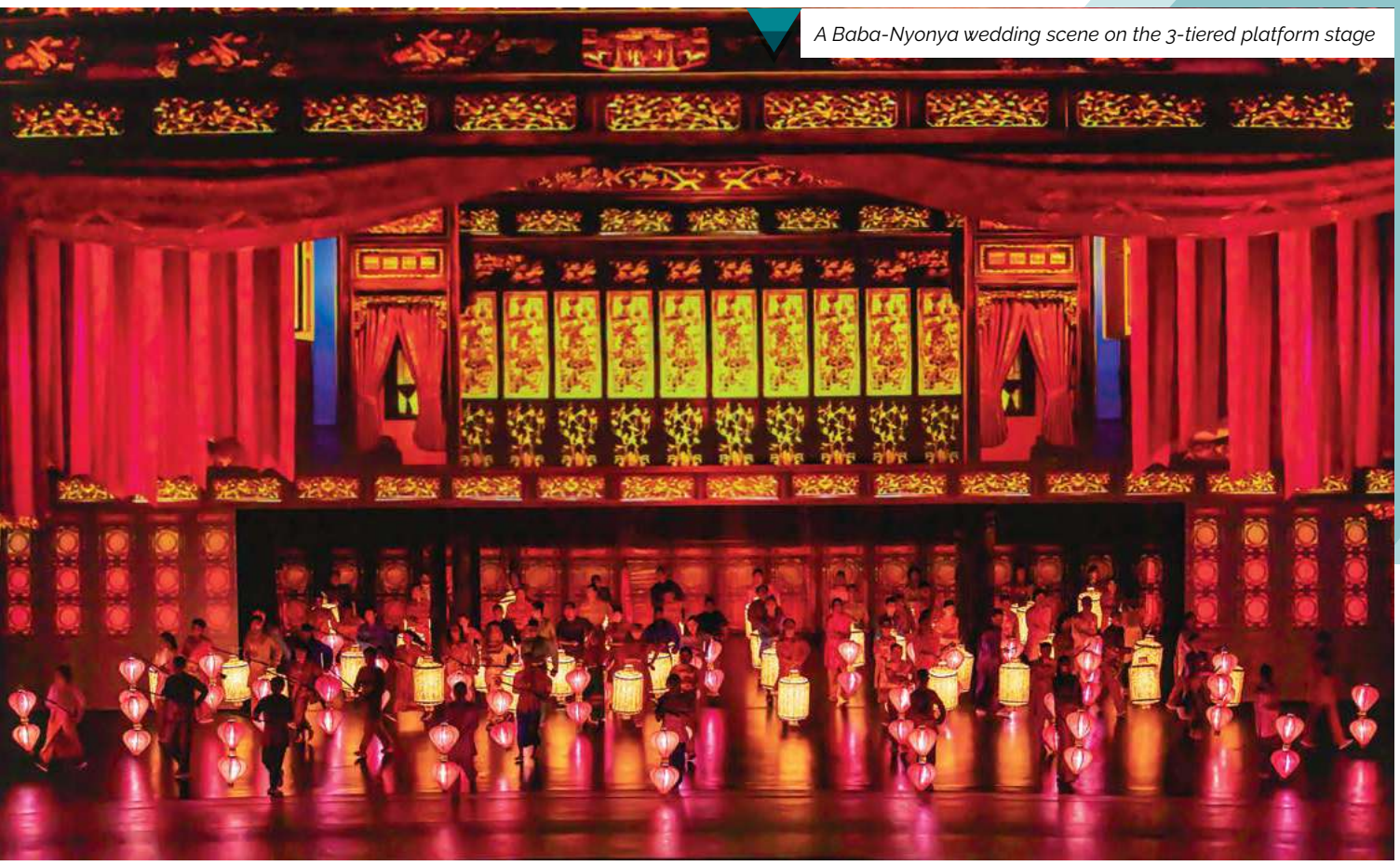
The floor below the performance stage houses the box office, public amenities, administrative office, performers' changing rooms and the mechanical rooms for the performance stages. The wide internal corridors are naturally ventilated with generous openings on all four sides of the building, maximising the constant breeze from the Straits of Melaka.

The performance stages and the rotating audience seating occupy a 3-storey volume within the building. Surrounding this space on the perimeter of the building are three levels of technical rooms and support facilities.

The Theatre – an Immersive Experience

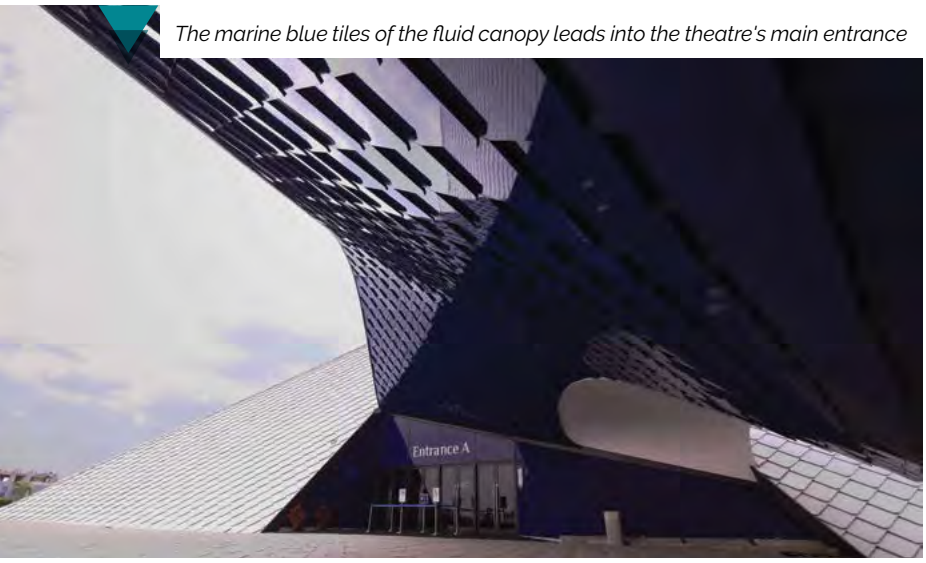
Unlike a conventional proscenium theatre, Encore Melaka's audience seating is located in the middle of the theatre surrounded by four different performance stages (water,

> *"We finally settled onto the theatre's current home in Kota Shahbandar, a reclaimed land with stunning sunsets along the coast of Melaka."*



A Baba-Nyonya wedding scene on the 3-tiered platform stage

The vibrant kampung scene



The marine blue tiles of the fluid canopy leads into the theatre's main entrance

The electric powered 2,009 pax rotating audience seat rotates 360 degrees in both directions

The VIP entrance

kampung scene, 3-tiered platform and a hydraulic platform). The electric powered 2,009 pax rotating audience seat rotates 360 degrees in both directions. Together with the state-of-the-art audio-visual effect, this creates a 75-minute immersive experience for theatre goers.

The 360-degree rotating seat structure was constructed and assembled in China before being disassembled, shipped to Melaka and re-assembled. The structure and mechanism are patented, as the most significant feature of this mammoth contraption is the silence of its mechanism during operation. The rotation is so smooth and subtle that audiences hardly notice the movement except when the scenes on the performance stage change and move past them like a movie reel.

The Catwalk and the Roof – an Artery of Life

Hovering 18 meters above the performance stages and audience seating is a maze of steel trusses and catwalks. Herein lies all the equipment used to create those magical moments on stage – lighting and sound system, mist machine, rain showers and miles and miles of cables. The firefighting water jet spray system also shares the space with the magic makers.

To create a 3-storey obstruction-free volume for the performance spaces, 12 roof trusses sit over the theatre with eight of them spanning 91 meters long and 7.6 meters height at its peak. The installation of these giant trusses was made possible by a 1,250-tonne mobile crane, which required a special working base to be constructed for it to manoeuvre from.

Ancillary Buildings

There are 3 ancillary buildings supporting the operations of the Theatre. The first is an Administrative Building for the management team and also the developer's main office. A kitchen and canteen are located here for the staff and performers. The building also houses a multi-purpose hall and a VIP lounge, with a private road access directly to the VIP entrance of the Theatre, which faces the Straits of Melaka. The second ancillary building is a 78-room hostel for the performers, while the third building is a 3-storey podium car park.

> *"The building also signifies the long trade relationship that Malaysia has had with China since the 1400s."*

PROJECT DETAILS:

Design Commencement: **2012**

Construction Commencement: **December 2016**

Completion: **June 2018**

Construction Cost: **RM200 million**

Site Area: **15.5 acres**

GFA: **42,145 m2**

Theatre Seating Capacity: **2,009 pax**

Client: **PTS Impression Sdn Bhd**

Architect: **Asima Architects Sdn Bhd**

Design/Concept Architect: **Beijing Institute of Architectural Design (Group) Co., Ltd**

C&S Consultant: **TDC Engineering Consultants Sdn Bhd**

M&E Consultant: **EC Engineering Consultancy Sdn Bhd**

Quantity Surveyor: **JUBM Sdn Bhd**

Landscape Architects: **HODA Design Sdn Bhd**

Interior Designer: **Ideas Makeover Sdn Bhd & Ideas Workshop Sdn Bhd**

Main Contractor: **China Construction Yangtze River (M) Sdn Bhd**

A STEP IN THE RIGHT DIRECTION

M. Ramuseren, General Manager of CIDB SHEQ shares his thoughts on the proposed amendments to the Occupational Safety and Health Act 1994 and CIS: Public & Road User Safety

On 2 November 2020, Human Resources Minister Datuk Seri M. Saravanan tabled the Occupational Safety and Health Act 1994 (Amendment) Bill 2020 (OSHA Bill) for a first reading in the Dewan Rakyat.

Among the proposed changes is an increase in the penalty under Section 19 from RM50,000 to RM500,000 for offences such as employers failing to develop safety and health policies.

Additionally, the OSHA Bill seeks to amend section 52 of the OSHA Act by adding a sub-clause stating that any officer or director of a company may be held liable for violations committed by the company.

"The proposed reforms to the Occupational Safety and Health Act 1994 (OSHA 1994) are much welcome and certainly long overdue," said Ir. M. Ramuseren, CIDB Malaysia's General Manager, Safety & Health, Environment and Quality Division (SHEQ). "In fact, there should be stricter laws with deterrent punishment to prevent the death of workers caused by non-compliance with workplace occupational safety and health laws."

He lauded the OSHA Bill for its emphasis on the uniformity, collective duty, and accountability for safety and health among those responsible.

While the introduction of the Occupational Safety and Health Act 1994 (OSHA 1994) resulted in a positive change in general, in recent years, the country has seen an increase in occupational fatalities, especially in the construction industry. As such, Ramuseren hopes that the proposed amendments to OSHA may provide a solution to the issues of health and safety.

"The Malaysian construction industry reported 11.28 fatalities per 100,000 workers in 2019, the highest rate among all industries. In comparison, the United Kingdom and Singapore only reported 1.31 and 0.36 fatalities per 100,000 workers that same year," he stated. "Clearly, we have a long way to go but I believe that the OSHA Bill is a step in the right direction. It will pave the way for the Occupational Safety and Health in Construction Industry (Management) (OSCHIM) guideline to be made mandatory."

"The OSCHIM guideline seeks to create awareness about workplace safety and the responsibilities of all parties involved. At this point in time, the main contractor is held responsible for any unforeseen accidents that occur on-site. By revising OSHA 1994 to include OSCHIM and making it mandatory, contractors, project owners, and project designers will share responsibility for occupational safety. Each party is responsible for ensuring that the workplace is safe for workers and others. Worksite safety will definitely improve if everyone does their part," Ramuseren stated.

Towards Public & Road User Safety

Ramuseren is also part of the CIDB team that is tasked to spearhead the development of the Construction Industry Standard (CIS): Public & Road User Safety - Construction Works Adjacent to and Above Roadways. The team had input from the following stakeholders:

- Association of Consulting Engineers Malaysia (ACEM) Construction Industry Development Board,
- Department of Occupational Safety and Health Malaysia (DOSH)
- Institute of Engineers Malaysia (IEM)
- Institut Penyelidikan Keselamatan Jalan Raya (MIROS) Jabatan Kerja Raya (JKR)
- Lembaga Lebuhraya Malaysia (LLM)
- Mass Rapid Transit (MRT)
- Master Builders Association Malaysia (MBAM)
- Real Estate & Housing Developers' Association (REHDA)
- Universiti Teknologi MARA (UiTM)

It was developed to facilitate contractors who are planning to carry out construction activities adjacent to or above existing roadways to prevent incidents or accidents to road users and public due to construction activities. Checklists have been introduced to assist the contractors to take precautionary measures prior to construction activities, during work execution and upon completion of work.

