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CREAM
CONSTRUCTION RESEARCH INSTITUTE OF MALAYSIA

CREAM

e-magazine

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about us

Construction Research Institute of Malaysia (CREAM) was established on 26 March 2004 as a Company Limited by Guarantee (SBMJ) under the Act Company 1965. CREAM became fully operational on January 1, 2006. Establishment CREAM is to be the research arm of the Industrial Development Board Construction (CIDB) Malaysia to encourage, promote and implement activities research and development (R&D) related to the national construction industry with Section 4(c), CIDB Act 1994 (Act 520). With the ability of knowledge and existing expertise, CREAM actively cooperates with parties interested in producing research that will benefit the sector construction. At the same time, CREAM also supports the development of the industry construction in a better direction through the quality and integrity of building materials when also offers testing, evaluation and certification services to industry players. CREAM will continue to be proactive in being active and reinventing the way we in doing something, to keep giving the best to all parties and always responsive to our customers.

vision

To meet the strategic needs of Research and Development in the Malaysian construction industry. CREAM is also committed to build partnerships with the industry's stakeholders and researchers while exploring and encouraging the development of a knowledge-based industries as well as ready to meet current demands and challenging changes.

mission

To make CREAM globally recognized as the leading institute for Research and Development (R&D) that drives quality, innovation, technology and skills towards achieving sustainability in the construction industry.

what we offer

- Research and Development
- Industry Consultancy and Engagement
- Lab Testing
- Product Certification
- Assessments - QLASSIC, SHASSIC, MyCREST and Sustainable Infrastar
- Certificate of Approval
- Inspection and Sampling
- Contractor's Quality Management System (CQMS)
- Forensic Investigation
- Technical Opinion
- Journal Publication

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Showcasing CREAM at the Prestigious BuildXpo International Construction Week (ICW) 2023

The International Construction Week (ICW) 2023 returned on a large scale with the theme 'Leading ESG in Construction'. It was officiated by the Minister of Public Works, Dato Sri Alexander Nanta Linggi, as the curtain raiser to this glorious event.

In conjunction with ICW 2023, CREAM took the centre stage as an exhibitor at BuildXpo 2023, which was the exhibition component of ICW 2023. While ICW 2023 focused on the conference aspect of the event, BuildXpo 2023 provided a prime platform for CREAM to showcase its diverse range of services and cutting-edge products within the construction industry.

With the key objective of highlighting its innovative solutions, CREAM engaged visitors with interactive displays and presentations, allowing attendees to gain first-hand insights into the company's expertise and technological advancements. The exhibition served as a dynamic space for networking, fostering collaborations, and exchanging ideas with industry leaders and professionals.

BuildXpo offered a unique opportunity for industry stakeholders to explore CREAM's latest projects, discuss industry trends, and understand the company's pivotal role in shaping the future of construction.

CREAM would like to express our sincerest gratitude to CIDB Malaysia for providing the opportunity to participate in ICW 2023 and for solidifying CREAM’s position as a forward-thinking contributor to the evolving landscape of the construction industry that emphasises on innovation, sustainability, and collaborative efforts.


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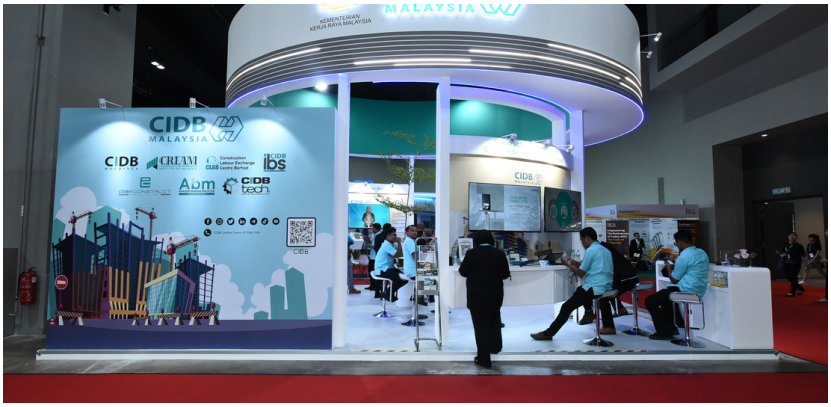
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Building a Sustainable Future: Embodied Carbon Inventory of Construction Materials

by Ts. Dr. Hj. Mohd Khairolden Ghani

INTRODUCTION

This article outlines the embodied carbon inventory data and process-based approach undertaken to achieve the above stated aim. The project aims to assist in the development of inventory data for embodied carbon construction materials as the reference for construction industry towards sustainability development.

The proposed key activities are given as follows:

- Embodied carbon inventory data for construction materials
- Guideline framework for the selection of low carbon construction materials

Throughout the last two decades, worldwide fears concerning the threat of climate change have intensified. Consequently, the 2015 Paris Agreement, which is akin to the 1997 Kyoto Protocol, could commit international efforts to tackle the worsening impact of climate change.

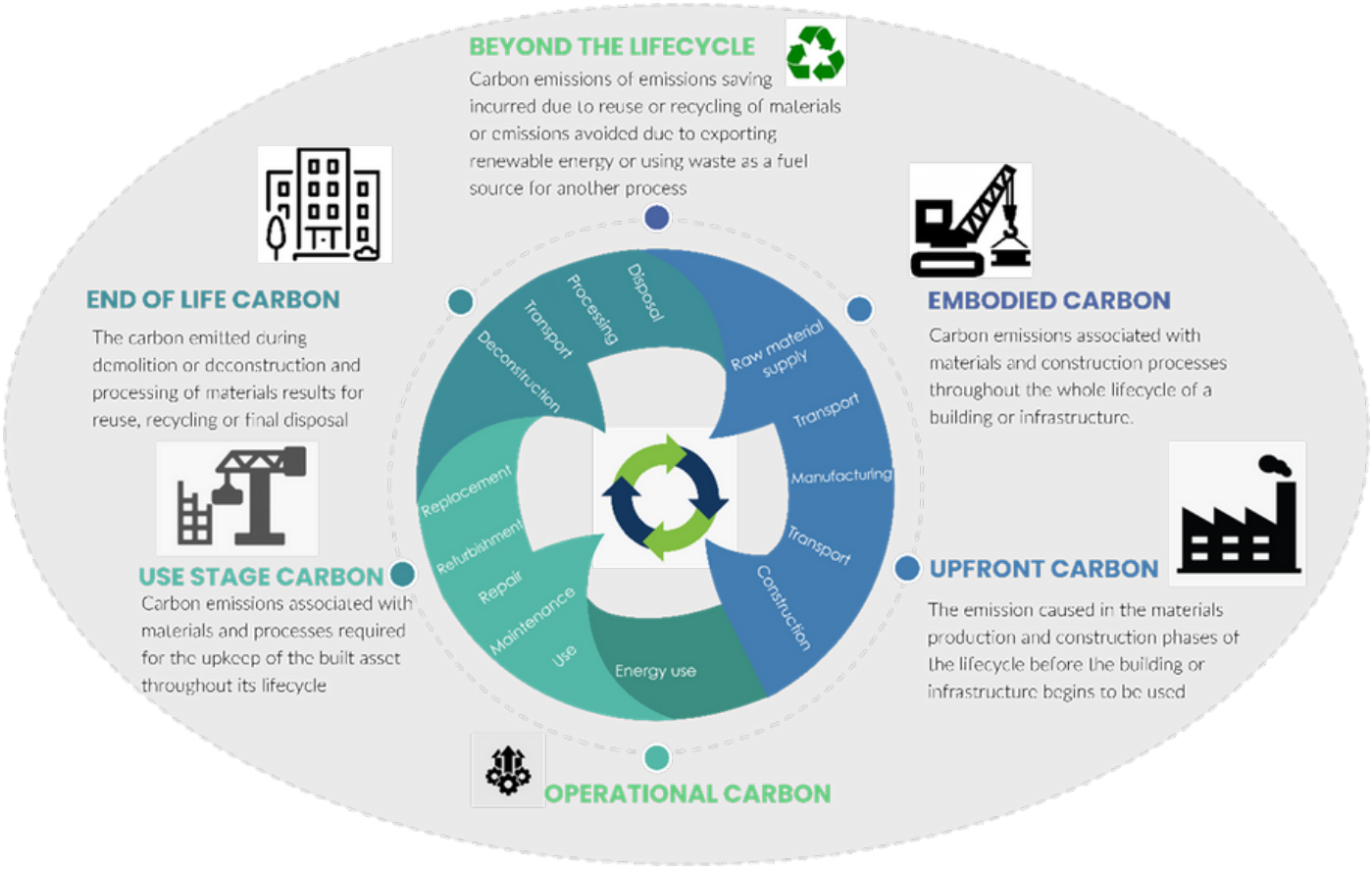


Figure 1: Life Cycle of Carbon Emissions

The expression "embodied carbon" refers to the total impact of all greenhouse gas emissions that emerged on building materials throughout its life cycle processes of extracting, transporting, manufacturing, disposing, and maintenance. Thus, lowering our carbon emissions by investigating the entire life cycle of a structure would become an extremely critical aspect in determining a building's total carbon footprint.

