

e-CONSTRUCT

BUILDING INFORMATION MODELLING MAGAZINE

MYBIM SATELLITE

Making BIM The Way Forward

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



JELAJAH 2018

VISI ANDA, MASA DEPAN KITA





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WELCOME NOTE *BIM Ready!*

BIM transforms the construction industry by increasing efficiency, productivity and quality. BIM ability to design, visualize, simulate and analyse the key physical and functional characteristic of each element in project virtually before construction improves the overall construction process.

The potential of BIM is to reduce construction costs and avoid design problems in the planning phase is the main impetus behind the government's implementation of BIM.

Currently, the private sector is progressively taking the lead in the adoption of BIM. BIM is proven to be one of the technologies that will improve the overall perspective of the construction industry.

This edition is filled with vital information and great photos, we are pleased to announce the Road Tour BIM, myCREST & Qlassic for year 2018. So, do keep a lookout and be quick to book your place! Enjoy reading and do let us know your comments on e-CONSTRUCT. It is, after all, designed to serve you.

*Last, but not least.
Let's BIM!*

EDITORIAL COMMITTEE

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EDITORIAL COMMITTEE

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PUBLISHER

myBIM Centre
Tingkat II, Menara Sunway Putra,
100 Jalan Putra,
50350 Kuala Lumpur
Malaysia

Tel : 03 - 4040 0399
Email : info@mybimcentre.com.my
Website : www.mybimcentre.com.my
Twitter : @bimeidb
Facebook : Lets BIM

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UKM Cetak Sdn Bhd
Aras Bawah, Bangunan Penerbit UKM,
Universiti Kebangsaan Malaysia,
43600 UKM Bangi, Selangor Darul Ehsan

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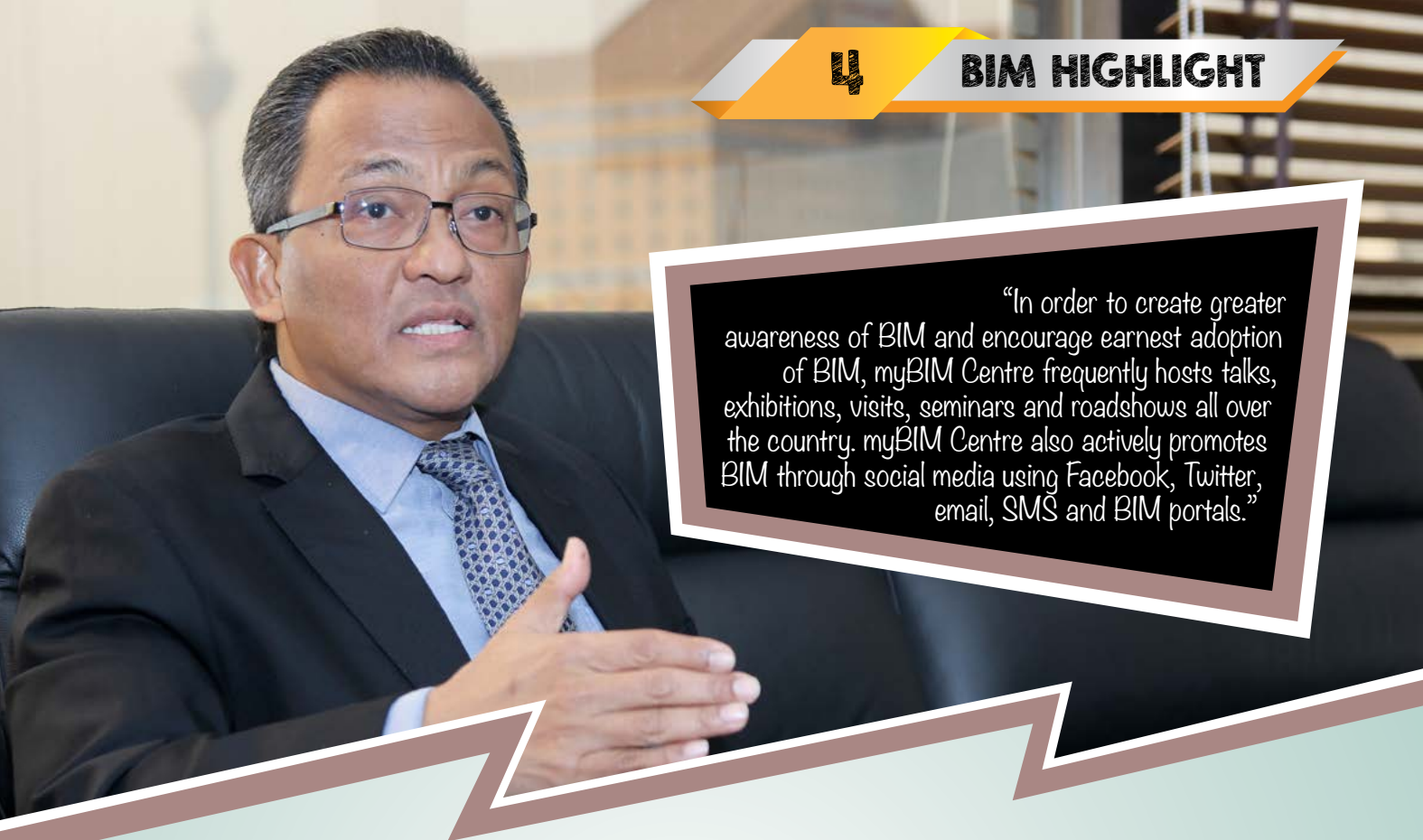
Making BIM the way forward



CIDB Chief Executive Dato' Ir. Ahmad 'Asri Abdul Hamid is a man on a mission with clear-cut technology driven pathways for bringing forward the construction industry in Malaysia. Chief among CIDB's strategies is the implementation of BIM (Building Information Modelling) technology at all levels of construction.

BIM involves an integrated process between human competency and technology, to produce, process, manage and collaborate high-performance digital construction information. BIM technology has proven to provide the opportunity for users to enhance their decision-making process by acquiring reliable information. It also provides data-centric solution from the early stages of the construction process. BIM software can break down and provide a better understanding of the construction project, that can be implemented by contractors and subcontractors.

The BIM adoption process involves several change management initiatives to support skill-upgrading and technology competency, which has caused the delay in the technology taking off in a big way in Malaysia.



"In order to create greater awareness of BIM and encourage earnest adoption of BIM, myBIM Centre frequently hosts talks, exhibitions, visits, seminars and roadshows all over the country. myBIM Centre also actively promotes BIM through social media using Facebook, Twitter, email, SMS and BIM portals."

As one who has been involved in the BIM agenda from the very start, Dato Ahmad 'Asri is eloquent in his articulation of his pet subject. "Under the government's CIP (Construction Industry Transformation Programme) initiative there are four main thrusts and BIM comes under the Productivity thrust. CIDB began by establishing the state of the art myBIM Centre, which is a reference centre for the Malaysian construction industry," began Dato Ahmad 'Asri in an interview for this magazine.