"The document was opened to the public for comment for a period of 34 days from April to May as is the normal practice. This gives the opportunity for government bodies, academics, and industry to give their input for draft standards that are being developed or updated," Ramuseren stated.

"There have been too many tragic incidents that happen within a short spate of time and even on the same site. With the publication of CIS: Public & Road User Safety - Construction Works Adjacent To And Above Roadways, we hope to prevent potential accidents involving public and road users due to construction works adjacent to and above existing roadways and public amenities," Ramuseren concluded.

Ir. M. Ramuseren, CIDB Malaysia's General Manager, Safety & Health, Environment and Quality Division (SHEQ)

HOW DO YOU MANAGE, LEGALLY SPEAKING?



By Janice Tay (Partner), Ooi Chih-wen (Associate) and Micheal Tong (Litigation Assistant Manager) from Wong & Partners

The construction industry was badly hit by Covid-19 in 2020 and remains affected to date. According to YBhg. Datuk Ir. Ahmad 'Asri Abdul Hamid, the chief executive of CIDB, the construction industry experienced losses up to RM 11.6 billion during the implementation of the first Movement Control Order (MCO) from 18 March to 14 April 2020.[1] The losses was largely derived from the value of salaries, building materials, machinery rentals, project management and profit.

The Malaysian Government, particularly the Ministry of Health, has worked to provide guidelines and standard operating procedures to ensure the safety of industry workers. Nonetheless and despite adhering to governmental guidelines, the industry is marred by regular outbreaks at construction sites and fabrication centres causing disruption to the progress of work, supply chains, provision of materials and manpower, resulting in increased costs and expenses for all parties. As an example, back in September 2020, it was reported by New Straits Times and CIDB that 149 construction sites have not resumed operations, despite the lifting of the MCO and 45 construction sites were unable to do so because of financial issues.[2] Contractors continue to struggle to strike a balance between the need to progress and keep up with work and the necessary compliance with the MCO as non-compliance will inevitably lead to hefty fines and site closures.[3]

This article aims to apprise construction industry players of the developments so far and the legal measures that may be undertaken to protect themselves.

"Contractors continue to struggle to strike a balance between the need to progress and keep up with work and the necessary compliance with the MCO as non-compliance will inevitably lead to hefty fines and site closures."

Three (3) key things you need to know

1. Know your contract

It is crucial for parties to understand and fully appreciate their obligations, rights and remedies under a contract given that "the primary duty of a court of law is to enforce a promise which the parties have made and to uphold the sanctity of contracts".[4]

Based on our experience, the outbreak of Covid-19 revealed gaps and loopholes in contracts entered into in dealing with Covid-19 outbreaks on-site or related governmental measures such as the MCO.

The most frequently discussed issues since the outbreak of Covid-19 which persist to date, revolve around time and costs. The relevant clauses for consideration would pertain to extension of time (EOT), loss and expense (L&E), force majeure, possible acceleration costs, price fluctuations and payment. As an example and in relation to EOT, our previous analysis shows that contractors may be entitled to rely on certain events such as force majeure and suspension of works by statutory authority under Clause 23.8 of PAM 2018 to claim for EOT.[5]

Parties who are currently negotiating their contracts should ensure that Covid-19 outbreaks, disruptions and related events have been built in and/or have been considered.

2. Know your case and the current developments in law

Many industry players were efficient and active during the downtime in 2020, using this period as a window to carry out the assessments of contracts, claims, losses and importantly, pursue settlement discussions to resolve and mitigate losses and to avoid litigation. This is particularly important in view of the forthcoming expiry of the Temporary Measures for Reducing the Impact of Coronavirus Disease 2019 (Covid-19) Act 2020 (Covid Act) on 30 June 2021[6] which may attract enforcement of suspended rights and claims for breaches/defaults of contract. It may be an opportune time to gear up one's claims and/or defence or to engage in settlement discussions to prepare for the worst.

"It may be an opportune time to gear up one's claims and/or defence or to engage in settlement discussions to prepare for the worst. This includes identifying the possible claims and/or defences and keeping complete documentation."

This includes identifying the possible claims and/or defences and keeping complete documentation.

This will also include identifying how the Covid-Act and surrounding developing case laws on the Covid Act, EOT, force majeure, variations, etc., may assist you in your dispute.

The main purpose of the Covid Act is to provide temporary relief to parties who are unable to perform their contractual obligations and to prevent innocent parties from exercising their rights under the contract for Covid-19 related breaches under Section 7 of the Covid Act. However, parties relying on Section 7 must be able to show and prove that the defaults are caused by the measures prescribed, made or taken under the Prevention and Control of Infectious Diseases Act 1988 such as the MCO. In addition to the protection granted to defaulting parties, the Covid Act introduced certain modifications to the Malaysian legislation with regard to the extension of limitation periods, increase of insolvency threshold and protection to developers against claims for liquidated damages. The Covid Act also provides that any dispute on the inability of a party to perform any contractual obligations arising from Covid-19 may be settled by mediation, albeit being entirely voluntary in nature.

At the time of writing, there has been only one reported High Court case being SN Akmida Holdings Sdn Bhd v MTD Construction Sdn Bhd [2020] MLJU 2038 which addresses the application and/or reliance on Covid-19 related events in relation to an application to injunct a demand on a performance bond. The Plaintiff in this case argued that certain Covid-19 related governmental measures such as the MCO and mandatory suspension of construction works prevented it from performing its works and therefore the Defendant was not entitled to demand the performance bond. The High Court eventually rejected this argument as it found that there was no causation between the Plaintiff's non-performance and Covid, i.e., the Plaintiff's non-performance had occurred in January 2020, prior to the outbreak of Covid-19 in Malaysia and any relevant governmental measures to battle the Covid-19 pandemic.

Mediation has been lauded by the industry players in attempts to settle disputes that have arisen

3. Know how, when and where to enforce your rights

Generally, there are three ways of enforcing rights, (1) court litigation; (2) arbitration and (3) statutory adjudication pursuant to the Construction Industry Payment and Adjudication Act 2012. Parties may also consider alternate dispute resolutions (ADR) such as mediation and dispute managers / dispute resolution boards (DAB). Each process has its own benefits and considerations, and the key features are summarised below.

Shortly after the Covid-19 pandemic hit Malaysian shores, the industry observed a stagnation in arbitration and adjudication. This was partly due to governmental measures such as the MCO which resulted in the closure of courts and suspension of works at construction site, and partly, the passing of the then-AIAC's director which effectively meant that there was no appointing authority for arbitrations and adjudications. This has led to many cases being filed in the courts. In December 2020, a new Director of AIAC was appointed. Following this appointment, AIAC has been working tirelessly to clear the 9 months' worth of backlog of new arbitrations and adjudications registrations. To this end, there has been a significant uptake in adjudication as a means to expeditiously recover unpaid monies for work done. Mediation has also been lauded by the industry players in attempts to settle disputes that have arisen.

Table 1 sets out the nature and key features for the various dispute resolution processes.

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[1] *https://archidex.com.my/archive/2020/11/26/archidex-conversation-with-datuk-ir-ahmad-asri-abdul-hamid-cidb/*

[2] *https://www.nst.com.my/news/nation/2020/09/626530/malaysias-construction-industry-suffers-record-decline*

[3] *https://www.theedgemarkets.com/article/cidb-orders-15-construction-sites-close-noncompliance-sop-%E2%80%94-fadillah*

[4] *New Zealand Insurance Co Ltd v Ong Choon Lin (T/A Syarikat Federal Motor Trading) [1992] 1 MLJ 185*

[5] *https://www.wongpartners.com/-/media/minisites/wongpartners/files/publications/2020/03/lockdown-on-construction-projects-where-is-my-time-and-money.pdf*

[6] *http://www.pmc19.gov.my/pua_20210319_PUA121.pdf*

[7] *The introduction of the Covid Act also introduced mediation as an avenue for parties to resolve dispute on parties' inability to perform contractual obligation due to Covid-19 related governmental measures. This mediation will be administered under a special Covid-19 Mediation Centre set up by the Prime Minister's Office however is only available for a fixed category of parties such as individuals from the B40 and M40 categories, and micro and small scale enterprises. https://insightplus.bakermckenzie.com/bm/resilience-recovery-renewal/malaysia-covid-19-bill-passed-and-mediation-for-covid-19-related-contractual-disputes*

	Adjudication	Court	Arbitration	Mediation	Dispute managers / dispute resolution boards (DAB)
Claimant	Can be initiated by the "Unpaid party" only.	Any party with a claim.	Any party with a claim.	Any party with a claim.	Any party with a claim.
Timing	Estimated 3 to 4 months	Estimated 1 to 2 years, nb* appeals	Estimated 1 to 2 years, nb* challenges	Estimated 1 to 2 months	Estimated 3 to 4 months
Costs	Limited to scale fees or a higher fee scale depending on parties' written agreement	Higher compared to the other dispute resolution forums.		Subject to agreement, nb* low cost mediation[7]	Dependent on parties' agreement and the individual in question
Process	Fixed timeline under CIPAA unless otherwise agreed. Generally documents only, parties may request for hearing.	Includes the filing of evidence and witness examination. More flexibility accorded in arbitration without strict evidentiary rules.		Flexible timeline. Generally limited documents only and discussions between parties facilitated by mediator	Fixed timeline under contract unless otherwise agreed. Generally documents only, parties may request for hearing.
Decision Maker	Adjudicator chosen by parties or appointed by AIAC. May be of a different background.	Judge (legal background)	Arbitrator chosen by parties or appointed by institution. May be of a different background.	Mediator chosen by parties or appointed by the relevant institution.	Follow contract or chosen by parties.
Decision / award	Fixed timeline under CIPAA for Adjudicator to deliver decision.	No fixed timeline. Arbitration rules may specify when an arbitrator is to issue an award.		Settlement will be reached during the mediation session.	Fixed timeline under the contract or to be agreed between parties.
Appeal	No rights to appeal. May only challenge the decision on limited grounds such as (i) breach of natural justice or (ii) fraud.	Able to appeal (depending on subject matter)	May only challenge the award on limited grounds such as (i) fraud by the arbitrator or (ii) arbitrator was unfair to losing party in the proceedings.	-	Usually no right to appeal. Parties may resort to court litigation / arbitration to resolve the dispute.

Table 1
**nb. : nota bene (Latin) / note well (English)*

Conclusion

In summary, there is no better timing than the present for industry players to review and revisit their contract terms, understand the different dispute resolution forums and the suitability to the dispute at hand, and comprehensively prepare its evidence.

All parties affected are encouraged to seek advice (be it legal or otherwise) on the remedies available and to carry out an assessment of their entitlement/rights in light of Covid-19 and the eventual expiry of the Covid Act.

About Wong & Partners

Wong & Partners, a member firm of Baker McKenzie International, is a Malaysian law firm that uniquely combines its rich local knowledge with broad global capabilities. Since its establishment in 1998, Wong & Partners has grown steadily and now consists of 22 partners and more than 50 associates. The Firm's lawyers are able to deliver comprehensive and integrated advice to clients and are trusted by respected domestic and multinational corporations for their needs in Malaysia and throughout Asia.

MCO AND ITS IMPACT ON THE CONSTRUCTION INDUSTRY

By Datuk Ir. Ahmad 'Asri Abdul Hamid, Ahmad Farrin Mokhtar and Che Saliza Che Soh

The Malaysian construction industry is a key economic engine for the overall economy. It forms a significant component of the Malaysian Gross Domestic Product (GDP), registered an annual growth rate of 7.9% from 2010 to 2016. Presently the construction industry contributes 4% to the GDP. The industry demonstrates a strong correlation with economic development, with the construction share of GDP positively correlated with GDP per capita.