CARBON EMISSIONS

Carbon emissions (particularly carbon dioxide equivalent (CO2e) or greenhouse gas (GHG) emissions) correlated with energy use are referred to as embodied carbon (embodied energy). Carbon dioxide emissions are generated from chemical processes used throughout the extraction, manufacture, transportation, installation, maintenance, and demolition of structural substances. It is calculated as the total carbon emitted throughout its life cycle minus the carbon emitted during operations.

Embodied carbons are often calculated from cradle-to-gate, cradle-to-site, cradle-to-end of construction, cradle-to-grave, and cradle-to-cradle. The majority of datasets on embodied carbon are cradle-to-gate. The carbon embodied content in a manufactured product or material is often represented in kilo CO2e per kilogramme.

BUILDING LIFE CYCLE

CO2 emissions arise throughout a building's life cycle, thus implying the need for assessing its environmental performance. The building life cycle stages have been divided into stages which adapted from BS EN 15978: 2011 and shown below:

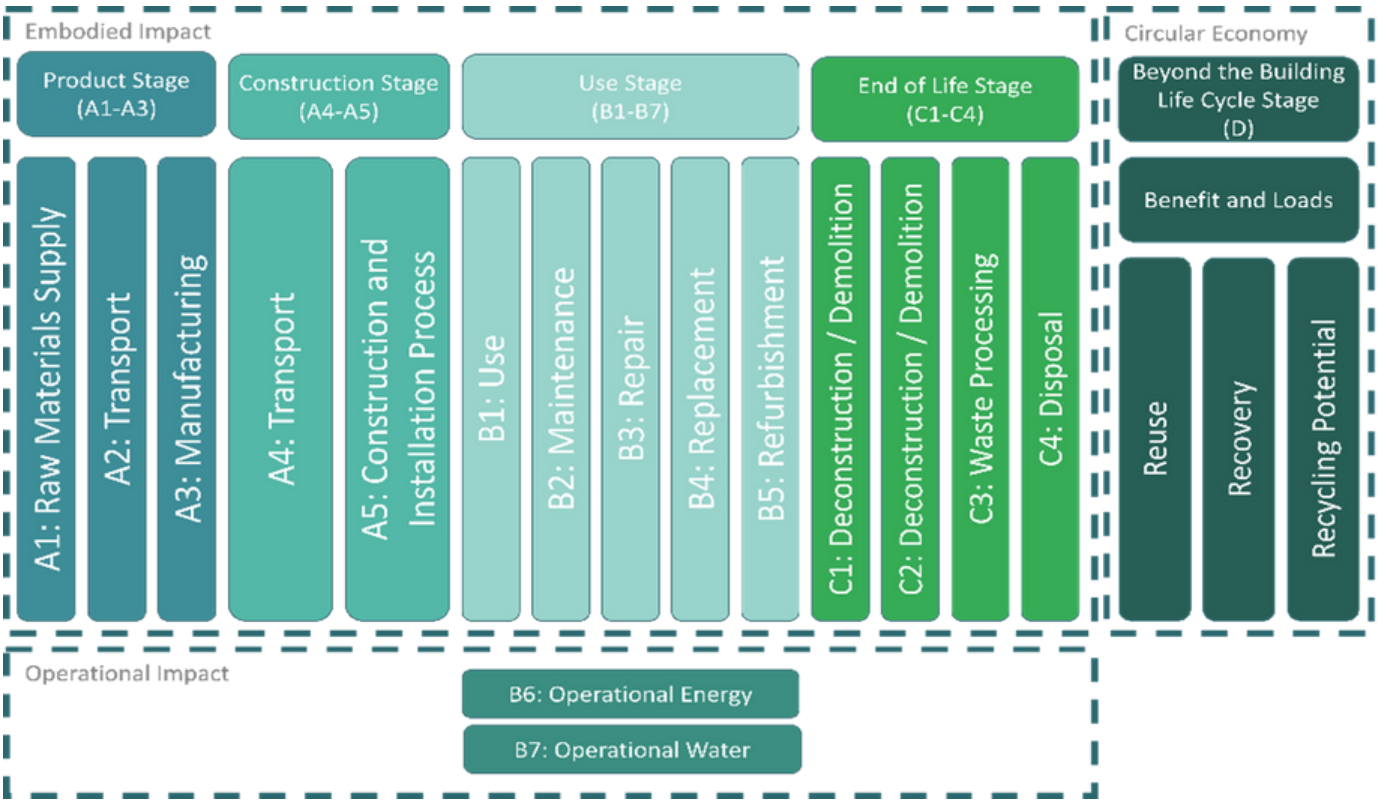


Figure 2: Building Life Cycle

LIFE CYCLE ASSESSMENT (LCA)

Life cycle assessment (LCA) is a tool or a process for assessing the potential environmental impacts and carbon footprint with well established procedures and methods by specific rules and standards developed by International Organization for Standardization (ISO).

Malaysian Standard with the reference number MS ISO 14044: 2008: Environmental Management – Life Cycle Assessment - Requirements and Guidelines adopted from ISO 14044: 2006 has been referred to as the main guideline to perform life cycle assessment for embodied carbon of construction and building materials.

The inventory data consists of relevant information as mentioned below:

Table 1: Inventory data for construction materials

1) Classification	The inventory data are divided into two (2) classifications: construction materials and building elements. Construction and building materials including raw materials that have been used in constructions, while building elements involve the main components of building structures.
2) Types	Various types of construction materials and building elements have been categorised according to the same category. This will provide alternatives to stakeholders to compare and select the data values based on the impact on the environment and cost.
3) Market Price	The current market price for each construction material and building element (Data is current at time of publication)
4) Embodied Carbon Indicator	The inventory data consists of indicators towards the indicator of embodied carbon values. The range of embodied carbon in the scale is referred from the UK- Inventory of Carbon & Energy (ICE) database. The Inventory of Carbon & Energy (ICE) has developed a database of the embodied carbon of building materials per kilogram, which can be used to see the relative emissions associated with materials compared to one another.
5) Embodied Carbon Factor	Embodied carbon factor is usually expressed in kilograms of CO2e per kilogram of product or material. The embodied carbon factor also known as embodied carbon coefficient. The embodied carbon factor (kg of CO2e per kg) is calculated by multiplying the quantity of each material (kg).
6) Unit	The functional unit for embodied carbon factor is kg of CO2e per kg.
7) Boundary	The embodied carbon factor published here is based on the cradle-to-gate. The cradle to the gate will include the extraction and production of materials and production.
8) Source of Embodied Carbon	The embodied carbon factors data are collated based on combination of local and international sources, including MyLCID SIRIM, environmental product declaration (EPD), Inventory of Carbon and Energy (ICE v3.0), Integrated Carbon Metrics Embodied Carbon Life Cycle Inventory Database (ICM), Building for Environmental and Cost Sustainability (BEES), Building Research Establishment (BRE) and other published resources.
9) Description	Detailed information on the application, properties and performance of construction materials and building elements.

Table 2: Range of embodied carbon indicator for construction materials

Embodied carbon indicator range (kg CO2e/kg)	Colour	Description	Colour Coding
0 - 0.5	Dark Green	Very Low	
0.5 - 2.0	Light Green	Low	
2.0 - 2.8	Yellow	Medium	
2.8 - 5.0	Orange	High	
> 5.0	Red	Very High	

Table 3: Range of embodied carbon indicator for building elements

Embodied carbon indicator range (kg CO2e/kg)	Colour	Description	Colour Coding
≤ 10	Dark Green	Very Low	
11 - 100	Light Green	Low	
101 - 250	Yellow	Medium	
251 - 350	Orange	High	
>350	Red	Very High	

The study consists of 500 embodied carbon data with 300 records are construction materials with 25 classes of materials used in construction. Additionally, 200 records are building elements for 13 classes of building elements.

EMBODIED CARBON REDUCTION STRATEGIES

This study aims to provide clear and practical guidelines on how to proceed with assessing embodied carbon in buildings. This may be beneficial to the targeted audience who recognize the relevance of embodied carbon and seek to conduct an embodied carbon assessment but are unclear where to begin. Several carbon mitigation initiatives worth considering include the following:

- Avoid or minimise the use of materials with a high embodied energy. Unless they assist in lowering operational energy, this may comprise sourcing materials locally and saving on the transportation energy.
- Reuse materials. Anytime necessary, seek to recover resources like brick, metals, fractured concrete, or wood. Salvaged resources often have a significantly smaller embodied carbon footprint than freshly made materials since they have consumed the carbon to produce them. Using recovered wood for instance, users conserve the energy that would have been wasted in chopping down the tree, moving it to the mill, and processing it, but the tree that never chopped down still does the task of carbon sequestration.
- Develop a lifelong and persistent structure. As deconstruction permits for simple reuse and recycling. Low-carbon design features comprise exposed concrete ceilings, aerated blockwork, rotational piles, and voided biaxial slabs, as well as low-carbon substitutes to typical building supplies. This necessitates direct parallels of possible measures to choose the optimum carbon-efficient one.
- Utilise materials with a high recyclable composition. This is especially relevant for metals. For instance, virgin steel might have a fivefold greater embodied carbon footprint than steel with high recycled content. Select supplies with high recycled content, like cement substitutes such as GGBS (ground granulated blast furnace slag) or PFA (pulverised fuel ash), have been the quickest easy solutions on certain projects.
- Reuse existing infrastructures rather than developing new ones. Compared to new construction, renovation and reuse projects mainly conserve approximately 50% and 75% of the embodied carbon emissions. This is notably important if the substructure and framework are intact, as it retains the majority of embodied carbon.
- Imply the usage of low-carbon concrete compositions. While emissions per tonne are not extremely significant, concrete's mass and prevalence make it the primary generator of embodied carbon in every project.
- Boost structural efficiency to the maximum. Since the majority of embodied carbon in the construction, explore strategies to optimise structural efficiency. Applying optimal value engineering approaches for wood framing, efficient structural components, and slabs ultimately maximizes efficiency and minimize material use.
- Reduce the reliance on carbon-intensive materials. Responsible use is crucial for materials with a large carbon footprint, like aluminium, polymers, and foam insulation. For example, while aluminium may enhance the appearance of the building, it is vital to use it sparingly given its enormous carbon footprint.