"It is our aim through BIM training to produce 2,000 personnel by 2020 trained as BIM Modeller, BIM Coordinator and BIM Manager. These training are subsidised partly by CIDB to ensure it is affordable to all. We have developed the BIM guide, training modules for architects as well as structural and MEP engineers."

Dato Ahmad 'Asri revealed that a BIM Facility Management and BIM Infrastructure training modules are in the pipeline and will most likely be available by mid-2019. On the policy side, in preparation to mandate BIM by the year 2020, myBIM Centre is in the process of developing National BIM e-Submission (NBES) system to assist local governments to receive and process the BIM 3D plans submission. This system aims at shortening the approval period between 42 to 53 days to less than two weeks.

The myBIM centre has already developed myBIM Library, which is a collection of BIM components commonly used by the construction industry in their projects, such as IBS objects, medical equipment, fixtures, and furniture. Till date, there are 8,000 objects that can be downloaded freely for use.

CIDB also provides incentives through the BIM Transformation Funds, a programme awarded to SME companies involved in BIM projects. This non-monetary award in the form of BIM software and training is aimed at helping the SMEs to reduce their capital cost of adopting BIM.

"In order to create greater awareness of BIM and encourage earnest adoption of BIM, myBIM Centre frequently hosts talks, exhibitions, visits, seminars and roadshows all over the country. myBIM Centre also actively promotes BIM through social media using Facebook, Twitter, email, SMS and BIM portals."

"To ensure easy availability of BIM knowledge and learning throughout the country, myBIM Centre has established six BIM Satellite centres in Penang, Perlis, Pahang, Johor, Sabah and Sarawak. We will establish six more satellites by end of 2018," said Dato Ahmad 'Asri.

As passionate as he is about his promotion of the BIM agenda, Dato Ahmad 'Asri is quick to admit that its implementation in Malaysia has faced numerous stumbling blocks. Malaysia is admittedly slow and well behind other developing nations in the adoption of BIM and the CIDB Chief Executive is willing to acknowledge the shortcomings that have contributed to the dilemma.

"I would say we've been engulfed by challenges instead of weaknesses. The ability to understand the challenges of adopting BIM is considered a foundation to predict the adopting process because such capability provides constructive strategies to mitigate the challenges. We've done our part towards understanding these challenges." Dato Ahmad 'Asri explained that CIDB had conducted surveys to discover the real challenges that have hindered and continue to hinder the adoption of BIM in Malaysia. The main obstacles are the high cost of technology, high training cost, lack of BIM knowledge, the high cost of software, insufficient BIM training and lack of projects that require BIM.



One major strategy to ensure the effective implementation of BIM is to mandate government projects valued at more than RM100 million to use BIM. Major projects successfully completed using BIM include the National Cancer Institute (NCI) Putrajaya, MACC Selangor, Health Clinic, Maran, Administration complex of Majlis Bandaraya Kuala Terengganu and Sekolah Kebangsaan Meru Jaya Ipoh to name a few. Upcoming projects using BIM include Mara College Banting and hospitals in Parit Buntar, Kemaman, Pendang, Kajang and Seri Iskandar.

"Convincing our industry stakeholders to adopt BIM continues to be a work in progress. We do this through seminars, roadshows and knowledge sharing. We continue sharing the BIM benefits and how BIM can improve productivity and reduce cost. We have developed a special lecture programme called the BIM Concept and Theory to introduce BIM knowledge to high-level management including CEOs and directors to realize the maximum potential of BIM's benefits.

Through the usage of BIM, stakeholders can have improved coordination between client-consultant-contractor, 3D/4D clash detections and improve collaboration among project team members. And for clients, they can improve project understanding, improve construction planning and monitoring, better quality control of a project and can also see an increase in project turnover.

"It's heartening to note the success stories of BIM in Malaysia, such as MRT Corp who managed to complete the MRT phase 1 SBK line project 2 months ahead of schedule with a saving of RM2 billion. And according to Brunfield International Group and Putrajaya Holdings they too managed to complete their projects ahead of schedule without any Variation Orders (VO)," said Dato Ahmad 'Asri.

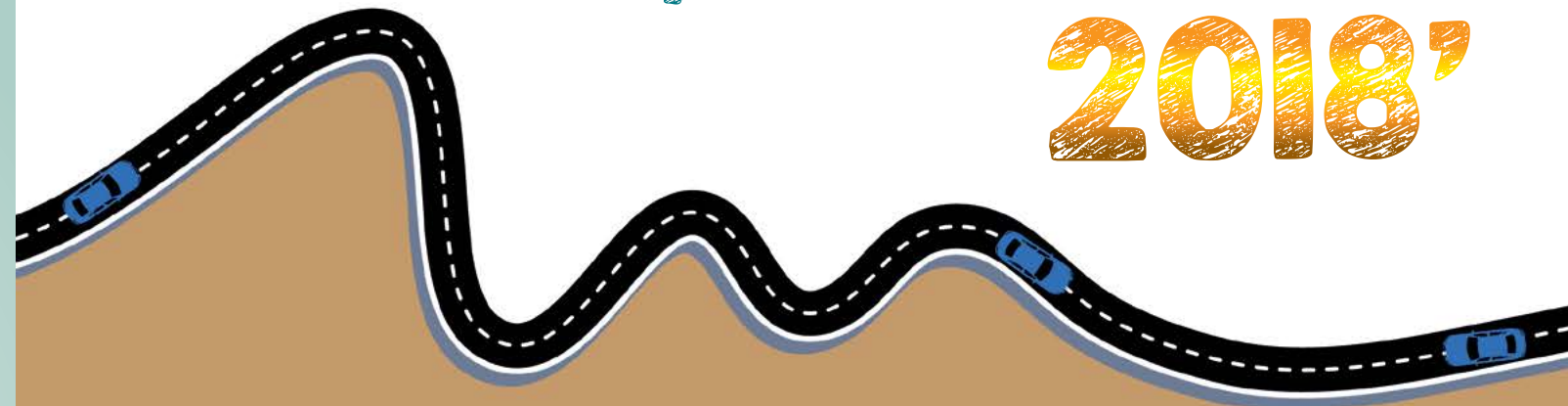
When asked if CIDB had plans to put in place 'BIM Best Practices For Infrastructure' so that there is uniformity across the board, Dato Ahmad 'Asri said at present nothing like that was in the pipeline. "But we are developing the BIM learning module for infrastructure in collaboration with JKR, LLM and industry players. This will provide a learning method to create and model roads and bridges using BIM," he explained.

One of the most exciting programmes of the recently concluded International Construction Week [ICW] was the BIM Day conference which was held at CIDB's Convention Centre. Dato Ahmad 'Asri, who was one of the speakers at the launch of BIM Day 2018, was happy to note that approximately 400 participants from across the industry attended and participated in the full day event comprising of seminars, forums, and a Q & A session. Local and international speakers shared their ideas and experiences on implementing BIM projects. There was also the BIM Marathon 2018 in which nine higher learning institutions participated for the coveted top three spots.