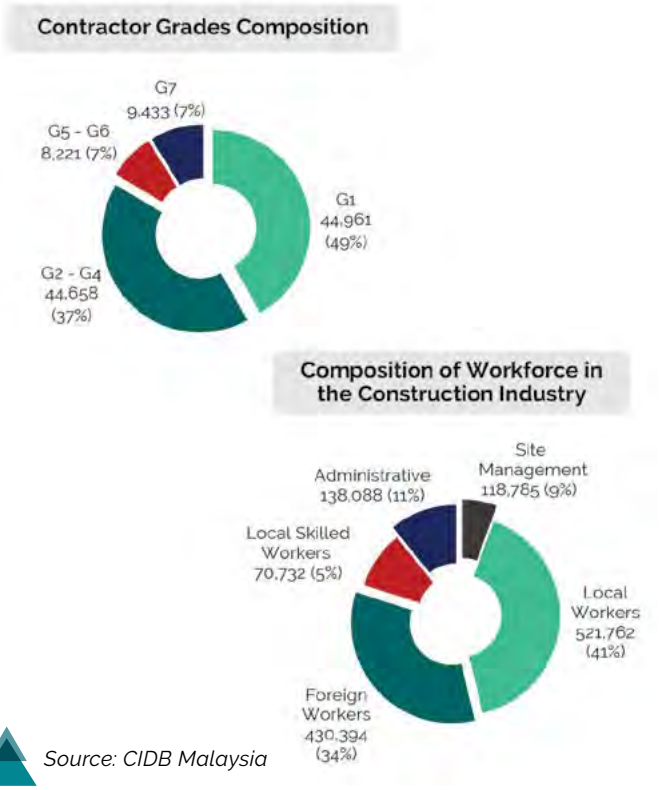
The construction industry is not limited to the construction of buildings as misconstrued by some. It involves the building of many structures such as social amenities, railways, oil and gas facilities, power plants, roads, highways and bridges to name a few. The industry has a 2.03 multiplier effect, supporting around 196 industries and consuming 15% of the total manufacturing output. It provides great support to the economy by having strong forward and backward linkages with other sectors of the economy mainly in manufacturing, services, agriculture and also mining and quarrying.

Given its size, the industry is a large consumer of both goods and services, particularly in the manufacturing sector, including significant quantities of basic metals, ceramics, cement and other building materials. CIDB has to this date registered 330 manufacturers of which 39% are steel manufacturers, 16% are ready-mixed concrete producers, 14% are precast concrete suppliers, 9% are glass distributors, 6% are cement supplier and 16% consist of other types of materials. The construction industry is also a large consumer of higher value-added equipment and machinery. Furthermore, it is also a key consumer for knowledge-driven consultancy and engineering. In total, 4,670 professional firms are registered with their respective Professional Boards of which 56% are engineering firms, 36% are architectural firms and the remaining 8% are quantity surveying firms.

The construction industry also presents significant employment opportunities. It is Malaysia's fourth-largest employer, employing approximately 1.28 million registered workers, representing 8% of the total national workforce distribution. Almost 75% of the registered employees in the construction industry are Malaysians. The local workforce contributes to many crucial areas of the organisation, predominantly administration, project management and skilled personnel services.

To date, the total number of construction companies registered with CIDB is 123,419 companies. Out of this, G1 contractors are the largest group with 60,240 companies, representing 49% of the total number of registered contractors. This is then followed by the G2 to G4 contractors which represent 37%, 7% by the G5 & G6 contractors, while the G7 contractors form the remaining 7%. This indicates that the construction industry is dominated by small and medium enterprises (SMEs) compared to larger corporations.

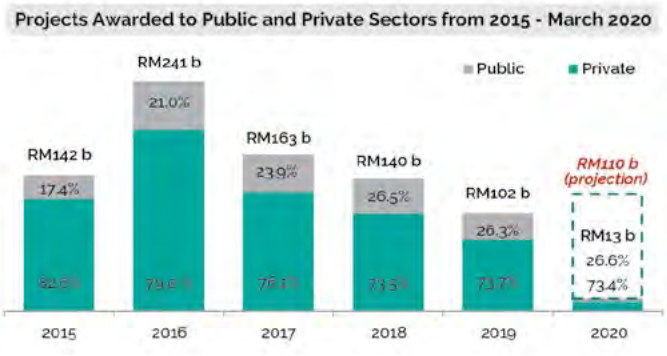
Since the construction industry is relatively correlated with the nation's manufacturing and services sectors, there is major involvement of SMEs in this industry. In general, SME is defined as small to medium-sized companies with no more than 50 full-time employees and with an annual sales turnover not exceeding RM5 million. For CIDB, the SMEs are categorised according to the size of the company's capital and project value not exceeding RM5 million. G1-graded companies are those with the smallest capital size and project value while G5-graded companies are those with the largest capital and project value. SMEs occupy 89% of the construction industry and are involved in many activities in the value chain of construction.



Source: CIDB Malaysia

Situational Analysis

The construction volume is large but has been on the declining trend even before the Movement Control Order (MCO) was enforced on 18 March 2020. The value of projects awarded in 2016 was RM241 Billion whereas the value in 2017 was reduced to RM163 Billion. The same trend followed with only RM140 Billion worth of projects recorded in 2018, RM102 Billion projects in 2019 and only RM13 Billion projects reported in 2020 up to March. Based on these statistics, it is clear that the value of works for the construction industry has continuously declined since 2016.

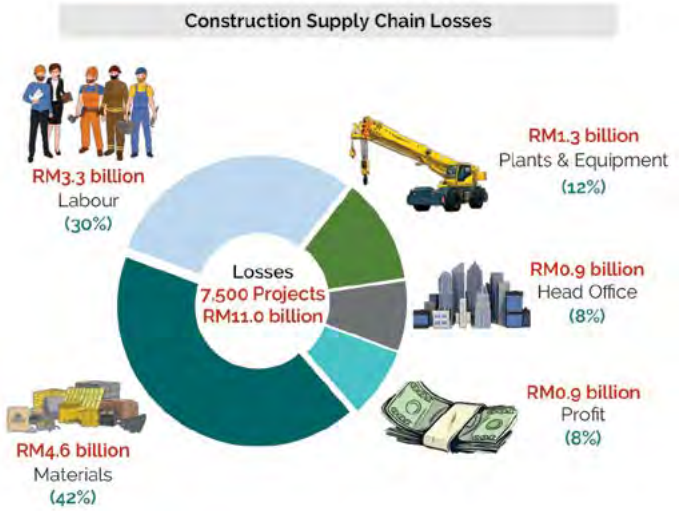


Source: CIDB Malaysia (2015 to 30 March 2020)

The decline was been made worse due to the enforced MCO as a result of the pandemic situation. The value of projects implemented in December 2019 was RM9 billion but was reduced to RM7 billion by January 2020, a 20% reduction compared to the month before. In March 2020, the value of projects was at RM2 billion compared to RM4 billion in February 2020, which was a 50% reduction in the value of projects implemented. The huge reduction is the result of the enforced MCO where up to 90% of construction projects were not allowed to operate as well as a number of new projects cannot be physically implemented on site.

Source: CIDB Malaysia (Dec 2019 to 30 March 2020)

The enforced MCO has resulted in the construction industry suffering an estimated loss of RM11.0 billion per month due to the halting of 7,500 ongoing projects. Thirty per cent of the losses were due to unpaid wages amounting to RM3.3 billion, 42% of unused materials amounting to RM4.6 billion, 12% of idling plants and equipment amounting to RM1.3 billion, 8% of head office overhead amounting to RM0.9 billion as well losses on profit at 8% amounting to RM 0.9 billion.



Source: CIDB Malaysia

The huge losses suffered by the industry will have a negative impact on the economy if no containment measures are implemented.

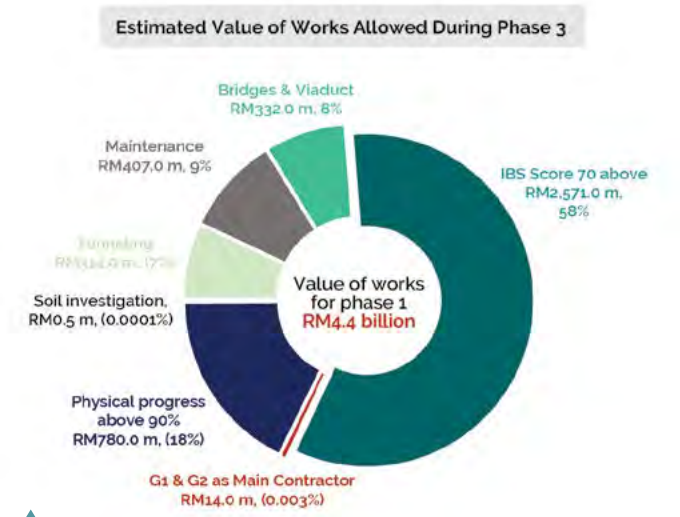
In view of this, the Government decided that a few of the construction works can be allowed to continue to operate to mitigate the losses as well as to partly rejuvenate the economy with the following considerations:

i. Safeguarding the safety of the public;
ii. Limiting the number of workers at construction sites;
iii. Ensuring works to be opened in stages so that there will not be a surge in demand for resources (i.e., materials and workers).

Based on the announcement made on 10 April 2020 by YB Datuk Seri Azmin Haji Ali, the Senior Minister for Trade and Industry, the following are the type of works that are allowed to operate during the MCO:

i. Works under G1 and G2 as main contractors;
ii. Ensure nice alignment of the numbered list
iii. Tunnelling;
iv. Maintenance;
v. Slope Works;
vi. Bridges and Viaducts;
vii. Soil Investigation;
viii. Building Projects with 70 IBS Score;
ix. Projects that are equipped with workers accommodation facilities such as Centralised Labour Quarters (CLQ) or Workers Camp;
x. Emergency Works as stipulated in the contract;
xi. Maintenance and cleaning work to avoid mosquitoes and pests;
xii. Works that might endanger the public if not continued;
xiii. All professional services inclusive of (but not limited to) Architectural, Engineering, Town Planning, Land Surveying, Quantity Surveying, Project Management, Facilities Management, etc.

The opening up of these works in stages have vast consequences on the construction industry. It is estimated that RM.4.4 billion worth of projects will be involved and this, in turn, will help to reduce the losses of the industry to RM6.6 billion. Such a huge impact will indeed bring positive growth to the economy at large.



Source: CIDB Malaysia

Mitigation Strategy

For the construction industry to survive, sustain and rebound from this pandemic event, several mitigation strategies are required to be implemented urgently. Resources such as workers and materials as well issues on cash flow and contracts need to be addressed immediately. Several key components have been identified to assist and support the construction-related companies in this challenging economic environment such as:

i. Cash Flow Issue

a) Maintaining current credit facilities offered by banks so as not to affect the construction-related company's balance sheet and cash flow. It will give the companies some breathing space to operate during this trying time and help to partly solve their cash flow issue.

b) The government can lend its hand to ease the cash flow problems faced by construction-related companies by reducing, waiving or deferring statutory fees charged to projects. The statutory fees charged to a project are usually about 10% of the development cost. Such a huge amount will indeed be a great relief to construction-related companies in particular developers if the proposal to reduce, waive or defer the statutory fees is accepted by the government.

c) Banks to provide additional bridging loans especially to developers at a low interest rate so that the developers will have extra funds to finance their projects.

d) The government should consider the exemption of digital tax and provide more incentives to companies that migrate to digital solutions to overcome the reliance on foreign labour and reduce the migration costs to digital solutions.

e) The government, as well as private clients, need to expedite any payment due to ease the cash flow problem currently faced not only by contractors but also by consultants and suppliers.

f) The government should also consider releasing the retention fund in projects immediately upon full compliance by contractors.

ii. Contractual Issue

a) There is a need for the government to intervene and assist in the Extension of Time (EOT) issue for projects affected by the MCO. Many contractors as well as developers may face litigation due to delays in projects as a result of the MCO. This might give rise in millions of losses to the industry.

iii. Materials and Labour Issues

a) All projects, whether new or existing, need to be implemented in stages or phases so that there will not be a surge in demand for materials and workers.

b) The government must also take steps to prevent certain companies from monopolising the supply of materials and implement mechanisms to control the price of materials.

c) It is crucial for companies to retain their workers during this pandemic situation. The government needs to provide support in reducing the overhead costs by providing higher subsidies for wages, thus allowing companies to retain their workers.

d) Retaining the workers will allow the companies to operate at a normal pace once the MCO is lifted.

iv. Housing Sector Issues

a) The housing sector plays an important part in the economy. Hence, there is a need to rejuvenate the housing sector to boost the economy:

b) Lembaga Pembiayaan Perumahan Sektor Awam (LPPSA) must be allowed to operate during the MCO so that housing loans can be processed and disbursed. This will indeed help the small-time developers in particular, as they are dependent on such loan disbursements to finance their projects.

c) The launch Home Ownership Campaign (HOC) for 2020 with the same benefits granted in HOC 2019 to be retained including the minimum 10% discount from developers to encourage more people to take up home ownership.

d) The Real Property Gain Tax (RPGT) to be exempted if the property is disposed of on the 6th year onwards as this move will boost the housing sector by strengthening demand.

e) Extending the loan repayment period up to 40 years or age 70, whichever is shorter, at reasonable interest rates for houses priced RM300,000 and above. The longer loan period will lessen the buyers' burden as it gives an opportunity for a higher margin of financing and lower monthly repayment amount.

f) The interest for housing loan on houses priced RM500,000 and below to be kept at 3.5%.

g) Allowing the reinstatement of Developers' Interest Bearing Scheme (DIBS) whereby the developers will include the interest of the housing loan disbursed during the construction period in the house price.

h) Removal of Loan to Value (LTV) ratio for housing loans of the property onwards as this will help to spur the growth and demand for housing.