CONCLUSION

One of the major recommendations in the CIDB study in 2020 is to focus on reducing emissions by the five highest GHG contributors among construction materials namely ready mixed concrete, steel reinforcement, bricks, cement finishes and metal. While agreeing that it is high time for the construction industry to adopt green cement, Khairolden said that it, as well as the broader sustainable practices, requires collaboration among government agencies, construction companies, researchers, and the wider construction industry.

Due to the multifaceted nature of (sustainable practices), collaboration of various stakeholders is essential because sustainable construction practices are not isolated efforts, they require systemic changes across industries, technologies, regulations, and societal attitudes. The complexity of these changes necessitates a collective and coordinated approach to achieve meaningful and lasting results in the built environment.
Reducing embodied carbon in buildings is critical to achieving low carbon construction targets. Yet, the awareness and knowledge towards embodied carbon and information on how to reduce embodied carbon is still an infant in the Malaysia construction sector.

This study provides information on 500 embodied carbon data for various construction materials and building elements. The information on material cost has also been included to enable the construction stakeholders such as designers, architects, and contractors to compare the environment and cost solution.

This study also intends to show how the embodied carbon of the construction materials can be accounted for and included in an assessment by providing the assessment of embodied carbon. Furthermore, case studies and several examples that demonstrate how such data can be used to calculate embodied carbon enable informed choice to be made about material selection.

Finally, several strategies for reducing embodied carbon have been delineated to provide a guideline for the industry to follow. This report intends to elevate consciousness of the climate and biodiversity crises, and the pressing need for the construction sector to act immediately and shift to low-carbon construction.

ACKNOWLEDGEMENT

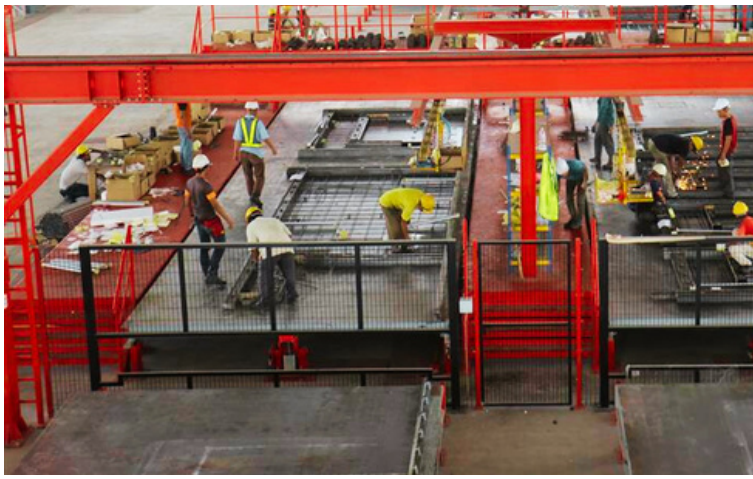
Construction Research Institute of Malaysia (CREAM) a research institute of Construction Industry Development Board Malaysia (CIDB) and School of Civil Engineering, Universiti Teknologi MARA (UiTM) Shah Alam has undertaken the development of embodied carbon inventory data for construction materials as a guideline for construction industry in Malaysia.

Design for Manufacturing and Assembly (DfMA)

by Centre for Advanced Construction Technology and Innovation (CACTI)

The urge for a transition from the current conventional method to a more systematic and automatic method to boost construction efficiency was sparked by the rising construction demands in Malaysia. Thus, the Industrialised Building System (IBS), also known as Prefabricated Construction, was first adopted in the 1960s and remains in use to date. IBS is a construction method that involves fabricating the components in a controlled setting before they are delivered, installed, and finished in a building with minimal extra site work. However, the system has a major drawback whereby some materials or products may need to be modified or improved on-site, which takes time and can even jeopardize its safety characteristics. An example is the reusable formwork system consisting of the beam and column moulding forms, tunnel forms, and permanent steel formworks after which concrete is poured on the job site. Thus, the authority is trying to compel the concept of Design for Manufacture and Assembly (DfMA) into the current construction ethics and code.

DfMA is the newest catchphrase in the worldwide resurgence of prefabrication and construction modernisation. The use of prefabrication techniques in construction has increased productivity in the traditionally labour-intensive sector of the economy. DfMA is a new major player in the construction industry whereby the manpower and time required to construct structures are minimised by planning more work off-site while ensuring that the work sites are safe, conducive, and limitedly influence the surrounding living spaces.



Source: The Star

Any manufacturing process will always begin with "design" and this step will ultimately determine how much it will cost to produce a product. DfMA helps identify the most effective method for product design and development at this point. The DfMA engineering methodology places a strong emphasis on manufacturing efficiency and fabrication performance. It entails considering a range of technologies and methodologies that support off-site fabrication, from prefabricated parts to fully integrated assemblies across structural and Mechanical, Electrical, and Plumbing (MEP) disciplines. According to DfMA, focusing on two practical design elements of how a component will be manufactured and integrated into a product may increase manufacturing efficiency. Previously, DfMA applied mostly to factory-made, mass-produced parts that would be combined into bigger, mass-produced items intended for an end user, all in a factor. As manufacturing technology advances, the system is increasingly and frequently utilised to make things that can be customised in varying degrees, a procedure known as customisation.

The capacity to customises has expanded the usage of DfMA to include the design of more complex, expensive, and low-volume items, such as buildings. The consultees for the Overlay concur that, while DfMA is a technical matter, it is also a concept that should be seen as an extension or progression of the designer's regular working techniques. Designers have always aimed to provide the best service possible for their clients. The consultees wish to debunk the notion that DfMA is a barrier to outstanding design or that it only extends to a few newly constructed sectoral building types. Furthermore, DfMA may produce exceptional, prize-winning architecture with few restrictions. It should be used by all forms of organisations including microbusinesses, is suitable for all types of projects including smaller ones, and works on existing structures.

DfMA places a strong emphasis on the value of designing components to be simple to assemble and manufacture. The DfMA strategy calls for a seamless transition between design and construction when used in the construction industry. The project delivery methods should be the main focus of the design, which should make use of off-site manufactured components whenever possible and set up efficient logistics and assembly of these components on-site. It is a revolutionary approach to the construction industry. Figure 1 below shows the ideology of DfMA.