On that note, Dato Ahmad 'Asri reiterated that ICW 2019 will be the biggest one yet and certainly much better than the one held this year. "BIM will be incorporated in a big way during ICW 2019 which is expected to be held in a new, bigger venue. We are expecting more participants from across the industry, as the maturity and adoption of BIM expected will be higher by then," concluded Dato Ahmad 'Asri, confident of the success of BIM in Malaysia's construction industry.



'JELAJAH BIM, MyCREST & QLASSIC 2018'



The road tour seminar was part of Construction Industry Development Board (CIDB Malaysia) in 2018 ongoing effort of educating and creating deeper interest of Malaysian construction players in BIM, MyCREST and QLASSIC.

The focused of the road tour seminar is to introducing the use of BIM, MyCREST and Qlassic as well as its uses to local authorities, developers, consultants and contractors and its cost-effective adaptation methods in the increasingly challenging industry competition.

BIM is one of the focus of developing the country's construction industry by the year 2020. To ensure BIM's implementation goals are achieved, CIDB is constantly exploring new ICT technologies and preparing a BIM implementation plan to be a reference in driving the Malaysian construction industry to a more productive and innovative future.

Malaysia Carbon Reduction & Environmental Sustainability Tool or MyCREST, is a building green rating tool integrating carbon calculations and environmental sustainability. This rating tool aims to guide, assist, measure and mitigate the environmental impacts built in terms of reducing carbon emissions and environmental impact by taking into account a holistic lifecycle. It also aims to integrate socio-economic considerations related to built environment and urban development.

This rating tool developed by the government can help sustain environmental sustainability in protected building projects and thus the goal of reducing carbon emission rates can be achieved.

QLASSIC (Quality Assessment System in Construction) is developed as a standard assessment system in assessing the quality of construction work quality that can set quality and safety benchmarks and open space for improvement.



JELAJAH



2018

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Masa Depan Kita



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TEMPAT ADALAH
TERHAD

Pengenalan

BUILDING Information Modelling (BIM) merupakan salah satu fokus dalam memajukan industri pembinaan negara menjelang tahun 2020. Bagi memastikan matlamat pelaksanaan BIM tercapai, CIDB sentiasa meneroka teknologi ICT yang baru serta menyediakan pelan pelaksanaan BIM bagi menjadi rujukan dalam memacu Industri pembinaan Malaysia kearah masa depan yang lebih produktif dan inovatif.

Malaysia Carbon Reduction & Environmental Sustainability Tool atau **MyCREST**, adalah alat penarafan hijau bangunan berintegrasikan pengiraan karbon dan kemampuan alam sekitar. Alat penarafan ini bertujuan untuk membimbing, membantu, mengukur dan mengurangkan kesan alam sekitar yang dibina dari segi pengurangan pelepasan karbon dan kesan alam sekitar dengan mengambil kira kitaran hayat yang lebih holistik. Ia juga bertujuan untuk mengintegrasikan pertimbangan sosio-ekonomi yang berkaitan dengan persekitaran yang dibina dan pembangunan bandar.

Alat penarafan yang dibangunkan oleh pihak kerajaan ini dapat membantu kemampuan alam sekitar dalam projek-projek bangunan terpelihara dan seterusnya matlamat pengurangan kadar pembebasan karbon negara dapat dicapai.

QLASSIC (Quality Assessment System in Construction) dibangunkan sebagai system penilaian yang piawai dalam menilai tahap mutu hasil kerja pembinaan yang mampu menetapkan tanda aras kualiti dan keselamatan serta membuka ruang untuk penambahbaikan. Penekanan kepada aspek kualiti pembinaan dari peringkat awal lagi amat penting untuk :

- Menghasilkan pembinaan yang bermutu tinggi
- Menjimatkan kos pembaikan
- Mengurangkan risiko kemalangan
- Meningkatkan prestasi dan reputasi klien/kontraktor

OBJEKTIF SEMINAR

Seminar ini adalah merupakan sebahagian daripada usaha berterusan Construction Industry Development Board (CIDB Malaysia) sepanjang tahun 2018 untuk meningkatkan lagi kefahaman dan minat peserta industri pembinaan di Malaysia terhadap **BIM**, **MyCREST** dan **QLASSIC**.

Fokus pembentangan adalah kearah memperkenalkan penggunaan **BIM**, **MyCREST** & **QLASSIC** kepada pihak penguasa tempatan, pemaju, jururunding dan kontraktor serta kaedah adaptasi yang berkesan dengan kos yang efektif. Setai kami untuk mengetahui tentang teknologi pembinaan terbaru serta insentif-insentif yang disediakan dan kekal relevan dalam persaingan industri yang semakin mencabar ini.

5 NEGERI

KUANTAN, PAHANG - 5 JULAI 2018
VISTANA HOTEL

MELAKA - 2 OGOS 2018
LA BOSS HOTEL

ALOR SETAR, KEDAH - 29 OGOS 2018
TABUNG HAJI HOTEL

TAWAU, SABAH - 20 SEPTEMBER 2018
PROMENADE HOTEL

KUCHING SARAWAK - 14 NOVEMBER 2018
WATERFRONT HOTEL

PESERTA

- Kontraktor
- Pemaju
- Kerajaan
- Pelajar
- Pemain Industri
- GLC
- Perunding

JELAJAH BIM, MyCREST & QLASSIC 2018

TENTATIF

PROGRAM

MASA	PERKARA / TAJUK	FASILITATOR / PENCERAMAH
08.00 am	Pendaftaran	
08.45 am	Taklimat Keselamatan Negaraku Lagu Negeri Doa Ucapan Perasmian Pengarah Negeri	
09.15 am	Inisiatif MYBIM & Tayangan Video MYBIM	
09.45 am	Transformasi BIM Dalam Organisasi	INDUSTRI
10.45 am	Rehat	
11.00 am	Pelaksanaan BIM Dalam Projek JKR	
12.00 am	Kemampuan Alam Sekitar Melalui MyCREST	
1.00 pm	Rehat	
2.00 pm	Pengenalan QLASSIC Menjelang 2020	
3.00 pm	Perkongsian Amalan Terbaik QLASSIC	INDUSTRI
4.00 pm	Penilaian QLASSIC	

*Tertakluk kepada perubahan



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Maklumat Untuk Dihubungi :

Nama Pegawai			
Nama Organisasi			
Alamat			
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Faks			
Emel			

Sila Senaraikan Maklumat Peserta :

No	Nama Peserta	No. Kad Pengenalan	Telefon Bimbit	Jawatan

Sila Tandakan (✓) Pilihan Seminar Anda :

- ☐ Kuantan, Pahang 5 Julai 2018 : Vistana Hotel
☐ Melaka 2 Ogos 2018 : LA Boss Hotel
☐ Alor Setar, Kedah 29 Ogos 2018 : Tabung Haji Hotel
☐ Tawau, Sabah 20 September 2018 : Promenade Hotel
☐ Kuching, Sarawak 14 November 2018 : Water Front Hotel