Immediate Reform Measures

The difficulties faced by the construction industry now due to the MCO are unprecedented and will continue even after the MCO is lifted. Immediate measures to be put in place to help the construction industry rebound are as follows:

i. The need to adopt digital construction, such as Building Information Modelling (BIM), to make the industry more efficient and resilient in facing economic difficulties, which in return will lead to the reduction of foreign workers.

ii. Increase the use of the Industrialised Building System (IBS) in the Malaysian construction industry. IBS has been shown to improve construction sustainability. However, there have been some challenges in implementing this scheme, such as standardisation, team disintegration, and a lack of expertise and knowledge on IBS. Modular coordination must be incorporated to resolve these obstacles. As a result, components will be used more efficiently, and consultants will be encouraged to produce more user-friendly designs. Furthermore, increasing the usage of IBS would result in more sustainable construction, higher productivity, and more efficient resource use.

iii. The necessity to enforce policy on the use of local resources especially in government projects. Projects that rely on imported products are facing problems as the products are produced in pandemic-affected countries and can take between 6 to 8 months to be delivered compared to only 1 to 2 months previously.

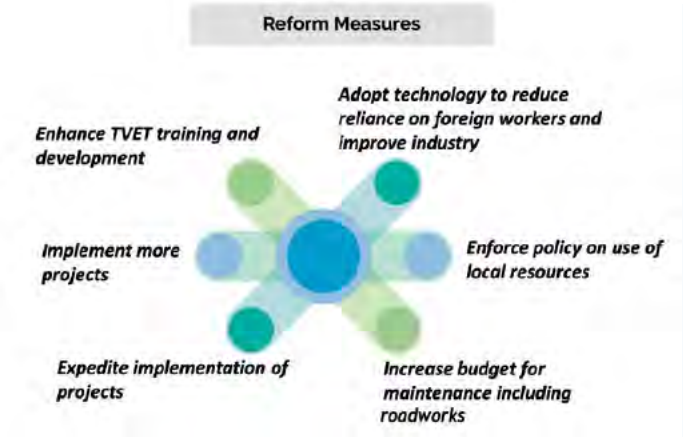
iv. It is crucial for the government to focus more on facilities management by allocating more budget for maintenance, especially road maintenance. It is also recommended that a portion of the road tax and car insurance payments be utilised for road maintenance.

v. Public projects that have been planned before or already in the pipeline need to be executed immediately. The government should consider implementing new procurement systems such as the fast track method or using the pre-approved plan (PAP) by JKR, which can expedite the design process, thus allowing projects to be quickly executed.

vi. Construction is an important sector that contributes greatly to the nation's economic growth. The construction of buildings and infrastructures represent the fundamental foundations of a strong economy. The move by the Government to implement more projects will stimulate the economy and spur the growth of the country.

vii. The Technical and Vocational Education and Training (TVET) truly needs to be enhanced. The industry's over-reliance on foreign workers has created a problem, making the industry non-resilient in facing tough economic conditions. To meet industry demand, more highly qualified and capable local workers must be generated via TVET.

viii. A new collaboration initiative between each project partner aided by more web-based project management (PM) systems alongside with other tools is needed to enable remote work regardless of the company size. This is because the Malaysian government as well as private clients, contractors, traders, suppliers and consultants are being forced to work together and communicate in a different way now. This initiative should last beyond Covid-19 because the new normal could be a realistic change to the construction industry as a whole.



Conclusion

The importance of the construction industry to the economy is widely acknowledged. Active construction activities are a clear indicator that the economy is positively growing, while sluggish growth in construction has always been an indicator of a recession. It is therefore important that the construction industry be revived and rejuvenated from the pandemic situation.

It is pertinent that the industry transition from being labour-intensive to a capital-intensive sector with a focus on digitalisation to be resilient during difficult times. The construction industry must also rapidly recover to aid Malaysia's economic development, which necessitates government assistance and intervention. As the private sector is struggling to increase its investment in construction, it would be up to the government to ramp up its investment in public projects. Continued delays in implementing projects, especially public projects, would only delay the construction industry's recovery as a whole.

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BIM ADOPTION: NRY ARCHITECTS' EXPERIENCE IN MANOEUVRING THE DIGITAL DISRUPTION

By Mohamad Haziq Zulkifli,
Corporate Communication Executive, NRY Architects

Building Information Modelling (BIM) was introduced as the new digital disruption to the construction industry a few years ago. As the leader in any project team, the architect involved has to learn and unlearn along the way, as well as grow and quickly adapt to the challenges posed on and off-site. This article delves into some insights and key takeaways on the BIM implementation by a practising architect.

As one of the largest architectural firms in Malaysia, NRY Architects has been at the forefront of architectural design and technology ever since its establishment 29 years ago. From its modest beginning, this Kuala Lumpur-based practice has been involved in a wide range of architectural projects and construction-related consultancy services in Malaysia and abroad.

This is further exemplified by NRY Architects' diverse project portfolio from the large-scale mass housings, institutional buildings, resort developments, transportation and healthcare facilities to the commercial and mixed-use developments. Completed projects include the iconic Maxis Tower and Four Seasons Place in KLCC, Puteri Cove Residences and Quayside in Puteri Harbour, Oasia Suites Kuala Lumpur, Utropolis Batu

Kawan in Penang and Taman Perindustrian Puchong LRT station, to name a few.

To keep up with current needs and the fast-paced construction industry, NRY Architects is equipped with cutting-edge architecture tools and construction technologies. From the fundamental CAD drawings to the 3D modelling and animation, NRY Architects believes in investing and utilising the latest and ideal technologies to create better architectures, including the Building Information Modelling (BIM) technologies.

Revit is used as an authoring and design tool for one of NRY Architects' projects

BIM-Ready Firm

When BIM was rolled out a while ago, many construction professionals were hesitant about its implementation and adoption. In addition to the unfamiliarity with the applied tools and their mechanism workflow, the steep start-up costs have caused some professionals to shy away and even shun the idea of digital disruption in construction technology. More resources are required as the adoption process is not straightforward, rather, it is a gradual transition that can take a couple of years.

NRY Architects' story with BIM goes way back to around six years ago when we were awarded a mixed development project in the KLCC vicinity. Upon project commencement, the client requested a full BIM adoption as they believe in the massive advantages that BIM can bring to the project.

"In other words, we were 'forced' to adopt and implement BIM upon undertaking that project," said Muhammad Hazim Azami, the Head of BIM Department at NRY Architects. "We had to learn everything at a quicker pace through our first real project experience using BIM. Throughout the process, we discovered just how immensely beneficial BIM was to our work in terms of the improved quality of production and project deliverables. We worked very closely with our client as they guided us in setting up the BIM team, file management, workflow process and many fundamental aspects of BIM," added Hazim.

Muhammad Hazim Azami, Head of BIM Department, NRY Architects

This project is classified as a hybrid-type BIM project since it was completed using a combination of traditional and BIM methods. It was done in this manner to account for the fact that certain consultants were not BIM-ready, as well as other factors. It also demonstrated NRY Architects' BIM team's adaptability to various BIM implementation challenges.

NRY Architects' BIM team started with six modellers who quickly adapted to the BIM-work culture and framework. Fast forward to six years later, they are now a full-fledged BIM team that has successfully delivered many BIM projects ranging from mixed commercial, transportation, and residential.

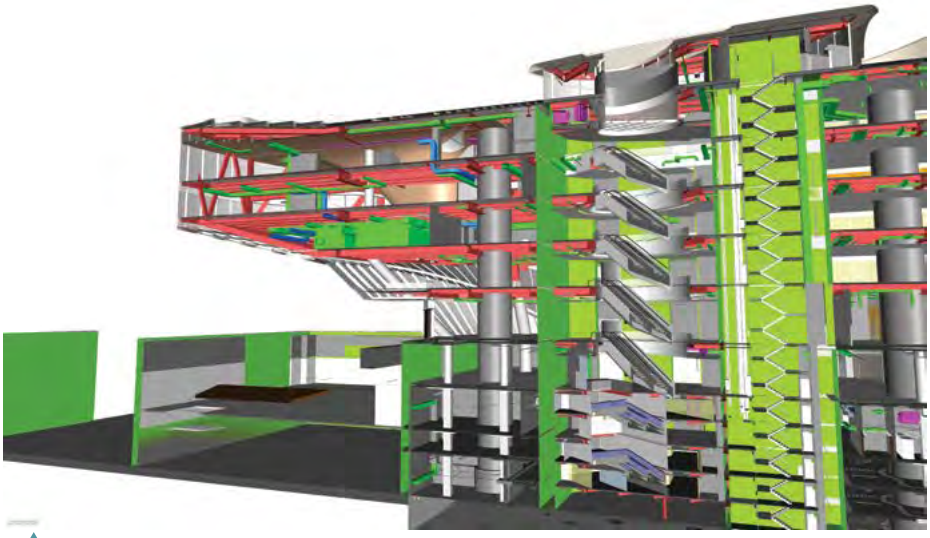
"We were also involved in a major transportation project overseas that used BIM extensively. We've learned and exchanged thoughts on BIM with our collaborative partners of different nationalities as a result of our involvement," Hazim said.

Hazim also emphasised how NRY Architects went to great lengths to encourage clients to implement BIM, despite the fact that BIM was not a requirement for that particular project. Convinced by its long-term benefits, most clients would accept the team's recommendation on using BIM. It also reaffirmed NRY Architects' dedication to delivering a better approach, high-quality design, and products, as well as raising BIM awareness among all other consultants and clients.

Setting Up BIM

According to Hazim, four tools are essential in setting up a fully functional BIM framework, namely, design, coordination, collaboration and rendering. These are the integral components that help to execute and deliver the project from the early design stage to the final completion on site.

The design tool assists architects in conceptualising their design in



Naviswork is used by NRY Architects to improve collaboration with other consultants and all parties involved

accordance with the client's specifications, as this is the critical design stage in which architects are free to explore their design creation. Autodesk Revit, Sketchup, Coohom, AutoCAD, and Autodesk Formit are some of the common tool examples that have greatly aided architects in the design process.

The coordination tool is perhaps the most engaging platform as it is used to combine files from different trades using software like Naviswork. The tool effectively assists the consultants and client to understand and coordinate the design better and eventually enhancing the overall quality of the design prior to the site implementation. Consultants can foresee design issues and resolve them even before they start work on site. This process is almost similar to the one in the automotive industry, where they conduct trials and mock-ups before releasing the final product to the public.

Collaboration tools like BIM Collaborate Pro enables architects and other consultants get onboard the same platform that provides a real-time view and assessment of the project files. During the recent pandemic, Hazim and his team found that using a cloud-based common data environment has helped them to deliver and continue production as usual even though some other firms were struggling to cope with working off-site. Last but not least, rendering tools such as Enscape and Lumion provide a nifty perspective of architectural presentations.

Understanding BIM

Hazim emphasises the importance of getting all stakeholders to understand BIM and how it can be an asset in their projects. "BIM should not be seen just as a tool, but as a framework that encompasses all facets of the construction process. The architect, other consultants, contractor, and client all need to be well-versed in it to achieve the same objectives and deliverables. This is where the required teamwork takes place," Hazim explains.

> *"BIM should not be seen just as a tool, but as a framework that encompasses all facets of the construction process. The architect, other consultants, contractor, and client all need to be well-versed in it to achieve the same objectives and deliverables."*

The communication gap is also another challenge to be addressed in any BIM-related process. Exchanging messages and notes should be a seamless transaction,

Enscape has given both consulting teams and clients the freedom to further explore the building design

as any missed communication could lead to imminent mishaps. As all the tools are cloud-based, the communication process is not a hassle, as long as it is connected to the Internet.

Furthermore, in some projects, the reverse-BIM approach has become a strongly discouraged practice. This approach bypasses the initial BIM design process since the BIM model was created directly from the existing 2D drawings, which can result in many discrepancies. This is an unhealthy practise because it disrupts the entire BIM-chain process.

If a project only partially adopts BIM, several issues will arise. A lot of adjustments and conversions must be implemented since the current traditional approaches do not use the same BIM formats, resulting in extra work and inadvertently affecting the productivity of the entire team. As a result, a complete BIM adoption is strongly advised to ensure a smooth sailing process.