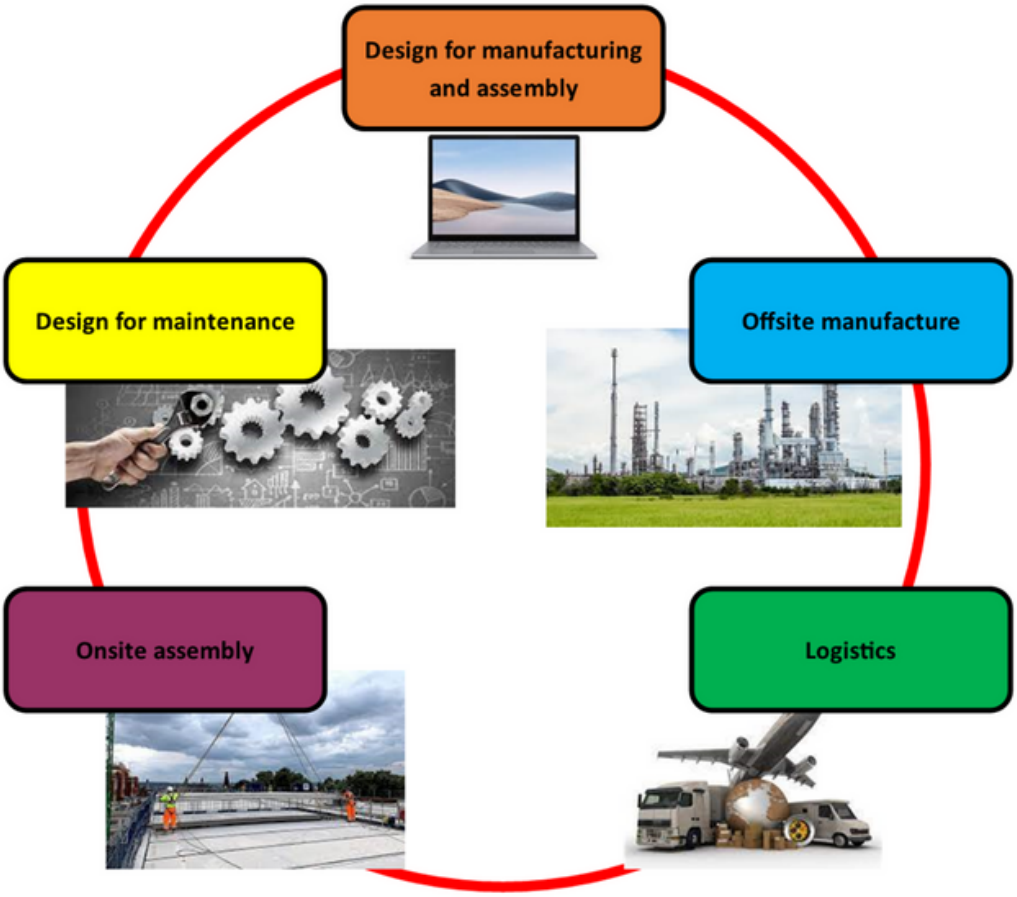


Figure 1: DfMA ideology across the steps of off-site construction

There are five key benefits of adopting DfMA, namely improving productivity, reducing the number of labourers, controlling construction setting, improving quality control, and minimising construction waste. Despite the benefits, DfMA faces several major setbacks such as the negative public view on prefabricated buildings, unwillingness to adopt DfMA, and high start-up costs. Above all, the traditional procurement procedure may be the greatest obstacle to the wide implementation of DfMA.

The application of DfMA is based on 14 key principles as listed by Swift and Brown (2013), Bogue (2012), and Emmatty and Sarmah (2012). These 14 principles are important as they contribute to minimizing the time and costs spent while improving the quality at the same time. The principles are:

1. **Strive for error-proof design**
2. **Easily manufactured designs**
3. **Design for straightforward part orientation and use**
4. **Create designs with a specific assembly method in mind**
5. **Design components that are multipurpose and multiuse**
6. **Take modular design into account**
7. **Design for automated or mechanised fabrication**
8. **Use common and commercially available parts**
9. **Try to use comparable materials**
10. **Make every effort to only use eco-friendly materials**
11. **Reduce the number of parts**
12. **Reduce and standardise connector varieties and quantities**
13. **Use fewer fragile components**
14. **Avoid putting excessive emphasis on tolerances or surface finish**

Several initiatives using DfMA have been performed in recent years, reflecting a favourable view of its significance. One of the projects is the construction of a highway bridge in the United Kingdom where DfMA implementation minimised the number of parts used to construct the bridge, expedited the operation, and assisted in choosing the best or most secure material of precast beams for commercial use. DfMA was also utilised for the coordination of LED tubes and electric wires design in the curtain wall system to build a high-rise commercial building in China. These instances highlight typical approaches of implementing DfMA in the construction industry.

The alliance of the project's participants through the implementation of an integrated approach in the building supply chain will allow DfMA to be implemented successfully. DfMA helps a lot with development and construction; however, its implementation requires the responsibility and participation of everyone engaged in the project, including the authority, developer, designer/consultants, manufacturer, and contractor. Each of these stakeholders plays an essential role in the success of DfMA implementation.

A significant enabler in strengthening DfMA integration and alliance within the construction supply chain is Building Information Modelling (BIM). To develop the DfMA concept to its maximum potential, BIM should be used from 2D through 7D. In simpler terms, BIM should be used thoroughly, starting from the simple construction model to a more advanced stage. The structural design must, however, be in accordance with the specification for precast components as per the Standard for the Design, Manufacture & Construction of Precast Concrete Structures (CREAM). Additionally, the connection's design should use a lot of component repetitions and optimal standardisation to reduce the amount of effort required during site assembly. As stated in the IBS catalogue for precast concrete building systems, more productivity can be attained by standardising component design.

SHASSIC Certificate Receiver

CREAM would like to congratulate the following project team for their best SHASSIC achievement. Congratulations!

SHASSIC

Project Name:

BEPCC for Sarawak Methanol Jetty Facility Project, Bintulu, Sarawak

Developer:

Sarawak Petchem Sdn. Bhd.

Contractor:

China Communications Construction Company (M) Sdn. Bhd.

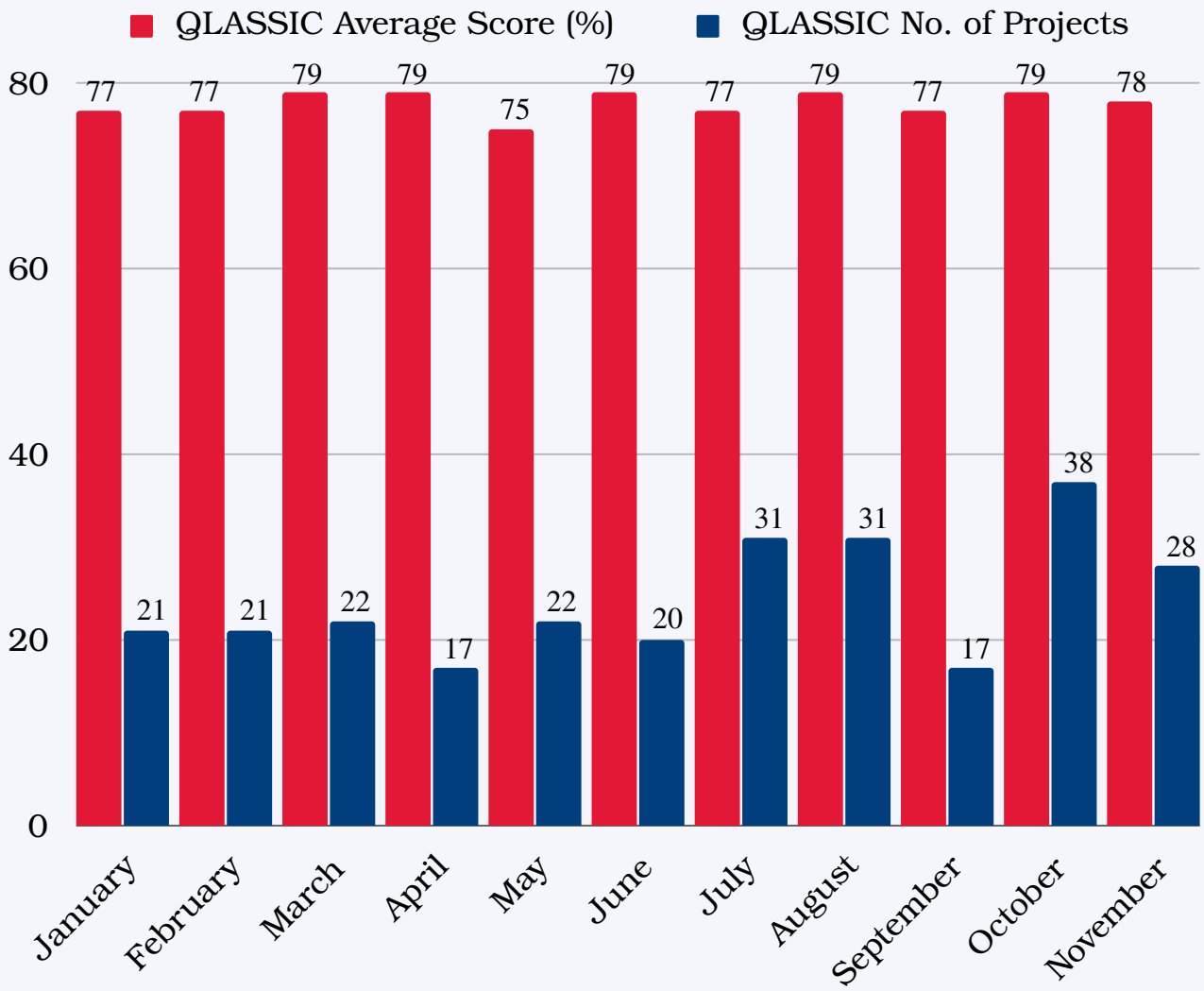
SHASSIC Score:

99.58%

★★★★★

More info on SHASSIC:

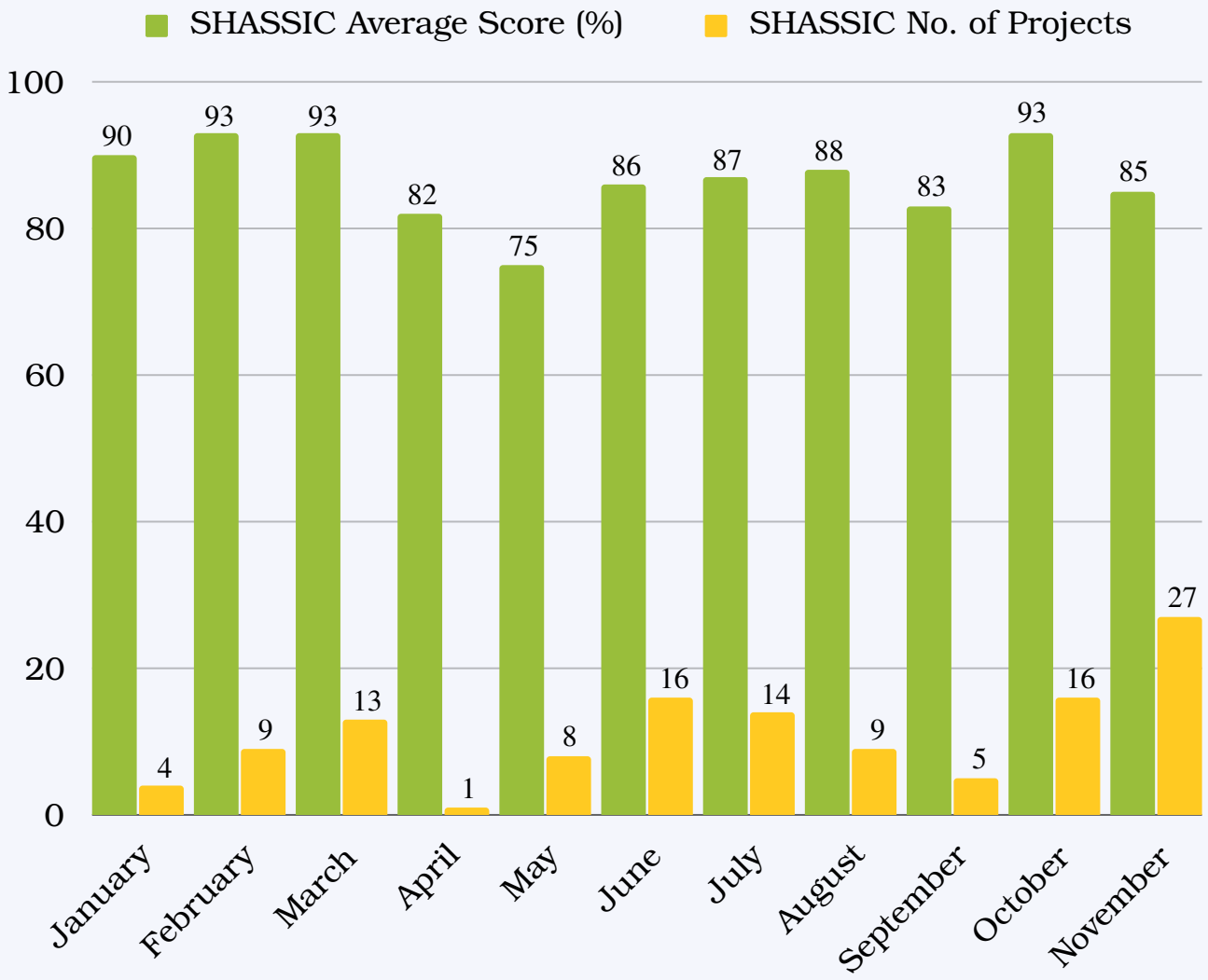
QLASSIC



More info on QLASSIC:

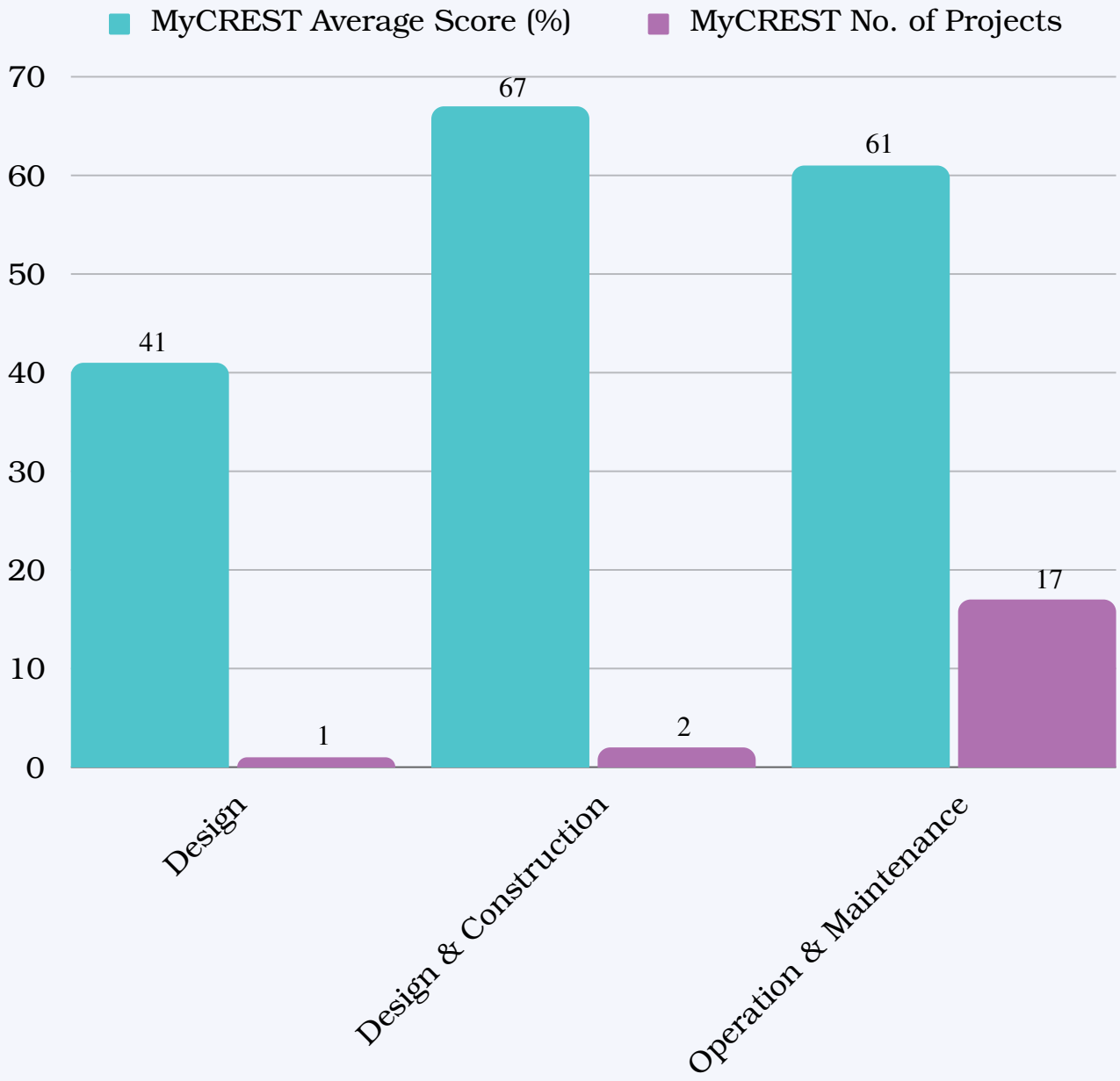
SHASSIC

SHASSIC
Safety and Health Assessment System in Construction

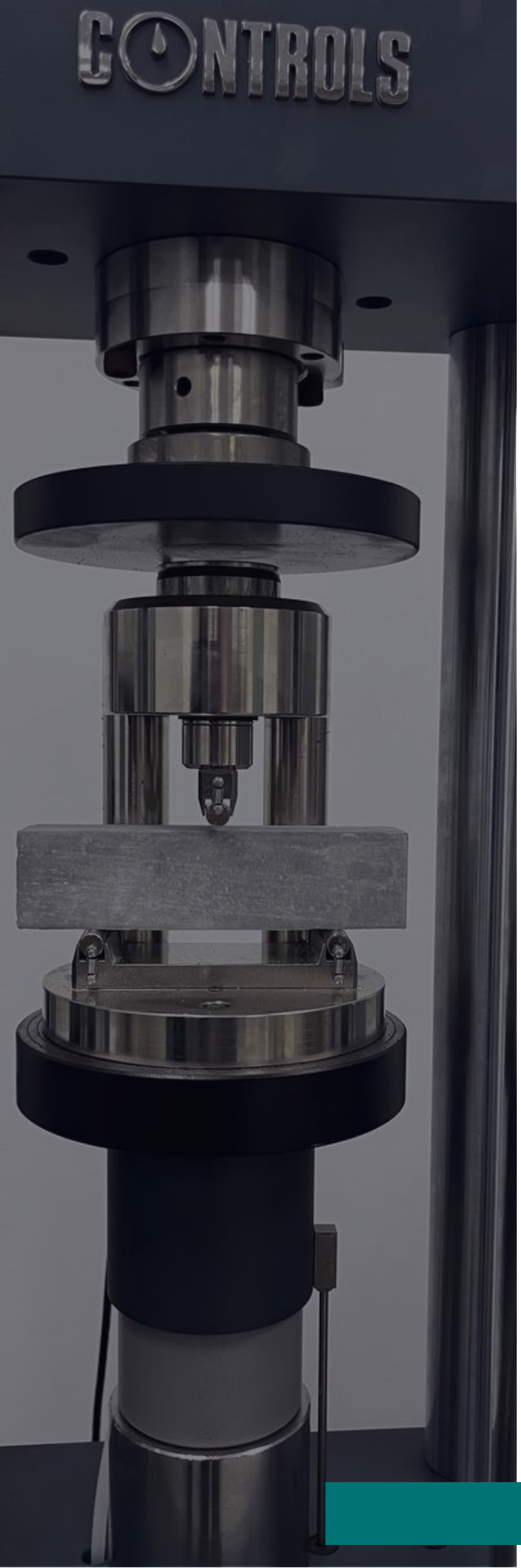


More info on SHASSIC:

MyCREST



More info on MyCREST:

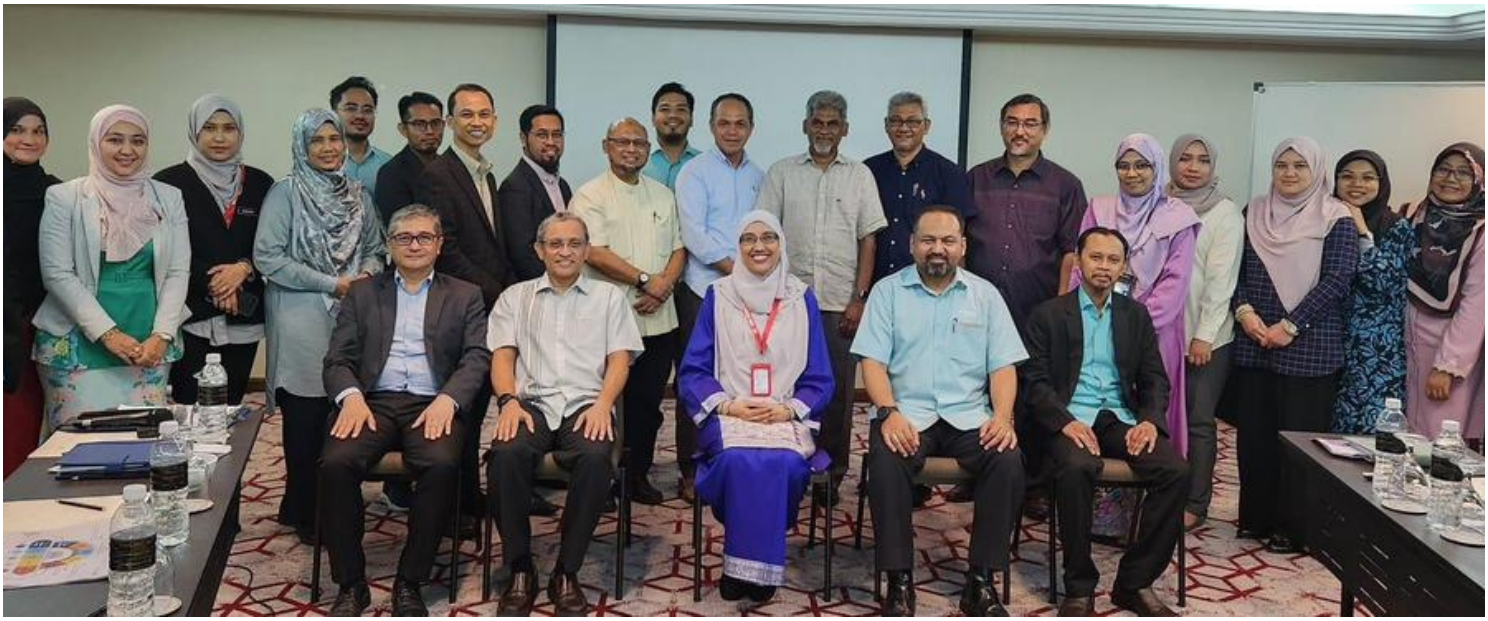


highlights on November activities

Validation Workshop on Development of CIDB Facilities Management Plan (CFMP)

Date : 6 November 2023

Venue : Cyberview Resort and Spa, Cyberjaya



The one-day validation workshop on Development of CIDB Facilities Management (CFMP) was held at Cyberview Resort and Spa, Cyberjaya, Selangor on 6 November 2023. The workshop was attended by representatives from the Contractor Development Division of CIDB, CREAM, UiTM Shah Alam and subject matter experts (SMEs) from professional bodies, associations, private sectors and government sectors with a total of 30 participants.

The aim of the workshop was to validate the findings of issues and challenges of facilities management, Short-term, middle term and long-term strategies of facilities management as well as the way forward for facilities management for CIDB. The workshop was separated in two sessions – the morning session was to discuss about issues and challenges, and the evening session was to discuss about short-term, middle term and long-term strategies of facilities management as well as the way forward of facilities management for CIDB. All participants in the workshop join together for an open discussion and share their opinions and comments on the findings. The workshop has successfully provided a positive outcome and the participants ultimately reached a consensus on the development of CIDB Facilities Management Strategic Plan (CFMP) and its strategies.

Validation workshop on Trade-Level Productivity Measuring Tool For Building Construction Projects (TL-PMT)

Date : 8-9 November 2023

Venue : Lexis Port Dickson, Negeri Sembilan

The final workshop for Trade-Level Productivity Measuring Tool (TL-PMT) was held on 8 - 9 November 2023 at Lexis Port Dickson, Negeri Sembilan. The two-day workshop was attended by CIDB representatives from four states: Johor, Kuala Lumpur, Selangor, and Sarawak. The attendees included directors, enforcers, and PICs who assisted in the data collection with the industry.

The workshop was organised with the objective of presenting and validating the data that had been collected from the industry to test the TL-PMT template that had been developed. Attendees were able to scrutinize the data and provide feedback on the accuracy of the collected data.

Throughout the workshop, we actively sought feedback from all participants, and received a diverse range of insightful comments and suggestions. The input from each individual proved to be a valuable asset in achieving the project's success. Overall, the feedback helped us improve and refine our work.

Kursus Pembinaan Berdaya Tahan 2023- Zon Pantai Timur

Date : 8-9 November 2023

Venue : Hotel Primula Kuala Terengganu, Terengganu

On September 8th and 9th, 2023, Kursus Pembinaan Berdaya Tahan took its final tour at Hotel Primula Kuala Terengganu, Terengganu. This two-day course aims to provide exposure and train the industry and PBT to use the guidelines developed by CREAM for assessing the risk of landslides and floods in an area before development takes place.

On the first day, the course started with a session on Landslide Overview in Malaysia by Dato' Ir. Dr. Che Hassandi Abdullah and then continued with a session on Landslide Vulnerability Assessment & Risk Classification by. Dato' Zakaria Mohamad. The day then ended with the third session on Guidelines for Landslide Vulnerability Assessment and Risk Index for Critical Infrastructure in Malaysia by Ts. Dr. Mastura Azmi.

On the second day, the course continued its session with Ir. Hjh. Bibi Zarina Che Omar Flood Overview in Malaysia. The course then continued with a session on Flood & Disaster Risk Reduction (DRR) by Mr. Noor Hisham Ab Ghani and then ended with a session on Guidelines and Manual for Flood Risk Assessment and Flood Vulnerability Index Malaysia by Sr. Dr. Muhammad Wafiy Ramli.

CREAM would like to thank to CIDB Malaysia, all speakers, participants and every one who were involved with Kursus Pembinaan Berdaya Tahan 2023. We hope to see you again in the next events in 2024!

The Progression of Contractor Management Courses in the Construction Industry: Training Needs Analysis (TNA)

Date : 14 November 2023

Venue : Pulse Grande Hotel, Putrajaya

A focus group discussion (FGD) was held at Pulse Grande Hotel, Putrajaya as a validation process of the Training Needs Analysis (TNA) for the contractor management courses in the construction industry. The fourth and final FGD aimed to obtain the technical committee's final consensus regarding the TNA validation. All findings and recommendations from the previous FGD[u1] were gathered, analysed, and presented in this FGD. The session was moderated by Ts. Dr. Hj. Mohd Khairolden Ghani, CREAM's manager for the Construction Industry Consultancy Division. It was also attended by Tuan Haji Suhaimi Mansor, Senior General Manager for the Contractor and Levy Sector, Construction Industry Development Board (CIDB).

The necessity for the courses was deliberated among clients from Tenaga Nasional Berhad (TNB), Suruhanjaya Perkhidmatan Air Negara (SPAN), and Jabatan Kerja Raya (JKR). This FGD was also attended by several key organisations that represented both clients and contractors, namely Jabatan Kerja Raya (JKR), Jabatan Landskap Negara (JLN), Ministry of Finance (MOF), and Dewan Bandaraya Kuala Lumpur (DBKL). Collaboration among the technical committee was highly encouraging and prompted the success of the final FGD. All inputs were gathered and analysed to prepare the final report of the TNA. It is hoped that the final validation of the TNA for the contractor management courses will enhance the courses as well as the contractors' capability in providing the best services to the clients.

CREAM would like to thank you Bahagian Pembangunan Kontraktor (BPK) of CIDB for granting this project to be carried out by CREAM.

DIG.IT.ALL Forum Series 2023- Embracing Digital Technology

Date : 15 November 2023

Venue : MITEC, Kuala Lumpur

The final series of the DIG.IT.ALL Forum Series took place on the 15th of November 2023 at Malaysia International Trade and Exhibition Centre (MITEC), Kuala Lumpur. The event, in collaboration with the Malaysia Board of Technologists (MBOT) has received a total participation of more than 70 people crowd, aiming to increase the awareness among professionals on technologies in Construction 4.0 and the latest technologies being used in the construction industry.