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PAHANG

Pn. Noor Rohaya
En. Shahrul Affandy
cidbpahang_latihan@cidb.gov.my

Tel : 09 517 8734
Faks : 09 517 8751
H/P : 019 9188734

MELAKA

Puan Noraishah
noraishah@cidb.gov.my
En. Aliff Amirul Aiman
aliff.amirul@cidb.gov.my

Tel : 06 232 8896
Faks : 06 232 8950

KEDAH

En. Mohd Ashran
ashran@cidb.gov.my
Cik. Wan Seri Baizura
seri@cidb.gov.my

Tel : 04 733 1243
Faks : 04 733 1175

SABAH

En. Florie Samuel
florie@cidb.gov.my
Pn. Paujiyah
paujiyah@cidb.gov.my

Tel : 089 777 841/842/846
Faks : 089 777 840

SARAWAK

En. Nordin
nordin@cidb.gov.my
En. Syed Abd Aziz
a.aziz@cidb.gov.my

Tel : 082 445 833
Faks : 082 447 833

myBIM Satellite

To encourage industry-academia linkages, CIDB expand BIM training programs through satellite centres at various universities known as myBIM Satellite. The initial stage for the establishment of myBIM Satellite is to identify the Higher Education Institutions (HEIs) that offer a construction programme based on selected regions.

Selected lecturers from these respective universities undergo Training the Trainers (TTT) programme conducted by myBIM Centre.

All the modules used in HEIs are standardised and centralised by myBIM Centre. Participants who are interested can attend the BIM training at the nearest appointed myBIM Satellite university campus at an affordable cost. Upon successful completion of the course, participants will receive a certificate of attendance and accreditation from myBIM.

The first establishment of myBIM Satellite was with Universiti Malaysia Pahang (UMP) on 2016. Until 2017, CIDB has signed the memorandum of Understanding (MoU) with six (6) public universities collaborated with myBIM as myBIM Satellite university partners.



BIM Forum

explores approach to design and construction

The BIM Forum was definitely one of the key events of the BIM Day 2018 as it provided an integrative platform to expedite and accelerate the adoption of Building Information Modelling (BIM) in the construction industry.

The forum's theme for this year was 'BIM Approach to Design & Construction' and it was moderated by Ar. Ezumi Harzani Ismail from Malaysian Institute of Architects. Panel members included Abi Sarwan Mazran Ibrahim from 3D Tech Parametric, Sr Sharifah Noraini Noreen Al Jamalullail from Royal Institute of Surveyors Malaysia, Ar. Latipah Abu from LA Architect and Ir Prof Julian Lee representing the University of Hong Kong.

The forum focused on how the adoption of a cutting edge technology like BIM could aid in the progress of the construction industry and the underlying challenges in its implementation.

Here's what the panel members had to share at the forum:

AR LATIPAH ABU

"BIM has impelled a massive paradigm shift in the construction industry. It has brought forward a significant evolution in the context of 3D building models. Also, BIM is a very fluid software as any small amendments made to the design, concept, schematic and tender drawings will be altered accordingly. If this system is adopted, issues concerning clash and RFIs (Request for Information) can be solved more effectively as BIM has the capacity to reduce clashes through its 3D design coordination. These are also the clear reasons why clients are now starting to request for BIM in their projects as the results have been outstanding."



PROF JULIAN

"Architects are no longer using conventional methods for their designs as they are venturing into more modern and complex designs like the parametric. Therefore, BIM is definitely required to fulfill all the upsurging construction demands. As for concerns about the impact of BIM technology on the job scope of an architect; BIM technology will definitely not completely replace the role played by a modern day architect as the algorithm methods employed on BIM machines require human aid and instructions."



ABI SARWAN MAZRAN IBRAHIM

"One of the questions frequently asked concerning BIM is the establishment of the appropriate LOD (Level of Development) for the BIM model. Clients are getting more demanding these days as they want a specific LOD in their projects. On the other hand, BIM modelers are not sure of which LODs to be introduced to their clients. The higher the LOD, the more expensive it gets. The ultimate importance therefore should be placed on how data gathered is going to be utilised. The LOD should be selected depending on the utilisation of the data."

Another important question will be on the type of BIM software to invest in. The Revit BIM software is the popular one but as long as it is a reputable software and there is support from the vendor, the type of software shouldn't be a problem."

SR SHARIFAH NORAINI NOREEN AL JAMALULLAIL

In Malaysia, we lack manpower to operate the BIM software. This is because employers tend to avoid the hefty investments in getting their staff trained. Ideally universities should be the training ground to get more graduates to be familiar with BIM software. RISM has established the BIM educational framework for our quantity surveying students. The implementation of BIM in the higher education curriculum will allow students to learn and get early exposure of BIM software as more specialised workforce will be needed by the construction industry in the future."



The next initiative of RISM will be to form a legal committee to discuss legal issues pertaining to BIM. This is because construction industry players are concerned by legal repercussions that might arise with the adoption of BIM - for instance if a model designed by the BIM modeler leads to a clash during the construction and delays the construction process. The question of who will be held liable in case of any negligent occurrence is uncertain as currently there is only a supplementary contract for BIM. This also raises the question of whether there is a need to have a separate contract for BIM modeling. Hence, the RISM is on its way to forming a legal committee to address the legal and contractual issues concerning BIM."

Issues raised during Q & A session

At the question and answer session at the end of the forum, several interesting questions and issues were raised by the participants.

One question was on how to manage the large amount of data while using the BIM software and on concerns over data sharing through the common data environment.

To this, Abi Sarwan explained that multi-level access control was needed in management of data. As for sharing concerns, he said that only the originator should have the rights to bring about any changes to the design.

The panel was also asked if BIM should be made a mandatory requirement in the construction industry.

The panel agreed that weighing on the benefits that can be obtained by using BIM technology, it should be made mandatory. However, smaller construction companies should be allowed to adopt this technology organically.

The panel was also asked if there should be a national or a standardized international protocol for BIM to ensure a uniform adoption.

Prof Julian explained that for now it would not be easy to achieve an international protocol for all the countries as the nature of the construction industry was different across the world. However he added that a national protocol would act as an effective guide for the implementation of BIM.



DIGITAL HERITAGE:

The Possibilities in 3D HDS Laser Scanning

Climate change and sustainable living will revolutionise building designs. Economic wealth created in growing cities will add pressure to accommodate the expanding business and population. Our heritage is now being put on the back seat. Little is known of the true value of historic monuments among the younger/future generation. The impact of social, cultural, historical and political perspective toward a major historical building is even less known. It is now time for Malaysia can now take lead in establishing possible correlation in this new area of research. Existing buildings, not new, hold this strategic role.

Recently, a seminar was held on 3rd of March 2018 on the topic of Digital Heritage: The Possibilities in 3D HDS Laser Scanner. The seminar was presented by Dr Eric Lou, Reader in Project Management at Manchester Metropolitan University, United Kingdom (UK) (Figure 1). Dr Lou's research is internationally recognised through his success in Newton Fund grants and journal publications with partners globally. Dr Lou spent a decade in construction, higher education, information technology and environmental industries; and completed over £60 million in building refurbishment and new build projects before joining academia.