BIM Implementation

Despite the fact that BIM is commonly used by construction players, different practitioners may approach it differently. Hazim advocates that BIM adoption should be implemented across all project phases.

He went on to say that the differences between a BIM project and a traditional project lie in the EIR and BEP. The EIR, or Employer's Information Requirement, is a collection of specific guidelines for consultants and contractors on the models that are required and the purpose of each model for the project, while the BEP, or BIM Execution Plan, assists team members in identifying and executing BIM in each project phase.

"Both the EIR and the BEP serve as a guideline and standard protocol for all team members and stakeholders, including the client, to fully comprehend the BIM implementation. We believe that if the client understands what is expected from the BIM model, it will be easier for the consultants to deliver it," Hazim added.

The consultant should provide design purpose and guidance as what has been finalised with the client at the start of every project, as outlined in the scope of services. After which, the consultant would need to produce BIM models that can be understood by the contractor on site. While on-site, the contractor will need to execute the BIM models accordingly with proper monitoring by the consultant. Any construction work must be guided by the BIM models created by the consultants. At the same time, the contractor must create a BIM model based on the shop drawings for the on-site construction process. As-built drawings are often needed in the later stages of completion, depending on the details requested by the client.

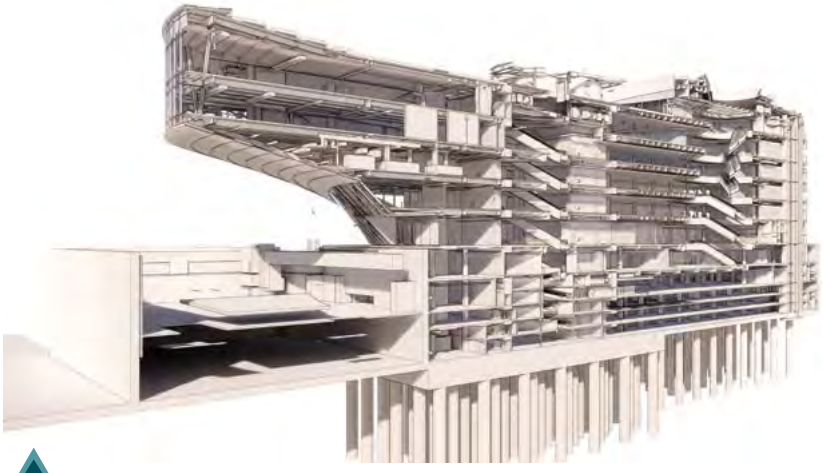
Current and Post-BIM Stage

As the BIM adoption rate is quite low in Malaysia, many concerted efforts have been implemented and are still ongoing by the Construction Industry Development Board (CIDB). CIDB has established myBIM Centre, a dedicated BIM centre that serves as a one-stop shop for reference, support, services, and capacity building. The centre has also registered and listed NRY Architects as one of the nation's BIM consultant providers.

Through constant engagement with CIDB and other bodies like the Malaysian Institute of Architects (PAM) and project clients, architects may gain exponential benefits from these collaborations as well as experience and knowledge exchange among the key players. This is demonstrated by the work of Hazim and his colleagues at NRY Architects.

Apart from introducing and encouraging BIM to the construction personnel, a few fundamental issues that have hampered BIM implementation must be addressed. Based on their experience as a practising architect, the greater pull factor would be the supportive stakeholders, along with a deeper understanding and commitment among the team members to adopting and implementing BIM technologies. Proper guidance and training are also required in order to produce well-versed skilled workers in BIM technologies.

As our world is gearing up towards the Industrial Revolution 4.0 (IR 4.0), many new inventions and technologies including construction technologies, are becoming ubiquitous. In other



Enscape gives a better image projection, particularly on the building's structural conditions

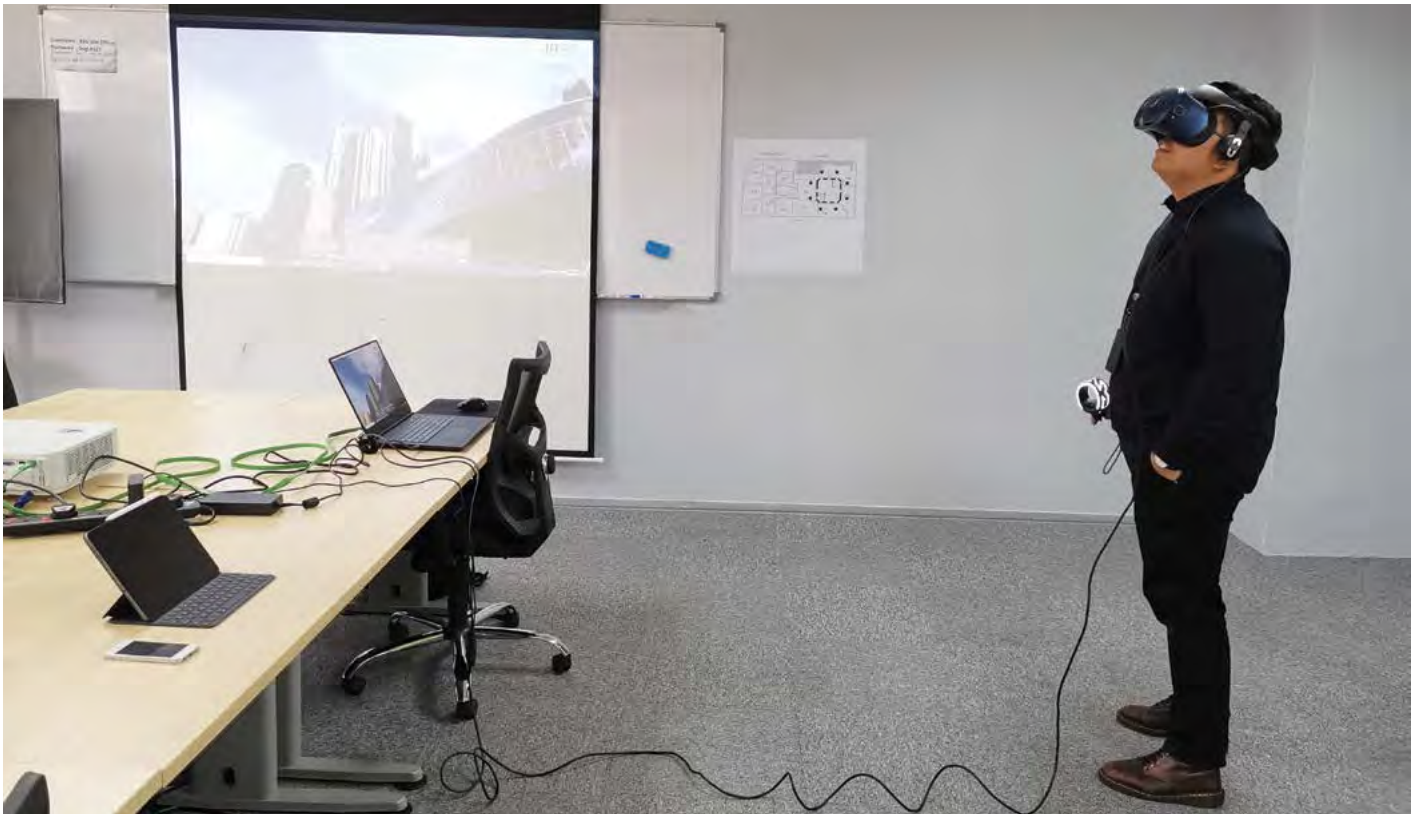
> *"When compared to ten years ago, we have seen significant progress in BIM implementation, both in the private and public sectors. But we must not stop there; we must also learn about and embrace other construction technologies."*

industrialised countries, BIM has been a very integral part of their construction standards, either from small to large-scale projects. This BIM adoption culture is gradually being inculcated here in Malaysia.

"When compared to ten years ago, we have seen significant progress in BIM implementation, both in the private and public sectors. But we must not stop there; we must also learn about and embrace other construction technologies. NRY Architects is pleased with its technological adaptations and will continue utilising BIM and other technologies to keep improving our design and deliverables," Hazim stated.

Other construction technologies, as implied by Hazim, include the use of digital twin technology, 3D printing and Artificial Intelligence (AI) in architecture. The digital enablers will effectively boost the project productivity, for instance, the virtual testbed for any architectural or engineering design through digital replication or digital twin technology. Big data will help architects in the design process and many other facets of architecture, such as parametric architecture, smart city and smart homes. 3D printing, on the other hand, is becoming more accessible due to its reliable and low-cost devices.

BIM adoption and implementation may seem to be a long shot in the local construction industry, but with combined and coordinated efforts, BIM technologies will be available and inevitable for all construction personnel. The contentious issue is when is the right time for architects and other stakeholders to pursue this digital migration. The time has come to take the first step in this digital journey, as the long-term benefits of BIM technologies in our construction industry far outweigh the common challenges.



Virtual Reality (VR) technology is used during a design presentation with NRY Architects' clients. It has helped their clients to understand the overall scheme on a larger scale by viewing it through a VR headset

CONSTRUCTION SECTOR REPORT DURING MCO 3.0

1 JUNE 2021 TO 3 JUNE 2021

330 CONSTRUCTION SITE INSPECTIONS

52%
14
COMPLIANT

48%
13
NON-COMPLIANT

13
CONSTRUCTION SITES CLOSED

*27 CONSTRUCTION SITES IN OPERATION

*303 CONSTRUCTION SITES NOT IN OPERATION

SOP THAT SHOULD BE ADHERED TO BY CONSTRUCTION SITES

1. Companies should get MITI's approval to operate
2. Local and foreign workers to be tested negative from Covid-19
3. Only 40% worker capacity allowed on the construction site
4. The creation of a Covid-19 construction site task force
5. The movement of workers should be only from their accommodation/ CLQ and construction site
6. The movement of workers in and out of the construction site and their living quarters/ CLQ should be minimised
7. Workers cannot move from one construction site to another

SECTION: EXPERT OPINIONS

Our panel of experts weigh in on the Minister of Works recent announcement of awarding tenders worth RM528 million to boost the economy. They discuss if this is a step in the right direction, whether more could be done, as well as any other relevant issues.

DATUK Ar. EZUMI HARZANI ISMAIL,
President, Pertubuhan Akitek Malaysia (PAM)

Even before the start of the pandemic, data from the Department of Statistics showed that the total value of construction work in our country was already experiencing slow growth. In addition to that, the value of works is consistently dominated by private sector projects. Thus, the recent decision by the government to award tenders worth RM 528 million for infrastructure projects is very much welcomed. The multiplier effect from this classic Keynesian move is expected to reinvigorate the economy through the increase in government expenditures to stimulate demand with a positive economic spill over effect to pull the global economy out of depression.

> *"We need projects that would spill over to the industries that need help the most, at the correct locations, and in the shortest time."*

As of the third quarter of 2020, private sector projects contracted drastically by about 44%, going down from the usual RM19 billion to 20 billion value of works per quarter to only RM12 billion. However, government projects fared worse, going down from about RM16 billion value of works every quarter to only RM7.5 billion in the second quarter of 2020. Looking at these figures, it is timely that government intervenes to resuscitate the ailing economy. However, the value of awarded projects is far below expectations. We have a long way to go to return to the usual government construction value of RM 16 billion per quarter.

The success of this 'rescue mission' depends on several factors. The first one being the nature of the projects being awarded and secondly, their locations. We have to keep in mind the main goal of awarding these projects is to boost the local economy through the creation of jobs and demand for direct and indirect products and services in the supply chain.

As we know, there are job casualties from other industries too, not just in the construction industry. The tourism industry and retail workers were also hit hard by the pandemic. Thus, the selection of projects to be awarded must be made with careful consideration. The projects awarded must not be too complex that it would take years to complete. We need projects that would spill over to the industries that need help the most, at the correct locations, and in the shortest time. From this angle, it would be good if the projects awarded also include upgrading works on infrastructures that could revive tourism, such as museums, zoos, or park facilities.

From the Ministry of Works' information, the awarded projects is a mix of upgrading works and new constructions, which augurs well in terms of the time frame of project completion. For new constructions, these projects should go hand in hand with efforts by the local authorities to expedite construction permit approvals, such as planning approvals and building plan approvals because the faster the projects are completed, the faster it can generate income for the local economy.

Location wise, it is good for the projects to be distributed in many states other than just Kuala Lumpur, Selangor and Johor, which have been the top three locations with the highest value of works for several quarters now. Fair distribution of projects across the country should always be the consideration in such a situation when we are trying to boost the economy.