The day started off well with welcoming the audience, followed by a short Du'a recitation by Mr Shahir. The forum was officiated by CREAM's Construction Industry Consultancy Division Manager, Ts. Dr. Mohd Khairolden Ghani with his meaningful opening speech before Ms Najwa, MBOT's Engagement & Special Projects Division took charge of delivering her introductory presentation on MBOT's latest news and registration process.

DIG.IT.ALL Forum Series 2023- Embracing Digital Technology

Date : 15 November 2023

Venue : MITEC, Kuala Lumpur

The morning forum started after the morning tea break, introducing 4 key figures in the construction technology field. There were Mr Arivagara Pavithran from Maxwell CFM, Sr Zuhry from MCM Value and Mr Gene Ong from Cobler. The session was moderated by Mr Sharainon of Microcorp, highlighting the importance of having a digital sustainability strategy to embark on the recent technological changes especially for operation and post-construction phase. The morning session was concluded with Q & A session with the audience.

The afternoon session started with a 30 minutes presentation by Mr Hans Weeames of Turner & Townsend. Having numerous experience of sustainability strategy background, the Deutsch spoke about ways of achieving net zero emission by forming the foundation through carbon accounting. The afternoon session continued with the final presentation from Hertford Systems team on virtual tour at one of their ongoing project in UCSI university which highlighted the implementation of digital twin and mixed reality technology in modern construction.

The DIG.IT.ALL Forum Series has indeed captured the involvement of numerous professionals from different background who are ready to embark on a new journey through digitalization and emerging technologies. For more event related to the emerging tech, stay tuned with us and be ready to join us in our upcoming events, brought to you by CREAM and CIDB Malaysia.

Workshop with Subject Matter Expert (SME) on the Enhancement of Contractor Capability and Capability Assessment Program Certificate (SCORE)

Date : 20 November 2023

Venue : Tenera Hotel, Bandar Baru Bangi, Selangor

The SCORE Program (also known as "Penilaian Keupayaan dan Kemampuan Kontraktor") was developed by CIDB Malaysia in collaboration with SME Corp to provide an effective gauge of local contractors' strengths through its stringent and comprehensive rating system. A series of improvement sessions have been scheduled for the program, which begins with a workshop held at Tenera Hotel, Bangi and moderated by Ir. Ts. Dr. Mohd Khairul Kamarudin, a lecturer from UiTM, Shah Alam. The main objective of the session was to obtain feedback from the expert panels on the SCORE Program.

This workshop was attended by experts representing each parameter in the SCORE Program, including representatives from CIDB, Kementerian Kerja Raya (KKR), Jabatan Kerja Raya (JKR), Malaysian Institute of Accountants, Chartered Institute of Building (CIOB) Malaysia, Rating Agency Malaysia (RAM), Deloitte, Master Builders Association Malaysia (MBAM), Malaysian Productivity Corporation (MPC), Prasarana, TRC Synergy Berhad, WCT Holdings Berhad, MBSB Bank, Unit Penyelarasan Pelaksanaan (ICU) JPM, Persatuan Kontraktor Bumiputera Malaysia (PKBM), IJM, YTL Cement Berhad, and Persatuan Kontraktor Infrastruktur & Pengurusan Fasiliti Bumiputera (PKIPFB).

All of the representatives were very cooperative in sharing their opinions and suggestions for improving the SCORE program. All the inputs were gathered in this workshop and will be reported to CIDB Malaysia.

The Train the Trainer (TTT) for Contractor's Quality Management System (CQMS)

Date : 22 November 2023

Venue : CREAM, Sunway Putra Tower Kuala Lumpur

The Construction Research Institute of Malaysia (CREAM) recently conducted a Train The Trainer (TTT) course for the Contractor's Quality Management System (CQMS). It was moderated by CREAM's CEO, Ir. M. Ramuseren, to provide trainers with the necessary skills and knowledge to develop and implement their own CQMS to perform or supervise the performance of training activities.

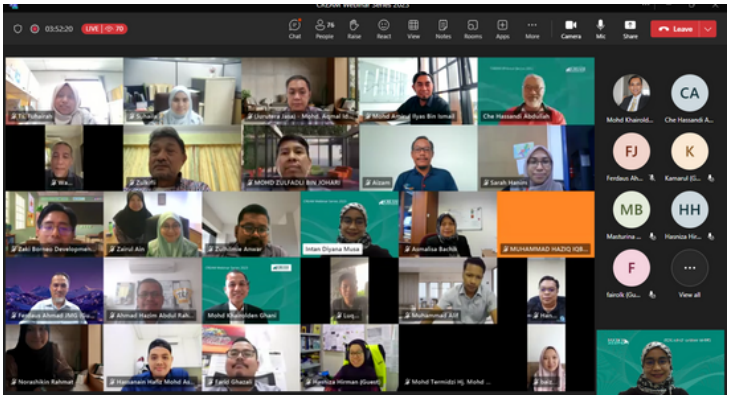
The course was held at CREAM's Main Meeting Room on 22 November 2023 with a total of 11 participants in attendance. These participants were professional contractors who were also CQMS trainers. It was divided into two parts: the first part was a course briefing session conducted by Ir. M. Ramuseren followed by the Objective Test and interview session in the form of an oral presentation by the participants. Their marks were evaluated after both tests and taken into account when determining the final grade.

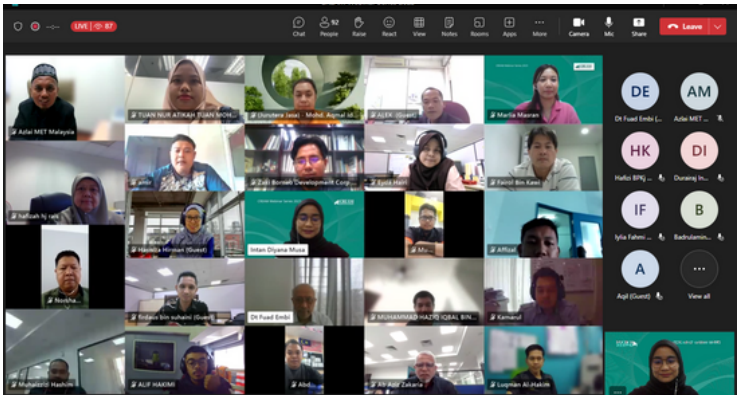
The TTT course for CQMS was designed to provide participants with a comprehensive understanding of the Contractor Quality Management Systems in the construction industry. It covered a wide range of topics, including the principles of quality management, CIS 29 requirements, and the implementation of CQMS in construction projects. The course was specifically designed for trainers and consultants involved in the construction industry where the participants included professionals from construction companies, consultants, and government agencies responsible for quality management in construction projects. By equipping trainers with the necessary tools, CREAM aims to enhance the quality and efficiency of construction projects in Malaysia.

CREAM Webinar Series 2023

CREAM Webinar Series 2023 in is a monthly program organised by CREAM and it is a part of our efforts to initiate conversations on issues, challenges, opportunities and initiatives for the construction industry and beyond.

The theme for this month's webinar is "**Kesiapsiagaan Menghadapi Monsun Timur Laut (MTL) dan Perubahan Iklim"**





Session 1: Pemantauan dan Amaran Awal Tanah Runtuh
28 November 2023
Speakers:

- Dato' Paduka Ir. Dr. Che Hassandi Abdullah
  Mantan Pengarah Kanan, CREaTE Jabatan Kerja Raya Malaysia (JKR)
- Dr. Ferdaus Ahmad, P.Geol
  Ketua Pen. Pengarah Kanan, Caw. Kepakaran (Geologi Kejuruteraan) Bhg Perkhidmatan Teknikal Jabatan Mineral & Geosains Malaysia (JMG)

No of participants: 70 pax

Session 2:Risiko Bencana Banjir dan Langkah-Langkah Pencegahan
30 November 2023
Speakers:

- Encik Azlai Taat
  Ketua Penolong Pengarah, Pusat Operasi Cuaca dan Geofizik Nasional MET Malaysia
- Datuk Ir. Ahmad Fuad Embi
  Mantan Timbalan Ketua Pengarah, Jabatan Pengairan dan Saliran (JPS) Malaysia

No of participants: 82 pax

Program Jelajah BINA Townhall Se-Malaysia - Central Region

Date : 29 November 2023

Venue : Dash Box Hotel Cyberjaya

Program BINA Townhall Se-Malaysia hosted by CIDB Malaysia and CIDB IBS Sdb. Bhd. started its series of tours in the Central Region which took place on 29 November 2023 at Dash Box Hotel Cyberjaya. This program is intended as a medium for disseminating the latest policy information on compliance, enforcement, and monitoring of construction projects that use the Industrialised Building System (IBS) to the authorities and local industry players. This refers to the results of the 80th National Council for Local Government Meeting (MNKT-80) held on 14 June 2023.

The BINA Townhall program started this series of tours in the Central Region targeting industrialists around Kuala Lumpur, Selangor, and also Putrajaya. The event which started at 8:30 this morning was officiated by the Selangor State CIDB Director, Mr Jasmi Mohd Salleh who hopes that this program can be a platform for disseminating information, encouraging cooperation, and ensuring that new policies that have been improved especially for the private sector can be adapted smoothly.

The townhall received high involvement from local construction industry players with about 150 participants consisting of Local Authorities (PBT), State JKR, ICU JPM, District Officers, government agencies , housing developers such as MGB Berhad, Gamuda, Continum Land (M) Sdn Bhd, contractors, IBS manufacturers, consultants, as well as IBS-related companies.