The presenter has begun by demonstrating the overall paradigm shift in construction technology of which Building Information Modelling (BIM) has a huge potential to deliver sustainability objectives, where historical buildings, monuments, and artefacts could be digitalized and be integrated into intelligent cities. Amongst others, he has



Dr Eric Lou
from Manchester Metropolitan University

By: Nurshuhada Zainon
Department of Quantity Surveying,
Faculty of Built Environment
University of Malaya, Kuala Lumpur.
zshuhada@um.edu.my



highlighted that laser scanning is currently the most efficient tool to collect spatial and geometrical information with an accuracy up to 2 millimetres. Laser scanning brings benefits for digitalizing heritage, where it provides accurate geometrical information of a built environment, enables to inspect the data from various viewpoints, useful in the assessment of building structure, efficient data acquisition, and useful for archiving.

Addressing laser scanning usage for heritage buildings promotes sustainability-led designs. It establishes a multi-dimensional imaging approach by integrating high-resolution spatial and various 2D imaging to obtain robust and

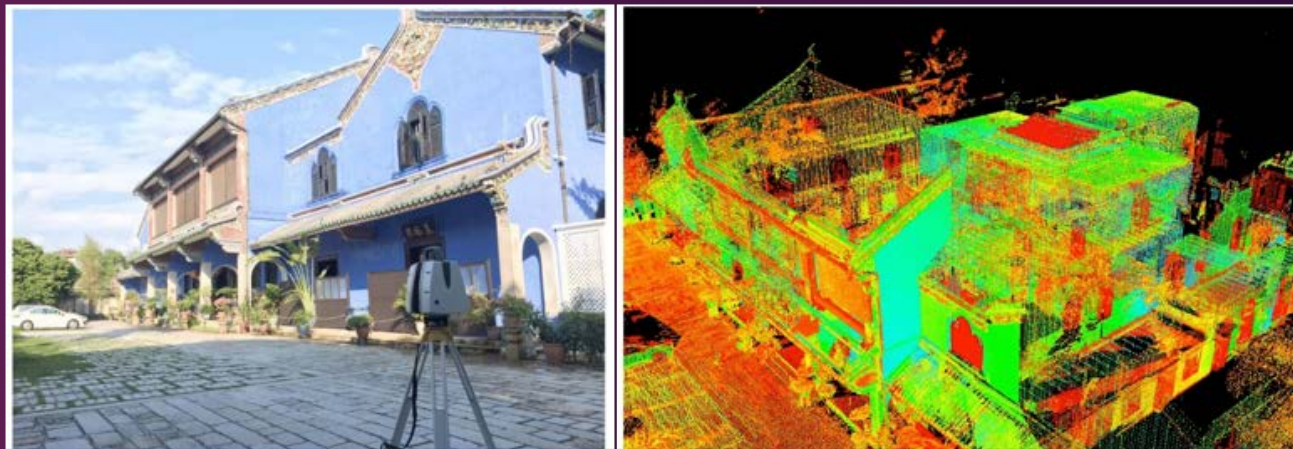
accurate estimation of physical properties in natural environment. Outcome is applicable to improve building survey practice on existing buildings and to establish complete digital dataset (BIM) for designing of the future cities. This integrated tool within BIM environment is an enabler for designers and decision makers to better understand and consider sustainability of materials during refurbishment projects and their effects on the energy performance of the building.

In pursuance of its foundations, the methodology of laser scanning was also discussed. Details activities were presented which involve data acquisition (point cloud and modelling), data processing, and functional mapping (Figure 2 and 3). Dr Eric shared the impacts of laser scanning usage on heritage buildings in many aspects. From social perspective, artefact collections now can be presented to new audiences online. It can also make heritage sites accessible, making tours are educational, immersive and fun when images from laser scanning and BIM objects can be viewed via apps, interactive maps, guided audio and virtual tours, and many other platforms. This is therefore, encourage public interaction with



Data acquisition (point cloud modelling), data processing, and functional mapping

the cultural heritage. For the authority, laser scanning allows recreation, restoration, and regeneration of historical artefacts via 3D printing. Rescanning the heritage facility over time can identify any differentiation in the structure or surface of the facility. As a result, damaged heritage buildings could be easily rebuilt or reprinted, as the original point cloud data were available back in time.



Example of laser scan image of the Cheong Fatt Tze's Blue Mansion in Penang.

Finally, the participants have enlivened with a new knowledge where digitalizing heritage is a novel way to offer intelligence to heritage building owners, in order to make informed decisions on redesigning heritage building by improving environmental sustainability, cut carbon emissions and enhancing building conditions - leading to the creation of the future cities in Malaysia and preserving history.

The seminar was held at the Faculty of Built Environment. It was jointly organised by University of Malaya (UM), MyBIM, and Manchester Metropolitan University (UK). The seminar was one of the activities conducted under MOU collaboration between UM and MyBIM on Sustainability-led Design through BIM (SuLeD-BIM) signed in November 2017.

NEW RULES OF MEASUREMENT MALAYSIA (NRMM) WORKSHOP

13 - 14th APRIL 2018
MELIA HOTEL KUALA LUMPUR

The Royal Institution of Surveyors Malaysia (RISM) had conducted, for the first time, the New Rules of Measurement Malaysia (NRMM) workshop from 13th April to 14th April 2018 at the Melia Hotel Kuala Lumpur.

NRMM is the abbreviation for New Rules of Measurement Malaysia. This is the RISM Standard Method of Measurement for building works for use in Malaysia (First Edition). The objective of the New Rules of Measurement is to provide a standard set of measurement rules for measurement of building works which are more BIM-friendly. It also provides guidance in the description of building components/items in a concise and precise manner complete with guidance as to the works and materials deemed included in the description and to be stated in the Preambles, and the detailed specification to be included in the Specification.

One of the unique and speciality of this NRMM committee is that even though the NRMM is lead by the Royal Institution of Surveyors Malaysia (RISM), this NRMM is a collaborative effort from all construction industry professionals and players with representatives from Construction Industry Development Board Malaysia (CIDB), Jabatan Kerja Raya (JKR), Pertubuhan Arkitek Malaysia (PAM), Institute Engineers Malaysia (IEM), Association of Consulting Engineers (ACEM) and representatives from the Developers, Contractors as well as Academicians.

NRMM would incorporate the essentials of good practice and should be understandable by all the stakeholders involved in the construction project e.g. the employer, the contractor, the project/design team, etc.

Nevertheless, most importantly, the BIM Manager could use NRMM to draw out his BIM execution plan for the Architects, Civil & Structural Engineers and M & E Engineers to follow in order that

By:-
Sr Sharifah Noraini Noreen Syed Ibrahim Al-Jamalullail
Hon. Secretary RISM NRMM Technical Committee





the quantities generated by the BIM software are amenable for Bills of Quantities preparation and for costing purposes (5D BIM).

It is noted that NRMM is based on RICS NRM 2 tabulated format but not the contents therein. The write-up follows that of 'Tabulated rules of measurement for building works' from NRM2 but with some amendments to suit Malaysian QS practice and to ease the production of quantities generated by BIM software.