As suggested by Keynes, the practical approach in addressing economic recessions and unemployment issue is through the implementation of active government economic policies that focuses on creating and managing aggregate demand. Due to our high expenditure for equipment and services in combating COVID-19, the government needs to have a double barrel policy.

> *"In facilitating the growth, unnecessary, redundant or obsolete regulatory hurdles must be removed."*

At the same time, a similar budget needs to be allocated towards the construction sector to stimulate economic recovery.

In facilitating the growth, unnecessary, redundant or obsolete regulatory hurdles must be removed. It does not cost money to the government to remove growth impeding regulations. Instead, it will increase productivity and save the government resources.

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DATO' Sr THIRUSELVAM ARUMUGAM,
President, The Royal Institution of Surveyors Malaysia (RISM)

Senior Minister of Works, YB Dato' Sri Haji Fadillah Bin Haji Yusof, presented the Surat Setuju Terima Tender (SST) comprising seven projects worth RM528 million under the Ministry of Works' (KKR) plans to boost the economy as reported in news on 24 March 2021.

One of the seven projects is the development of a 15-kilometer Central Spine Road (CSR) in Raub Pahang. The project, also known as Package 4 Section 4 A, will be carried out over a 36-month period at a cost of RM297.69 million. Two other projects packages are dedicated to the Prime Minister's Department (JAKIM) for the second-phase construction of the Sarawak Islamic Skills Institute and the phase-three repair of National Mosque. For the Ministry of Health Malaysia, the budget is allocated for the construction of Penang hospital quarters and health clinics in Bukit Ibam, Rompin and Pahang.

The public would like the government to expedite the growth and recovery of the construction sector to reduce the sluggish economy and the effects of the Covid-19 pandemic. Therefore,

> *"The different locations of projects will affect the ecosystem of each location especially for the ones under the Ministry of Rural Development, leading to more job opportunities and increase in local businesses."*

these projects of various types and at different locations are splendid since KKR is not concentrating on a single category of contractor or a specific area. The variation offers an opportunity for different types of contractors to be involved as it is open to a wider construction market. The different locations of projects will affect the ecosystem of each location especially for the ones under the Ministry of Rural Development, leading to more job opportunities and increase in local businesses. The awarding of these infrastructure projects is also in line with KKR's goal in continuously providing roads that are safe, comfortable and possibly time-saving routes.

All the projects must have been awarded to companies with G7 capabilities, that are able to handle projects worth more than RM10 million. But what about about the smaller companies? The amount itself is not big as the country needs a lot more of these types of projects to spur and boost the economy. Currently, there is a guideline in government contracts for the main contractor to distribute projects to Bumiputera Contractors Class E and F for the Provisional Sums authorised in the contract. The Provisional Sums amount will be used to calculate the main contractor's profit share. This guideline allows the smaller contractors to participate in large projects even though it was not directly awarded to them.

At the same time, Malaysia needs additional projects such as Mass Rapid Transit (MRT) that can create an exponential multiplying impact, allowing all parties involved in the construction sector to benefit, including contractors and their subcontractors, consultants, suppliers, and others. More construction projects are required, which will provide more opportunities for the many consultants in the private sector. For example, certain infrastructure projects do not directly hire consulting quantity surveyors since

> *"Each discipline would be an expert in their own fields, therefore, not utilising that expertise would be a loss to the project."*

the engineers will prepare their own Tender Documents and Bills of Quantities, leaving quantity surveyors out of some of the country's megastructure projects. Each discipline would be an expert in their own fields, therefore, not utilising that expertise would be a loss to the project.

The government should be commended for implementing the Programme for Professional Training and Education for Growing Entrepreneurs (PROTEGE) in their projects. The contractor is requested to include the appointment of trainees with a minimum salary of RM2,000 for 12 months. The number of trainees under the PROTEGE programme will depend on the size of the project. This opens up employment to recent graduates, giving them the necessary work experience so that they can apply and probably get better prospects upon conclusion of the PROTEGE programme.

Every project is a learning experience for everyone involved. The government must allocate the budget for technological progress, as well as supporting equipment and instruments. However, just as a hammer does not make one a carpenter, the advancement of technology and equipment does not replace the knowledge and expertise acquired during the project. Project owners must also be willing to share their projects' data and allow the data collected to be used for future projects.

It is important for the contractors who are awarded the tenders to execute the projects responsibly so that the public will be able to enjoy quality infrastructure and facilities as planned by the government. Delays, poor craftsmanship, and cost overruns should be a thing of the past as Malaysia advances toward becoming a developed nation through the fourth industrial revolution, or IR 4.0.

By MATRADE's insight

Copper and aluminium products that are imported into India require mandatory registration

IMPORT REGISTRATION FOR COPPER AND ALUMINIUM PRODUCTS IN INDIA

India is keeping a close eye on high-value commodity imports and intends to regulate them.

The Government of India (GOI), through the Ministry of Commerce (MOC), has implemented a mechanism to regulate copper and aluminium imports into the country by requiring mandatory import registration for 46 copper and 43 aluminium products under the Non-Ferrous Metal Import Monitoring System (NFMIMS) beginning 14 April 2021.

According to the Ministry, the mechanism will enable the government to collect data and successful monitoring as well as potential policy action. The NFMIMS will cover 99.5% of copper and aluminium imports, which are currently worth INR35,000 crore (USD4.69 billion). Blister copper, refined copper, copper bars, copper rod, and copper alloys all fall under HS Code 74. Other materials like ingots, wire rods, aluminium waste, aluminium powder for thermite process, aluminium tubes and pipes are among the affected products for aluminium, which come under HS Code 76.

According to a notification issued by the Directorate General of Foreign Trade (DGFT), the NFMIMS has changed the import policy for copper and aluminium from 'free' to 'free with compulsory registration'. Importers must apply in advance by providing information in the system and pay a registration fee of INR500.00 (USD6.70) in order to

> *"The mechanism will enable the government to collect data and successful monitoring as well as potential policy action."*

Copper bars are one of the products that fall under HS Code 74

receive an automatic registration number. The importer must apply for registration no earlier than 60 days before the scheduled arrival date of the import consignment and no later than five days after that date. The system-produced automatic number will be valid for 75 days. Importers will also be expected to enter the registration number and its expiration date in the Bill of Entry (BOE) in order for the consignment to be cleared by customs.

According to the Copper and Aluminium Association of India, the government's decision to establish a system similar to the one used in the steel industry would assist domestic non-ferrous metal producers such as Vedanta, Nalco, Hindalco and Hindustan Copper in developing import substitution strategies. According to MOC data, India's copper (HS74) and aluminium (HS76) imports totalled INR510 crore (USD68.37 million) and INR440 crore (USD58.98 million), respectively, with Malaysia being one of the top suppliers of both products alongside China, Japan, US and UAE.

> *"The pre-registration of import contracts would cause concern among copper and aluminium importers"*

The Way Forward

It is clear that India is keeping an eye on high-value commodity imports and have plans to control them. According to a report by Outlook India, the government of India is concerned about the country's widening trade deficit and the rise in speculative imports. India used to be a net exporter of copper before becoming a net importer in 2019, owing to the Tuticorin Sterlite Copper plant's closure in May 2018.

According to market observers, the pre-registration of import contracts would cause concern among copper and aluminium importers. However, the government must be aware of imminent imports in advance and keep track of their arrivals. Advance knowledge of the quantity contracted, price and arrival time, among other things, would assist the appropriate authorities in taking the required steps and provide the government with sufficient time to evaluate any emerging import situation.

For further information and enquiries, please contact MATRADE Mumbai at ***mumbai@matrade.gov.my***.

Note 1:
This article is based on Market Alert (MA) prepared by MATRADE Mumbai and the information is correct at the time of the writing (30 April 2021).

Note 2:
The MA is available in MyExport which can be accessed at *www.matrade.gov.my*

PAVING THE WAY TO QUALITY

Insights on QLASSIC from 2016 to 2020

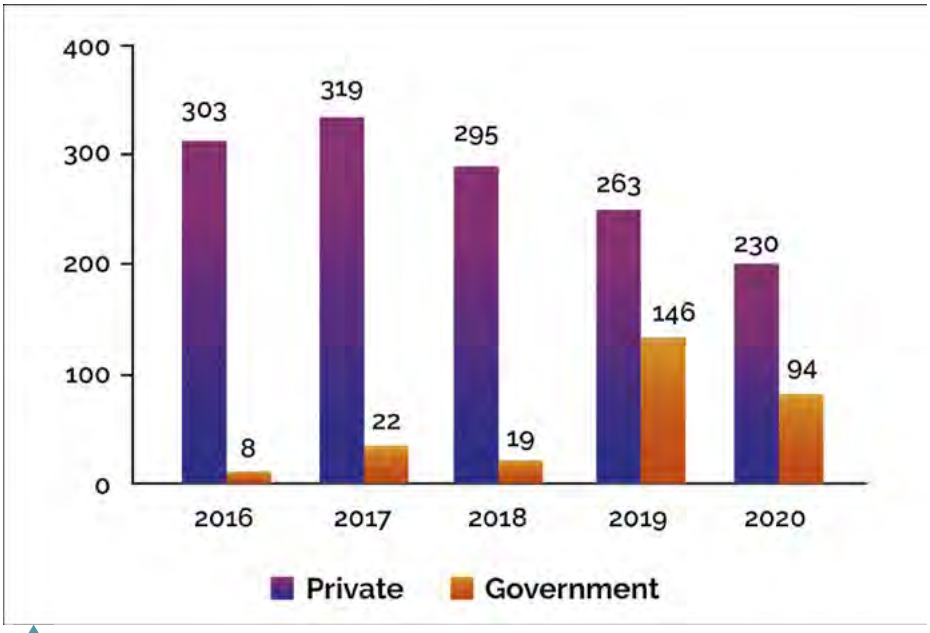


Chart 1: Number of QLASSIC assessments carried out (by Year and Sector)

Since 2006, the Quality Assessment System in Construction (QLASSIC) method has been in use by the industry. Due to its low take-up rate, one of the key goals of the CITP (Construction Industry Transformation Program) 2016 was to integrate QLASSIC in all public and private housing projects. The efforts are slowly but surely bearing fruit.

The insights in this article were gleaned from the number of QLASSIC evaluations performed between 2016 and 2020, with a variation in building categories (residential/non-residential) and sectors (government/private).

From 2016 to 2020, a total of 1699 projects were assessed using the QLASSIC system, with the majority of the evaluations (1410 projects) being done on private projects rather than government projects (289 projects). When compared to other years within the CITP period, 2019 had the highest number of projects assessed (409 projects). The figure dropped to 324 assessments in 2020 due to the slowdown in construction activities caused by the pandemic.

In 2019, there was a significant increase in government projects that received QLASSIC assessments. This came on the heels of the Works Ministry's announcement of its commitment to making the QLASSIC assessment mandatory to all upcoming developments by 2020 as outlined in the National Housing Policy 2.0 (NHP2.0).

As 2019 was the first year they were assessed, the contractors were unprepared by the stringent QLASSIC evaluation requirements. This is reflected by the dip in the average QLASSIC scores that year (Chart 2). However, they did improve their performance the following year.

Home buyers should be more concerned with the quality of the finishes rather than the property layout and design alone.

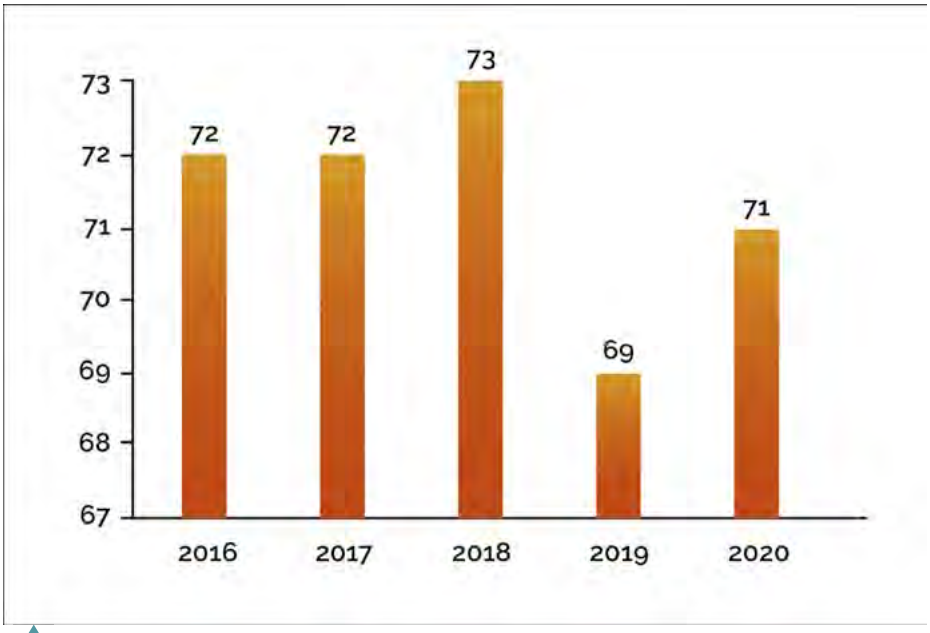


Chart 2: Average QLASSIC Score (by Year)

Ir. M. Ramuseren, CIDB Malaysia's General Manager, Safety & Health, Environment and Quality Division (SHEQ) (third from right) with a delegation of senior CIDB officers during a visit to the PNB 118 project site before MCO 1.0 was enforced

"This is what we have hoped to achieve with QLASSIC. It is a good learning curve and participants will improve over time, which is good for them and their clients," said Ir. M. Ramuseren, CIDB Malaysia's General Manager, Safety & Health, Environment and Quality Division (SHEQ). "We have seen most of the assessed projects improve from 60% to 70% and later on, 80%."

