

e-CONSTRUCT

BUILDING INFORMATION MODELLING MAGAZINE

BIM DAY

BUILDING INFORMATION MODELLING
2018

LAUNCHING OF
**MYBIM
CENTRE**

**BIM IN
INFRASTRUCTURE**

**BIM GUIDE
BOOK 4**

**myBIM
LIBRARY**

**BIM ADOPTION
IN MALAYSIAN
CONTRACTOR
COMPANIES**

BIM DAY 2018

Providing BIM Services for Malaysia

Building Information Modelling (BIM) is the next wave that is transforming the construction industry.

According to Construction Industry Development Board (CIDB) CEO Dato Ir. Ahmad 'Asri Abdul Hamid, the BIM system could optimise a project's cost in line with the Construction Industry Transformation Programme (CITP)."

"The BIM system involves the development and management of building design information through the use of three-dimensional (3D) images and smart design information,"

Source; Bernama, 18/11/2016

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Welcome Note

BIM IN INFRASTRUCTURE

As a bigger percentage of infrastructure projects uses Building Information modelling (BIM), many in the industry are realizing the need to embrace BIM to be able to compete and win new construction jobs. BIM for Infrastructure is a vague concept. The term “BIM” was originally devised for the Architectural Industry. It is easy to envision a 3D model of a building and all of its components contained within a defined structure. But the word “building” in BIM does not seem to support its use in a linear or horizontal construction.

The use of BIM in an Infrastructure project starts at the planning and conceptual stage, just like in vertical structure, and proceed throughout the project life-cycle, while maintaining the information as the project progresses through the various stages.

This edition discusses the use of BIM in Infrastructure projects such as Pan-Borneo Highway, in addition to the highlights of the recently published BIM Guide Book 4, myBIM Library and much more.

With great expectation and vibes, we are pleased to announce the BIM Road Tour 2018, so keep a lookout for the tour near you and book a seat fast!

Enjoy this edition and do let us know your comments on e-CONSTRUCT. After all, we designed this all for you.

**LAST, BUT NOT LEAST,
LET'S BIM!**

EDITORIAL COMMITTEE

ADVISOR

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

CHIEF EDITOR

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EDITORIAL COMMITTEE

Ahmad Farrin Mokhtar
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Azra Fakhiera Samsuddin
Siti Aisah Omar
Nurafizah Amiruddin

PUBLISHER

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

Twitter : @bimcidb

Facebook : Lets BIM

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BIM

BUILDING INFORMATION MODELLING

2018

Get ready for BIM Day at ICW 2018

BIM Day is set to make an appearance again in the International Construction Week (ICW) 2018 and IBS International Exhibition (MIIE) that will be held from 27- 29 March, 2018.

BIM Day was first introduced in 2014, making it an annual event with a goal to raise industry awareness and understanding of BIM practices. In the past years, BIM Day had attracted various industry stakeholders including government agencies, professionals, contractors developers and students.

As awareness and acceptance on the BIM practices gradually grew, different theme has been chosen every year to reflect the industry maturity for BIM implementation.

This year's event is geared up for another round of exciting events with Building

Information Modeling (BIM) being a major feature, keeping up with this year's ICW theme of 'Achieving Peak Productivity'.

For this year, BIM Day will be launched on 29 March, with the theme Digital Construction - 'BIM The Time is Now'.

With so much being spoken about transforming the construction industry, the time is ripe to march towards digital construction. The purpose and benefits of BIM relate to all construction industry professionals and everyone has the responsibility to understand the workings of the BIM technology. The full day programme from BIM Day runs from 8.30am to 4.30 pm. An array of events will take place the whole day, targetted at a variety of audience.

The morning sessions include 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.

This will be followed by a welcoming speech by Dato' Ir. Ahmad 'Asri Abdul Hamid, CEO of CIDB Malaysia.

There will be handing out awards and tokens to winners of the BIM Design Marathon 2018. This is a competition involving teams of four members from various faculties and disciplines, open to final year students of all universities and polytechnics. The intervarsity competition will take place from 19-22 March. There will be three winners receiving RM7,000, RM5,000 and RM 3,000 for finishing in the top three positions.

The awards ceremony will be followed by the third paper of the day titled 'Best Practice BIM For Infrastructure' by Paul King from the UK-based NBS.

The fourth paper on 'Digital City' will be presented by Mohd Radzman Othman from Kwasa Land, to be followed by the fifth paper on 'Advanced Work Packaging - Key Drivers And Expectations For Project Stakeholders' by Zaidatul Ahmed Zubel from KLCC Project.

Just before sessions break for lunch, the floor will be opened to the public for a Question and Answer session.

International BIM Day events resume with a BIM Forum on BIM Approach To Design & Construction. The number of participants in BIM Day events has grown over the years, and it is certain that it will continue to increase during BIM Day 2018.