The NRMM provides rules of measurement for the preparation of Bill of Quantities (BQ) and schedules of works. The rules also provide a framework, which can be used to develop bespoke and standard schedules of rates and standard bill item descriptions.

The Bills of Quantities (BQ) shall be described in a concise and precise manner for the building components/items and represent the quantity and quality of such components/items to be carried out.

The building components/items which cannot be measured shall be given as a provisional sum while those the extent of which is not known shall be described as provisional or given in a bill of approximate quantities.

The NRMM Committee which consists of different organisations shows that it is possible for construction industry to successfully collaborate with each other in thrusting BIM implementation forward in Malaysia.



BIM CONCEPT DESIGN

IMPLEMENTATION ON BAGAN DATUK POLYTECHNIC, PERAK

Study Case:

Project: Bagan Datuk Polytechnic, Bagan Datuk, Perak

Location: Bagan Datuk, Perak

Customer: Ministry of Higher Education Malaysia

Project Implementation Method: Design and Build project

Project Director: Director of Special Project Team I, CDPK

Introduction: JKR is currently implementing BIM in few selected projects. BIM scopes and objectives of these projects may differ from other project based on its BIM Project Execution Plan. JKR promotes the usage of BIM at early stage of the project in order to get better understanding of client's needs and requirements in terms of time, cost, quality and scope of the project. Bagan Datuk Polytechnic is one of the BIM project implemented at early phase of project.

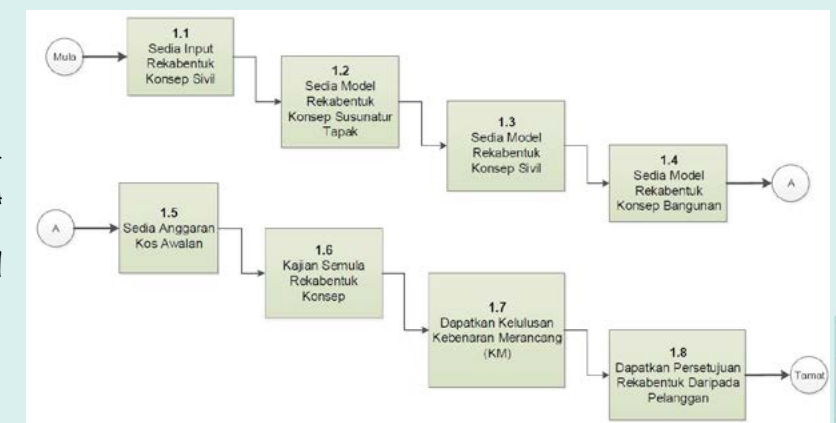
BIM work processes for planning stage starting from preparation of design concept until getting client's approval (Refer Figure 1) are briefly explained in JKR BIM Work Process Manual (Planning Phase). The BIM Deliverables during this phase are as below: In JKR BIM Work Process Manual (Planning Phase), showing the work process of BIM during planning by preparing design concept until to get client's approval (Refer Figure 1). The BIM Deliverables during this phase are as below:

- Existing Condition Model
- Existing Condition Model Analysis Report
- Cut & Fill Estimation Report
- Concept Design model

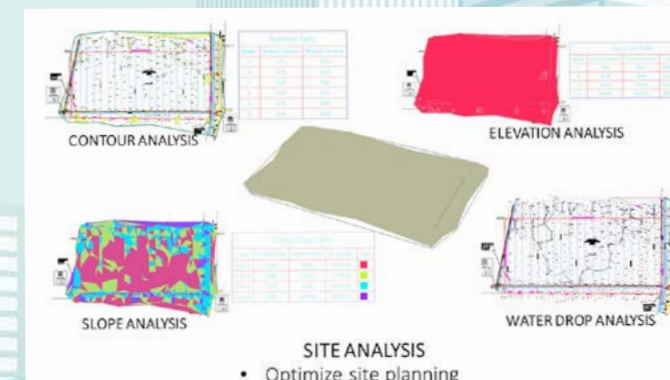
CONCLUSION:

By using BIM at early phase its can help to:

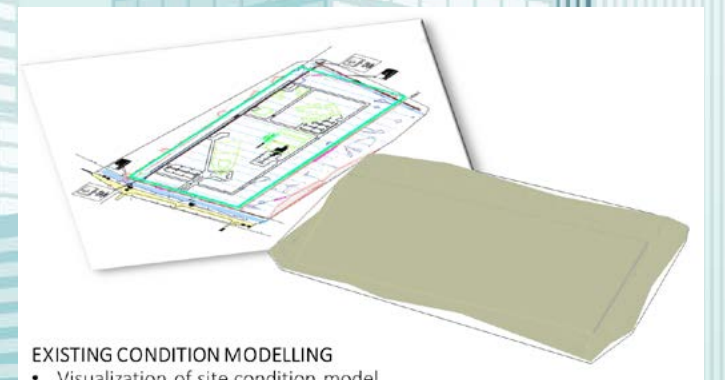
- Assist project team and client to carry out design review process by confirming SOA given
- Provide 3D visualisation to the client and project team
- Estimate material quantities especially for earthworks report
- Stay within budget constraints with frequent preliminary cost estimate while the design progresses



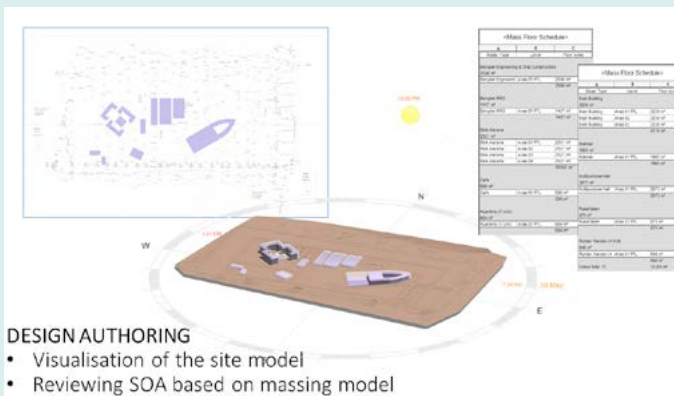
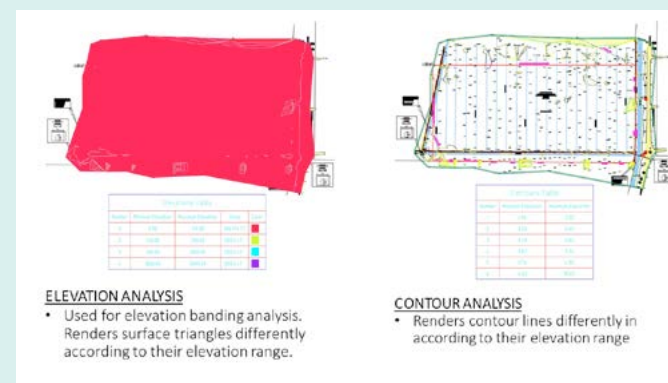
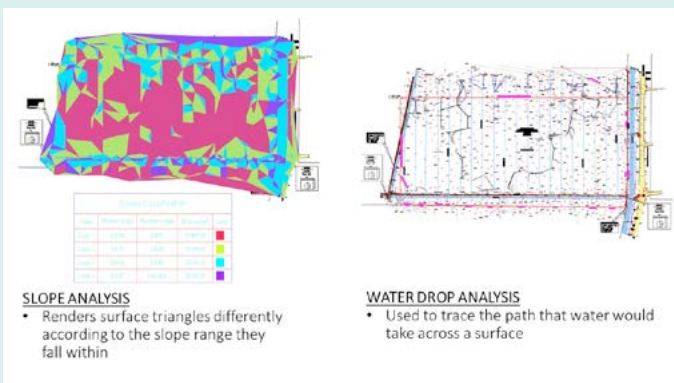
Work Flow Chart of BIM Work Process (Planning Phase)