Chart 3 shows that the majority attain a QLASSIC score range of between 70-74%, while only 2.5% of the total number of projects assessed scored above 85%. To incentivise the developers' commitment to quality, CIDB raised its feasibility scoring to 83% for 2019, with winners being bestowed with the QLASSIC Achievement Award. The National Housing Department has also imposed a minimum QLASSIC score of 65 for the public affordable housing projects in 2020. All these will bode well for the take-up rate of QLASSIC once the pandemic has been curbed.

> *"This is what we have hoped to achieve with QLASSIC. It is a good learning curve and participants will improve over time, which is good for them and their clients"*

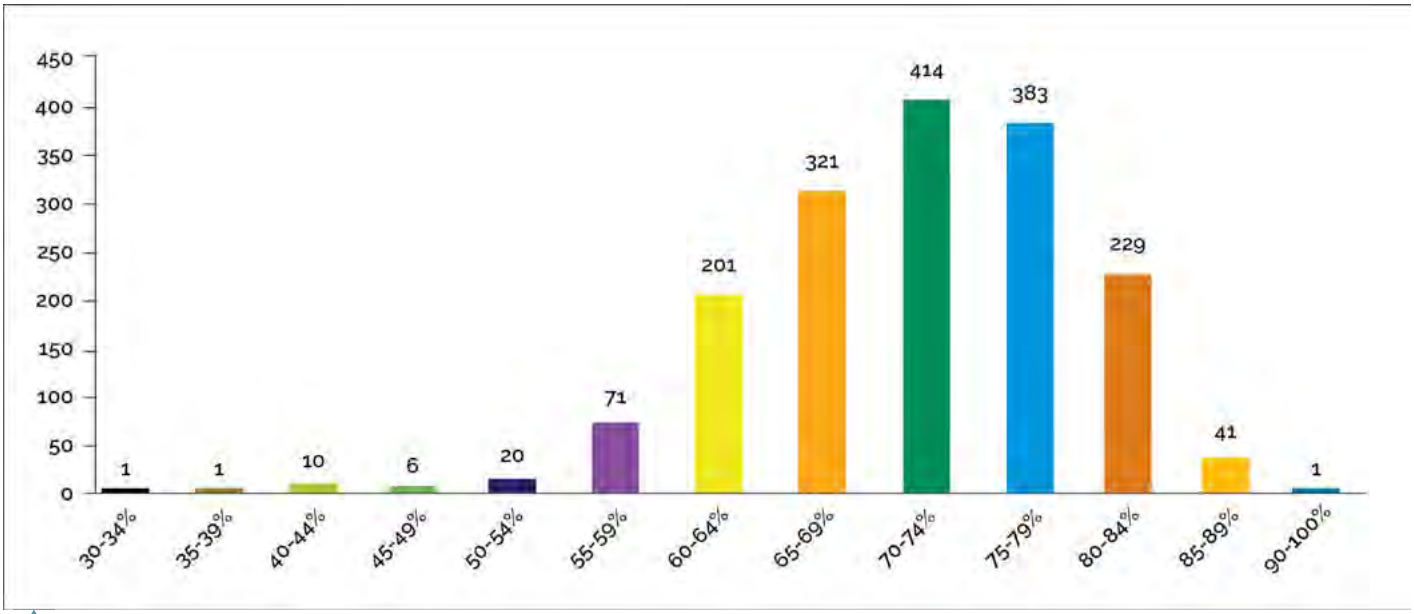


Chart 3: Distribution of QLASSIC Scores for 1,699 projects (2016-2020)

There are more landed residential housing projects being assessed (Chart 4) as there are more such projects taking place outside the city centre in comparison to the city centres which have more high-rise projects. There are also fewer projects in the city centre.

Over the years, CIDB has also increased its awareness programmes to educate home purchasers to be more concerned with the quality of the finishes rather than the property layout and design alone. As a result, developments with high QLASSIC scores are becoming increasingly popular among house buyers.

According to Ramuseren, it costs RM3,400 for each QLASSIC assessment. "Currently, QLASSIC can be requested property developers or contractors with a fee of RM1,400 per project with the remaining RM2,000 subsidised by CIDB. QLASSIC is managed by CREAM, the centre of assessment," he explained.

"Anyone can apply to be assessed and you have nothing to lose but everything to gain. We have a large team of assessors around the country and aim to increase our reach to the other states, namely, the Northern region and East Malaysia," said Ramuseren.

To date, 90 per cent is the highest ever score achieved on QLASSIC since its establishment.

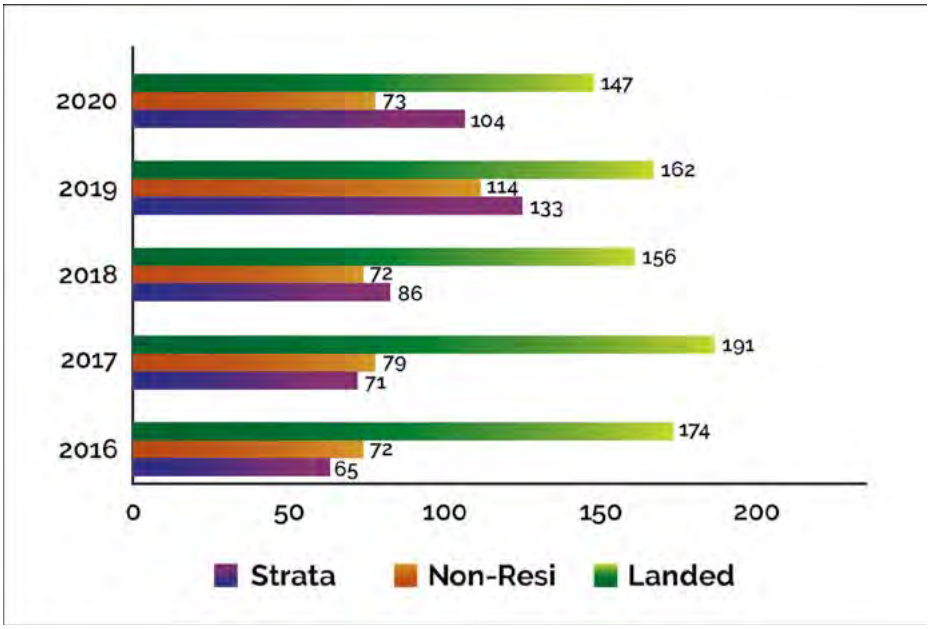


Chart 4 - Distribution of Number of Projects Assessed (by Building Category)
Legend text: Landed, Non-Residential, Strata

> *"We have a large team of assessors around the country and aim to increase our reach to the other states, namely, the Northern region and East Malaysia"*

NATIONAL CONSTRUCTION COST CENTRE 2.0 (N3C 2.0) PORTAL UPDATES

The one-stop centre for construction cost information has been upgraded to provide quality and up-to-date information.

CIDB recently launched the National Construction Cost Centre 2.0 (N3C 2.0) to provide comprehensive, quality and up-to-date construction cost data to industry players. N3C 2.0 is a rebranded and upgraded version of the industry information system, MyN3C which was launched in 2016.

This information system portal was developed by Building Cost Information Services Malaysia (BCISM) Sdn Bhd, a collaborative effort between the CIDB Malaysia and the Royal Institution of Surveyors Malaysia (RISM). N3C 2.0 serves as a one-stop centre for cost information and construction data.

Through this portal, industry players, as well as the general public, can easily obtain information on construction costs that is authentic and transparent. As such, N3C2.0 plays a vital role in fostering a culture of transparency, efficiency and competitiveness in the construction industry.

"The upgraded portal will be an important reference centre for the industry. Through BCISM, CIDB aims to facilitate access to comprehensive construction information, ensuring that periodically released data is intended to strengthen policy development and enable accurate decisions, better resource planning, as well as long-term operational sustainability," said Datuk Ir. Ahmad 'Asri Abdul Hamid, Chief Executive of CIDB Malaysia.

BCISM is a collaborative effort between the CIDB and RISM to operate MyN3C 2.0 portal, a centralised data bank for construction costs in Malaysia

> *"Through our strategic partnerships and collaborations, we can often complement each other and leverage on each other's expertise different areas to compete in markets that are usually beyond our individual reach."*

BCISM has been collaborating with the partners of the N3C platform to bring more value to construction players. "We aim to help contractors and industry players to go digital and fully utilise the construction cost data on our platform. Through our strategic partnerships and collaborations, we can often complement each other and leverage on each other's expertise different areas to compete in markets that are usually beyond our individual reach," said Sr Nazir Muhamad Nor, BCISM General Manager.

"I see this collaboration taking us one step further towards advancing the construction industry through knowledge and data-oriented experience. Through N3C 2.0, BCISM hopes that the Malaysian construction industry will become more efficient, productive and more progressive," he added.

The N3C 2.0 portal includes a variety of upgraded features, including:

- more interactive visuals;
- a responsive user interface for mobile devices;
- able to analyse data from 2012 to date by comparison and trends;
- an online construction product promotion platform; and
- online payment gateway

Users can also get product details for their projects, such as:

- the prices of building materials;
- construction workers wage rates;
- construction machinery rental rates and selling prices of construction equipment;
- four indices, including the Building Materials Cost Index, the Construction Worker Cost Index, the Machinery and Equipment Cost Index and the Building Cost Index.

Nazir believes that N3C 2.0 users will benefit the most from the portal's integration with existing BIM software applications currently available in Malaysia. "BCISM has recently partnered with Strategic Partners Glodon Malaysia and Speedbrick Solution to help contractors and construction industry players to optimise digital construction cost data by integrating N3C 2.0 with existing BIM software applications. Through this integration, which utilises the latest technology in the field of 5D BIM, it is expected to accelerate the construction industry into the digital era of cost management."

"By combining the effort and expertise of different organisations, all our potential subscribers in the network are better able to innovate and grow and increase their competitiveness on many levels. We will also continue to work with other industry players in this respect and strive to gear up the momentum of the construction industry in this digital transformation."

Current Promotions

Nazir reports that since its inception, the take-up rate for N3C has been slow. "Our subscription rate is still low as most of the industry players are still uncertain about the current situation due to the pandemic."

However, he hopes that the new platform and promotions will further boost its industry acceptance. The new promotions include:

- All Malaysian institutions of higher learning will be able to use the TBQ-Cubicost system for free for 2 years if they subscribe to N3C 2.0 for 2 years.
- Users who subscribe to TBQ-Cubicost will receive 6 months of free N3C access, subject to terms and conditions.
- Users of N3C are eligible to BCISM-Subsidised Speedbrick and subscription of up 6 months.

He exhorts the construction industry players to take advantage of the wealth of information that N3C 2.0 has to offer. "Digital technology and knowledge have never been more relevant than they are now. All of us should be equipping ourselves with the relevant knowledge to ensure that we are ready to embrace the fast-approaching new era."

Plans in the Pipeline

BCISM is currently planning to publish the Tender Price Index for building works as one of the references provided in N3C 2.0. In addition, BCISM will also develop a Construction Cost Benchmark and Whole Life Cost. Both products are expected to be ready by the end of the year.

"This information is very important as a guide in estimating project costs, analysing the construction market, evaluating price movements and others. Through the existence of the N3C 2.0 one-stop centre equipped with quality data access, it is hoped that industry players get a positive and optimal impact in terms of time, quality and cost in making business decisions and initial expenses," said Datuk Ahmad 'Asri.