The morning session of the townhall was moderated by Ts. Dr. Hj. Mohd Khairolden Ghani and the evening session was moderated by Ts. Intan Diyana Musa, who are both managers from Construction Research Institute of Malaysia (CREAM). CIDB will continue direct involvement in five other zones and this program is expected to end in June 2024.

Perlis Construction Week 2023

Date : 30 November 2023

Venue : Universiti Malaysia Perlis (UniMAP)

Faculty of Civil Engineering & Technology Universiti Malaysia Perlis (UniMAP) in collaboration with the Construction Industry Development Board (CIDB) and the Perlis State Contractor Service Center (PKK) organized Perlis Construction Week 2023 (PCW'23) in an effort to empower the collaboration network of the three parties to drive a quality Malaysian construction industry.

CREAM's Researcher, Sr Yusrin Faiz Abd Wahab has been invited as a guest speaker to deliver a talk on the latest guidelines on the critical infrastructure protection towards landslides and floods that need to be taken seriously by the parties involved. Our critical infrastructure isn't always resilient because of the growing risk of landslides and floods brought on by extreme weather events. Thus, an interconnectedness of our critical infrastructure are essential and need to be protected during disasters.

The completion of PCW'23 includes a ferro-cement competition, a video competition themed on the experience of undergoing industrial training and a post-graduate colloquium held from 25 to 29 November 2023.

Academics alike play a role in ensuring the sustainability of the nation's construction industry through good collaboration with technical agencies such as CIDB. The highlight program of PCW'23 also involved the presence of more than 60 contractors around Kedah & Perlis.

Also present during the PCW'23 were Senior General Manager, Technology Development Sector of CIDB, Puan Zainora Zainal, Dean Faculty of Civil Engineering and Technology, Prof Madya Ts Dr Che Zulzikrami Azner Abidin, Director of Perlis Contractor Service Center, Puan Intan Sharizat Bt Muhamad Nasir, Director of CIDB Perlis, Sr. Rosli B Zainon, Director of CIDB Perak, Kedah and Penang, Director KV Arau and Kangar, and Chairman of IEM Kedah/ Perlis.

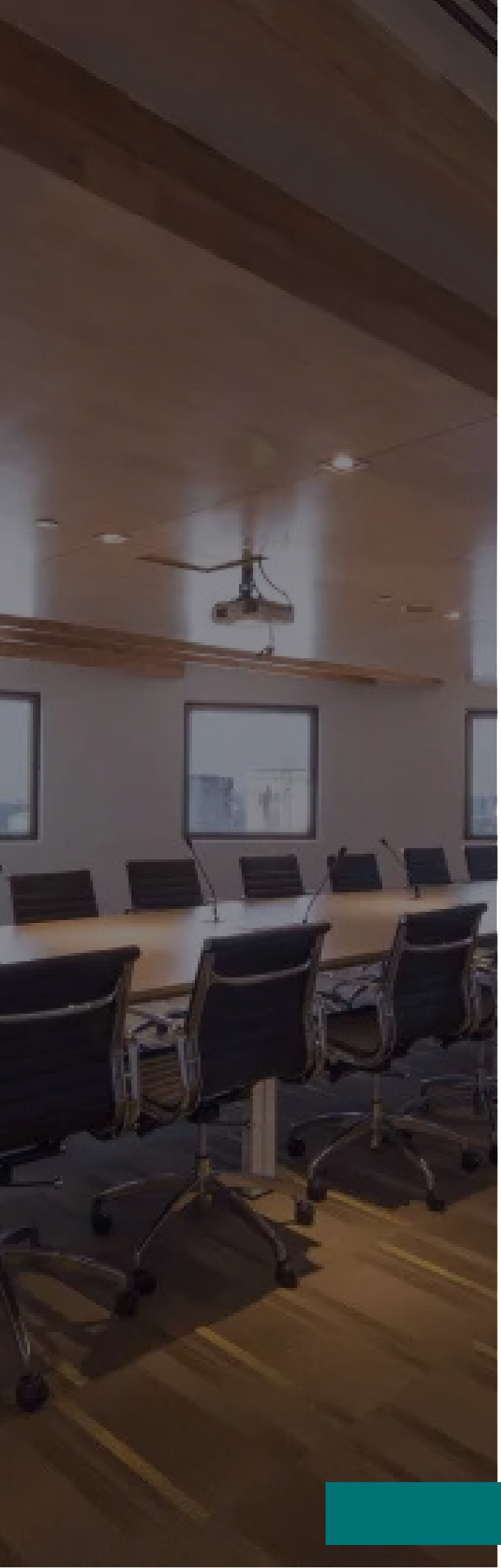
Promoting Sustainability Agenda in Construction: Insights from the ESG Conference

Date : 30 November 2023

Venue : Armada Hotel, Petaling Jaya

On 30 November 2023, Dr. Khairolden presented a paper at the ESG (Environmental, Social, and Governance) conference organised by the Academy of Concrete Technology (AOCT) at Armada Hotel, Petaling Jaya, Selangor. The paper, titled "Promoting Sustainability Agenda in Construction," delves into crucial aspects of sustainability within the construction industry, encompassing government initiatives, sustainability rating tools, and future megatrends such as digitalisation and ESG considerations. It sets the stage on the importance of sustainability in the construction sector and outlines the escalating global concern for environmental impact, social responsibility, and governance practices within the industry.

The presentation highlights key government initiatives aimed at promoting sustainability in construction. This involves exploring the policies, regulations, and incentives implemented by various governments to encourage environmentally friendly and socially responsible practices in the construction domain. The paper also sheds light on future megatrends that are anticipated to shape the landscape of the construction industry and delves deeper into the impacts of digitalisation on construction processes by emphasising the role of technology in enhancing sustainability. Additionally, it explores the growing importance of ESG considerations and their integration into construction practices.



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Mohamad Razi Ahmad Suhaimi
Pengurus, Bahagian Teknologi & Inovasi,
CIDB Malaysia

Mohd. Shaharil Mat Tob
Ketua Bahagian Latihan dan Penilaian,
CIDB IBS Sdn. Bhd.

Zaharuddin Mohamed Tambah
Ketua Bahagian Teknikal & Teknologi,
CIDB IBS Sdn. Bhd.

21 Disember 2023 | Khamis | 9am - 12pm

Sesi 2: Penggunaan Teknologi IBS dalam Meningkatkan Kualiti dan Produktiviti Pembinaan

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Ir. Dr. Zuhairi Abd. Hamid, FASc.
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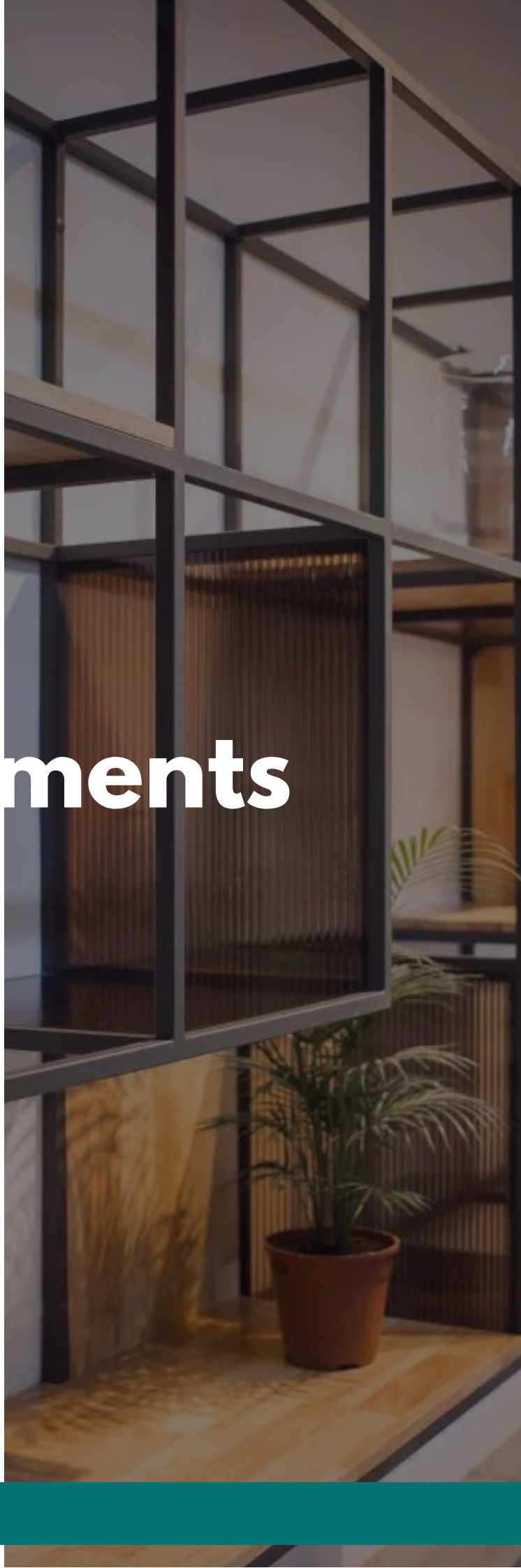

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