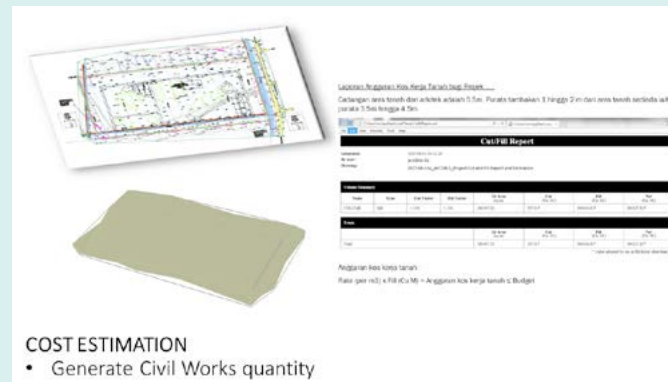
BIM Deliverables: Existing Condition Model Analysis Report



BIM Deliverables: Existing Condition Model



BIM Deliverables: Concept Design Model



BIM Deliverables: cut & Fill Estimation Report



Design Review

- Ease of design reviews process

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- Cawangan Perancangan Aset Bersepadu, Ibu Pejabat JKR Malaysia. Manual Proses Kerja BIM JKR – Fasa Perancangan (2015). Jabatan Kerja Raya Malaysia
- Cawangan Kerja Pendidikan, Ibu Pejabat JKR Malaysia. Bagan Datuk Polytechnic BIM Project Execution Plan – Pre-Contract (2017). Jabatan Kerja Raya Malaysia.
- About Analyzing Surfaces. (2018). Autodesk, Retrieved May 16, 2018, from <https://knowledge.autodesk.com/support/civil-3d/learn-explore/caas/CloudHelp/cloudhelp/2018/ENU/Civil3D-UserGuide/files/GUID-C8D8B7E2-D2E5-460A-ABE7-C4131085295E-htm.html>

BIM Day 2018:

The time is now for digital construction

The International Construction Week 2018 was an action-packed event that drew throngs of national and international industry participants, keynote speakers and visitors to its two venues, the Kuala Lumpur Convention Centre and CIDB Convention Centre.

This year marked ICW's 18th edition bringing together construction industry players to showcase, learn, build partnerships and share innovative ideas from the many conferences, seminars, exhibitions and competitions on the use of modern construction technologies such as the Building Information Modelling (BIM), new sustainable materials and energy sources, innovative design approaches as well as advances in digital technology, including the use of big data in construction.

One of the biggest draws of the ICW was BIM Day 2018 which was held on March 29, 2018, at CIDB's Convention Centre (CCC). The commute between the main event in KLCC and CCC in Jalan Cheras was made very convenient with frequent free shuttle service provided by the organisers. As a result, BIM Day drew strong crowds of stakeholders looking forward to learning more about the technology.



Day-long events included paper presentations, a forum and exhibitions.

BIM Day was first introduced in 2014, making it an annual event to raise industry awareness and understanding of BIM practices to a wider audience in Malaysia. This year's theme 'Digital Construction - BIM: The Time is Now' was to strongly advocate the urgency of adopting BIM in the Malaysian construction industry scene.

BIM involves an integrated process between human competency and technology, to produce, process, manage and collaborate high-performance digital construction information. This provides the opportunity for users to enhance their decision-making process by acquiring reliable information. It also provides a data-centric solution from the early stages of the construction process.



Dato' Sri Zohari Akob, Secretary General of Ministry of Works, read out the opening speech on behalf of Minister of Work Dato' Sri Fadillah Yusof during the launch of BIM Day. "BIM has successfully allowed the construction industry to revolutionise the entire life cycle of a project, from the way buildings are designed, up to its construction, maintenance and demolition. Most importantly, BIM has increased the efficiency and productivity of the construction process," he said.

He also explained how BIM has emerged as a better alternative to 3D Computer Aided Design (CAD) modelling because the technology allows teams to work together concurrently in building a comprehensive, digital outline of a building even before the first stone is set, allowing architects, engineers, structural designers and other stakeholders to collaborate seamlessly.

It must be noted that the Ministry of Works through the CIDB and the best minds in the construction industry, developed the Construction Industry Transformation Programme (CITP) 2016-2020, which was launched by Prime Minister Dato' Sri Najib Razak. The national blueprint for the transformation of the construction industry has four thrusts, namely, Quality, Safety and Professionalism, Environmental Sustainability, Productivity and Internationalisation.

For the purpose of BIM Day 2018 the focus was on the Productivity thrust.

Just like in past years, BIM Day 2018 attracted various industry stakeholders including government agencies, professionals, contractors, developers and students. The full-day programme ran from 8.30am to 4.30 pm, with an array of events targeted at a variety of audience. The morning sessions included two papers, first by CEO of CIDB E-Construct Rofizlan Ahmad, on 'National BIM Initiative', and Paper 2 on 'BIM Implementation in KVMRT SSP Line Project' by Ahmad Aswadi Yusof, MRT Corporation.



Paul King from the UK-based NBS then presented his paper titled 'Best Practice BIM For Infrastructure'. This was followed by papers on 'Digital City' by Mohd Radzman Othman from Kwasa Land and 'Advanced Work Packaging - Key Drivers And Expectations For Project Stakeholders' by Zaidatul Ahmed Zubel from KLCC Project.

There was also an awards ceremony for the BIM Design Marathon 2018 winners - a competition opened to final year students of all universities and polytechnics. The day ended with a BIM Forum on contractual approach to BIM in construction.

Chief Executive of CIDB Malaysia, Dato' Ir. Ahmad 'Asri Abdul Hamid, in his speech at the BIM Day event, stressed on the need for Malaysia to embrace technology throughout the construction operations and processes in order to fully reap its benefits. "BIM is one of the best technologies available to the construction industry and this year's theme definitely rings true. Companies that have successfully embraced BIM are simply addicted to it," he concluded.