"N3C 2.0 aims to make data transparency and competitive prices the driving force to all industry players. By making competitive prices accessible, competitors themselves can make their price comparisons and get a clearer understanding of their relative market value," Nazir concurred.

"We are now in the 'big data' age, where information powered by technology and automation helps us to lead and set industry standards not only in Malaysia but also in the ASEAN region and globally," he added.

"The N3C 2.0 is capable of providing quality, up-to-date data and indirectly contributes to the rise of a more competitive and efficient construction industry among construction industry players. In addition, N3C 2.0 also promotes a culture of transparency and competitive pricing to the construction industry, which bodes well for all."

> *"N3C 2.0 also promotes a culture of transparency and competitive pricing to the construction industry, which bodes well for all."*

CIDB ENFORCEMENT IN NUMBERS

FROM 1 JANUARY TO 31 MAY 2021

ENFORCEMENT OF ACT 520

SITE INSPECTIONS	INTEGRATED ENFORCEMENT WITH OTHER AGENCIES (OPB)	SPECIAL OPERATIONS (OPK)
3,504	15	50

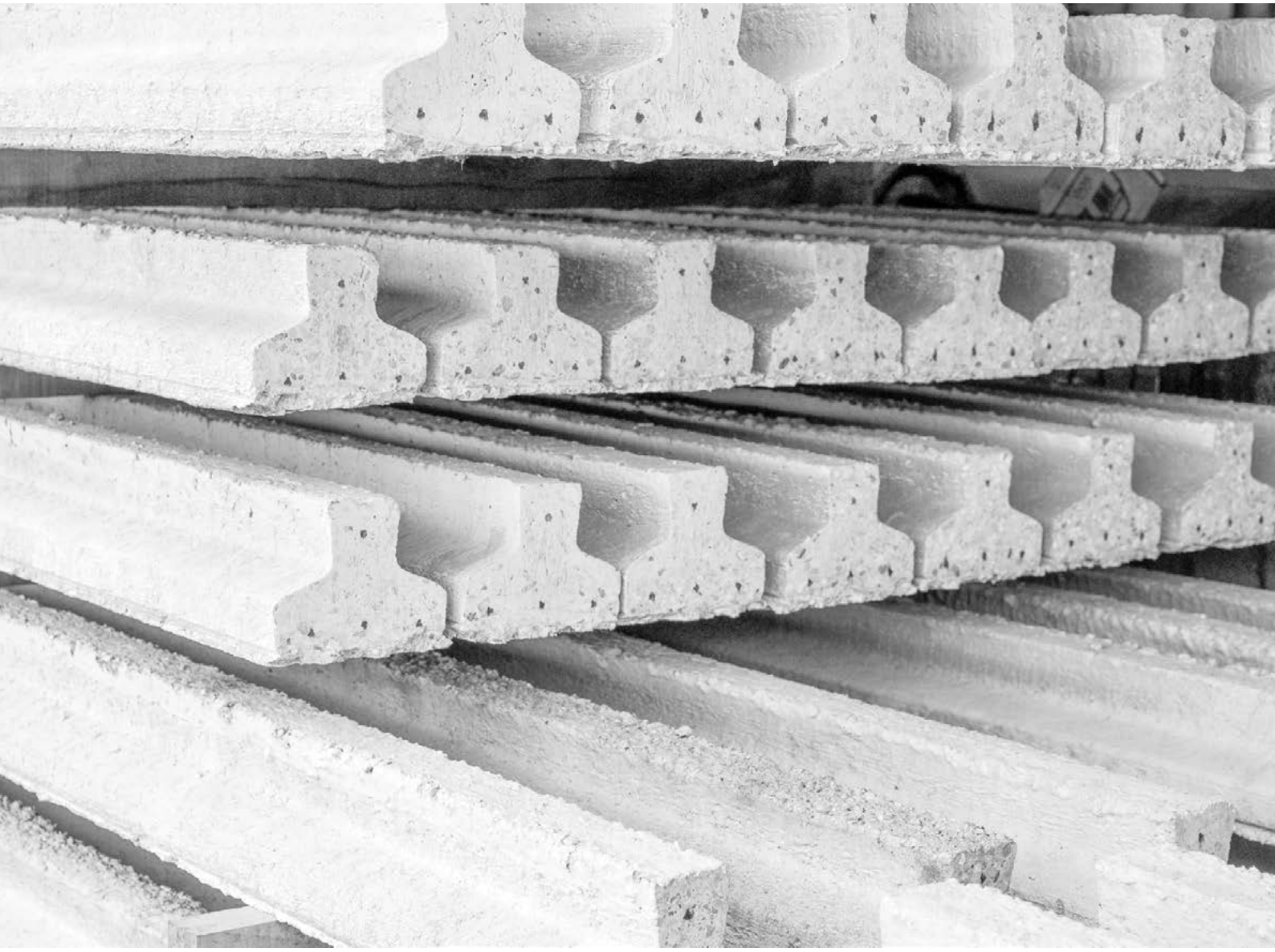
ACTIONS TAKEN

NOTICES ISSUED	INVESTIGATION PAPERS OPENED	PENALTIES ISSUED	DISCIPLINARY PROCEEDINGS	WARNINGS ISSUED
4,493	1,125	15	9	28

CONTRACTOR REGISTRATIONS SUSPENDED	CONTRACTOR REGISTRATIONS CANCELLED	CONTRACTOR REGISTRATIONS RETRACTED	DIRECTOR BLACK LIST
1	0	13	12

VALUE OF COMPOUNDS ISSUED

RM 2.2 Million



CIDB IBS VENDOR DEVELOPMENT PROGRAMME

Benefits for SMEs

By Ts. Zuraihi Abdul Ghani, CEO of CIDB IBS Sdn. Bhd.

Ts. Zuraihi Abdul Ghani, CEO of CIDB IBS Sdn. Bhd

Introduced in 2019, the CIDB IBS' Vendor Development Programme (VDP) is a joint initiative between CIDB IBS and the Works Ministry to support the growth of the Industrial Building Systems (IBS) industry in Malaysia. It offers small and medium-sized enterprises (SMEs) a pathway to becoming an IBS solution and service provider.

SMEs may be reluctant to hop on the IBS bandwagon because it will be costly for them to enter the supplier market, as they are required to invest in expensive machinery. Hence, serving the vendor market will be more profitable for SMEs rather than becoming IBS manufacturers. This is where the VDP comes in.

> *"Serving the vendor market will be more profitable for SMEs rather than becoming IBS manufacturers. This is where the VDP comes in."*

The VDP is part of the Malaysian Government effort to provide SMEs with a golden opportunity to participate in the nation's construction industry technical advisory in terms of capacity building, IBS technology, and Building Information Modelling (BIM). In addition, participants will benefit from a streamlined application process for the IMPACT Certification Program, as well as assistance on how to implement the IBS Design Standards for housing projects.

The VDP offers potential participants the opportunity to:

- Further develop and strengthen their expertise as an IBS entrepreneur through training and certification programmes
- Access to cutting-edge IBS technology
- Become a strategic partner with the government and other private organisations, which helps them expand their IBS business
- Participate in CIDB IBS' promotional activities to raise awareness of their company
- Advertise and commercialise their IBS product through the IBSWare e-marketplace platform

Through the VDP, the government aims to create and develop successful SMEs in the nation's construction industry, to provide a platform for SMEs to pursue opportunities in the IBS construction industry, and to further strengthen existing IBS industry players, thereby increasing the number of IBS manufacturers. All these will go towards enriching the Malaysian IBS ecosystem.

> *"There has never been a better time for Malaysian construction sector participants to begin implementing IBS solutions far and wide."*

Indeed, there has never been a better time for Malaysian construction sector participants to begin implementing IBS solutions far and wide. With apparent cost savings, productivity, and general efficiency benefits, as well as to head the clarion call of the Construction Strategy Plan 4.0, participation in the IBS value chain should be a no-brainer, particularly for the industry's small to medium-sized firms.

For more information on VDP, please visit *www.cidbibsvdp.com*.

FIVE NEW WORK PACKAGES FOR SABAH PAN BORNEO HIGHWAY PROJECT UNDER TENDER PROCESS

Eleven of the 16 construction packages of the Sabah Pan Borneo project are 49% completed since March this year.

The Sabah Pan Borneo Highway Project

Senior Minister of Works, Datuk Seri Fadillah Yusof recently announced that 11 of the 16 construction packages of the Sabah Pan Borneo Highway project were already at 49 per cent completion as of March this year. The 1,236-kilometre-long Sabah Pan Borneo Highway project is divided into three construction phases and 35 work packages.

The first phase of the RM27 billion project includes the 706km stretch of Sindumin-Kota Kinabalu-Kudat-Ranau-Batu 32 Sandakan-Tawau, the second phase (Tamparuli-Ranau) for 98km, and the third phase (Tawau-Kalabakan-Keningau-Kimanis) for 432km.

To ensure the project's seamless implementation, Fadillah stated, the appointment of a project management consultant, an independent consultant engineer, and an information technology system consultant will be finalised in the near future.

Five new work packages for the Sabah Pan Borneo Highway project have been submitted for tender and would be concluded soon, Fadillah said.

One of the five packages, he added, involved the length from Tawau to Semporna, whose contract had been terminated and the package re-tendered.

These five additional work packages can be completed in 36 months, depending on when the tender period is finalised or when the contractor receives a letter of acceptance.

> *"With the additional five work packages, the Sabah Pan Borneo Highway project now has 16 packages at this level, with 11 of these being implemented and projected to be completed between 2022 and 2023," said Fadillah"*

CIDB MALAYSIA

CIDB IBS

CIDB IBS Sdn Bhd is a subsidiary of CIDB Malaysia that provides services to support the government and industry players in addressing gaps in the implementation of IBS initiatives under Construction Industry Transformation Programme (CITP) 2016-2020. Productivity as one of the goals for CITP 2016-2020, can be achieved through implementation of Industrialised Building Systems (IBS). Known as a method of achieving better quality and productivity in construction, a lot of projects had started to implement IBS.

Alongside with the increasing IBS implementation, CIDB IBS Sdn Bhd is here to assist the construction industry players through various programs, training and services we have developed.

IBS MANUFACTURER & PRODUCT ASSESSMENT & CERTIFICATION (IMPACT)

Providing Verification, Validation, Testing & Certification (VVTC) services, supported by IBS Manufacturer & Product Assessment & Certification – IMPACT and portal as well as IBS certification to manufacturers of IBS products.

TECHNICAL & ADVISORY

Offering IBS-related technical consultancy to project owners, professionals, manufacturers and contractors. Commercialisation of new IBS products (either independent or for the IBS Open System) developed by various R&D centres

IBS DESIGN TRAINING

Conducting IBS Training program to introduce accurate, effective and efficient Structural Analysis and design methods using advanced design software and customized Excel sheets for the design processes in the context of Malaysia's Industrialized System (IBS) design environment.

Hands-on approach training will also be provided to develop in-depth knowledge on precast concrete design method.

SUPPLY CHAIN MANAGEMENT (SCM)

Providing IBS Open System that caters for the affordable housing and renovation sub-sector ; developing standard components for Pre-Approved Plans (PAP) and offering Supply Chain Management (SCM) through IBS Virtual Warehouse

IBS MANUFACTURER PROGRAM (IMP)

IMP is a general IBS training program to develop & establish competitive, sustainable and high performing vendors via a structured capacity & capability program.

IMP is also a program to assist vendors in building the capabilities they need to compete in local and regional markets.

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*APPOINTMENT HAS TO BE MADE PRIOR TO VISIT

IBS MANUFACTURER AND PRODUCT ASSESSMENT & CERTIFICATION (IMPACT)
PRODUCT EXHIBIT IN IBS COMPONENT GALLERY
STANDARD DESIGN DEVELOPMENT OF MY IBS OPEN SYSTEM (MYIOS) HOUSE
IBS MANUFACTURER PROGRAM (IMP)
IBS VIRTUAL WAREHOUSE
IBS TECHNICAL ADVISORY
IBS TRAINING
IBS PRODUCT TALK

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55200 Kuala Lumpur

+603 9281 5910

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- Facilitate trade, market access, fair competition and consumer acceptance of product on a national, regional and international level

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3. Document Review
4. Factory/Plant Audit
5. Product Sampling and Testing
6. Recommendation
7. Review and Approval
8. Issuance of Certificate
9. Surveillance Audit
10. Recertification Audit, Additional Scope, Suspension, Withdrawal and Termination

*For enquiry, potential clients, may contact directly or send email to ccs@cream.my
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