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BIM PROFICIENCY TRAINING

BIM CONCEPT & THEORY

OBJECTIVE: ●

The program explains and discusses BIM concept and theory, its benefits to the organizations, challenges and opportunities, case studies and the implementation. The participants will be able to discuss the impact of BIM deployment on their organizations, e.g. on their work practices, contracts, IT infrastructure and skills development

BIM CONCEPT & THEORY: ●

The module is specifically designed for the individual or organization that are involved in the construction and keen to explore new technology with the aim to bring awareness of the recent development in Building Information Modelling (BIM). The program explains and discusses BIM concept and theory, its benefits to the organizations, challenges and opportunities, case studies and the implementation. The participants will be able to discuss the impact of BIM deployment on their organizations, e.g. on their work practices, contracts, IT infrastructure and skills development.

● COURSE OUTCOME

- Understand the important of project information and collaboration;
- Understand the need for client leadership to successfully implement BIM;
- Recognize the importance of BIM and understand common BIM terminology;
- List the most common BIM-based applications;
- Understand BIM tools and implementation challenges;
- Understand barriers for BIM implementation; Understand the benefits of greater collaboration and integration in design and construction and how BIM supports it.

BIM CONCEPT & THEORY

CIDB HEADQUARTERS

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LEMBAGA PEMBANGUNAN PEMBINAAN MALAYSIA

Tingkat 10, Menara Dato Onn
Pusat Dagangan Dunia Putra
No.45, Jalan Tun Ismail
50480 Kuala Lumpur
Talian CIDB Careline : 1300 88 2432

CIDB E-CONSTRUCT SERVICES SDN BHD

Tingkat 11, Menara Sunway Putra
100 Jalan Putra,
50350 Kuala Lumpur

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CIDB WILAYAH PERSEKUTUAN KUALA LUMPUR

Ground Floor, Block E,
Lot 8, Jalan Chan Sow Lin,
55200 Kuala Lumpur.
Tel: 03-9281 6070 & 03-9281 6079
Fax: 03-9200 1240
(Administration & Finance)

CIDB NEGERI MELAKA

No. 31-1, Jalan TU 49A,
Kompleks Komersial Boulevard,
Taman Tasik Utama,
75450 Ayer Keroh, Melaka.
Tel: 06-232 8895
Fax: 06-232 8950

CIDB NEGERI KEDAH

Lot 7 & 8,
Kompleks Perniagaan Asas Jaya,
Jalan Stadium,
05100 Alor Setar, Kedah.
Tel: 04-733 1243
Fax: 04-733 1175

CIDB NEGERI PAHANG

A1, Ground Floor,
Jalan Seri Kuantan 2,
Seri Kuantan Square,
25050 Kuantan, Pahang.
Tel: 09-517 8734
Fax: 09-517 8751

CIDB NEGERI SARAWAK

Level 1, Block A, Kompleks CIDB,
Jalan Sultan Tengah,
93050 Kuching, Sarawak.
Tel: 082-445 833
Fax: 082-447 833

CIDB NEGERI SABAH

Block A, Level 4,
Bangunan KWSP,
88100 Kota Kinabalu, Sabah.
Tel: 088-244 423/658/506
Fax: 088-242 481

CIDB NEGERI SELANGOR

Level 5, Wisma PKPS,
Persiaran Perbandaran, Seksyen 14,
40675 Shah Alam, Selangor.
Tel: 03-5512 8600
Fax: 03-5512 8620

CIDB NEGERI SEMBILAN

Wisma KoCIDB, Lot D30,
Persiaran Utama S2/B2, Seremban 2,
70300 Seremban, Negeri Sembilan.
Tel: 06-601 6311
Fax: 06-601 7311

CIDB PULAU PINANG

Lot 9.01, Level 9, Bangunan KWSP,
No. 3009 Off Lebuhr Tenggeri 2,
Bandar Seberang Jaya,
13700 Seberang Jaya, Pulau Pinang.
Tel: 04-390 2448
Fax: 04-390 7448

CIDB NEGERI TERENGGANU

Level 7,
Menara Yayasan Islam Terengganu,
Jalan Sultan Omar,
20300 Kuala Terengganu, Terengganu.
Tel: 09-624 5311
Fax: 09-623 8973

CIDB NEGERI SARAWAK (MIRI BRANCH)

Lot 1140, Block 9,
Miri Concession Land District,
Miri Waterfront,
98000 Miri, Sarawak.
Tel: 085-417 431
Fax: 085-417 432

CIDB NEGERI SABAH (TAWAU BRANCH)

Level 1, Wisma Gek Poh,
Batu 1, Jalan Dunlop/Kuhara,
Beg Berkunci No. 7,
91009 Tawau, Sabah.
Tel: 089-777 841/842
Fax: 089-777 840

CIDB NEGERI JOHOR

Lot 2067, Batu 3,
Jalan Tampoi,
81200 Johor Bahru, Johor.
Tel: 07-234 4808
Fax: 07-234 4807

CIDB NEGERI PERAK

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Bangunan KWSP, Jalan Greentown,
30450 Ipoh, Perak.
Tel: 05-242 3488
Fax: 05-255 5488

CIDB NEGERI PERLIS

No 10, Jalan Tuanku Syed Putra
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Tel: 04-9781 243
Fax: 04-9781 244

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No. U7.2, Level 7,
Menara Perbadanan,
Jalan Tengku Petra Semarak,
15000 Kota Bharu, Kelantan.
Tel: 09-744 4311
Fax: 09-743 4311

CIDB NEGERI SARAWAK (BINTULU BRANCH)

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Parkcity Commercial Area,
Off Jalan Di Warta,
97000 Bintulu, Sarawak.
Tel: 086-343413
Fax: 086-343412

CIDB NEGERI SABAH (SANDAKAN BRANCH)

Lot 03-GF, 02-1F & 03-1F,
Block F, Bandar Megah Jaya,
Batu 7, Jalan Lintas Labuk,
90000 Sandakan, Sabah.
Tel: 089-668015
Fax: 089-668000

SUMMARY OF THE PROGRAM

- Effective deployment of BIM Requires project stakeholder to work together from the early stage of the project;
- Integrated Project Delivery (IPD) was introduced as a project delivery approach that integrates people, system, business structures & practices into a process to reduce waste and optimize efficiency throughout project life-cycle;
- People are the main issue that hindered the successful implementation of IPD in the project. Client leadership is an important factor in establishing a framework for IPD implementation.

COURSE OUTLINE:

- Construction Industry Scenario
- Introduction To BIM
- BIM Implementation
- BIM Collaboration

WHO SHOULD ATTEND:

- Architects
- Draught Person
- Project Managers
- Owners
- Developers
- Engineers
- Quantity Surveyors
- Designers
- Contractors
- Students

FOR MORE INFORMATION:



- 03-40400399
- www.mybimcentre.com.my
- training@econstruct.com.my
- myBIM Centre, 11th Floor, Menara Sunway Putra,
100, Jalan Putra, 50350 Kuala Lumpur





myBIM Centre

Tingkat 11, Menara Sunway Putra,
100 Jalan Putra,
50350 Kuala Lumpur
Malaysia

Tel : 03 - 4040 0399

Email : info@mybimcentre.com.my

Website : www.mybimcentre.com.my

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