Meet the man behind **myBIM Center**

Rofizlan Ahmad

CEO of CIDB E-Construct
Services Sdn. Bhd.

Rofizlan Ahmad, CEO of CIDB E-Construct Services Sdn Bhd, a subsidiary of Construction Industry Development Board Malaysia, is the man behind Malaysia's premier Building Industry Modelling Centre, called myBIM Centre.

Civil engineer by training, Rofizlan spent years with CIDB, winning several Service Excellence Awards along the way, before being offered the task of managing E-Construct, the IT wing of CIDB.

This young CEO is backed by years of experience in CIDB in various capacities ranging from manager to senior manager. He is particularly well-regarded for his role in the promotion and coordination of new technologies to initiate Industrialised Building System (IBS), recognised as a more systematic and mechanised method of construction.

Rofizlan's contribution to spur the industry to aggressively employ IBS had seen him work tenaciously through many initiatives, including the preparation of Cabinet Papers on IBS, assisting the Minister of Works in preparing answers to parliament members, as well as guiding the unit towards an analysis of the IBS Roadmap programme, which he also helped to draft.

In fact, he has involved in developing two blueprints for the Malaysian government in modernising the

Malaysian construction industry - IBS Roadmap 2003- 2010 and IBS Roadmap 20011-2015.

"When you coordinate and execute such programmes it naturally sharpens your intermediary skills, which now comes in handy with this job," begins the new CEO who has been in office for only a little more than a year.

Indeed, one of Rofizlan's key responsibilities is providing advisory services related to information technology, particularly involving myBIM Centre, to government and industry players.

E-construct Sdn Bhd assists the construction community in the area of information technology and communications to improve their contribution and competitiveness for both local and international scenes. "We provide a gateway to the multinational business services that form business to business development and operations; in software development packages and services; in providing fully integrated ICT solution such as web portal, software, apps, consultations and training," explains Rofizlan.

From his office at the myBIM Centre on the 11th floor of Sunway Putra Tower, Rofizlan monitors the hive of ongoing activity. The state-of-the-art myBIM Centre, besides being a centre of reference for Building

Information Modelling, also provides BIM training and provides facilities with the latest BIM technology on a pay as you use basis and other services such as a showcase area, a BIM lab, a seminar room and an impressive BIM studio, all open for hire at affordable rates.

BIM is a complex multiphase process that gathers input from team members to model the components and tools that will be used during the construction process to create a unique perspective of the building process.

"BIM has the potential to avoid mistakes if a genuine planning effort between team member is carefully reviewed and shared. BIM software can break down and provide a better understanding of the construction project, that can be implemented by contractors and subcontractors," says Rofizlan, going on to explain that the myBIM Centre conducts affordable BIM training and also BIM module training at three levels-modelling, coordinator and manager levels.

"Our current KPI is to flood the market with players trained at the modelling level which is the first stage of training and does not require qualified personnel to have work experience to support their registration for training with us. It basically covers the fundamental modelling of architecture."

Ever since the idea to implement BIM in Malaysia was introduced by the Director of Public Works Department (PWD) in 2007, BIM has been used by the architecture, engineering and construction (AEC) industries in Malaysia, but it is only now with the launch of CIDB's myBIM Centre and the government body's substantial subsidy, that BIM training has become more affordable.

"We are not here to kill the markets of private BIM trainers out there, our intention is solely to ensure the application of BIM and BIM tools become the norm in the construction industry," explains Rofizlan. As a direct result of myBIM Centre providing quality training and certification at a fraction of the market rate, Rofizlan says this competition has brought down the fees being charged by the private sector, thus alleviating the long-standing notion that BIM adoption is a costly affair.

The premier myBIM Centre goes further by also providing services for the BIM practitioner under its National BIM Library (NBL). NBL helps the practitioner right from drawing the BIM model to downloading it from the NBL platforms.

In the pipeline is plans to establish more such affordable BIM training centres around the country, including in east Malaysia. Institutes of higher learning, mainly universities in strategic locations, are the choice spots for future myBIM Centres due to

existing facilities, conducive academic environment and a ready supply of learners.

"When used appropriately BIM can reduce construction time, costs and even claims. BIM helps streamline your entire project, from estimating to safety planning to implementation. In fact, BIM alone can boost a company's efficiency by manifolds.

"Many developed countries are far ahead in realising the value and importance of BIM application in construction projects, such as Singapore, Taiwan and Australia to name some neighbours. You never know, BIM could soon be a condition required of a company to qualify for projects in Malaysia, similar to what is already the case in some countries.

"Whether or not it becomes a prerequisite, the implementation of BIM technology is definitely becoming more widespread in Malaysian, not least because of the government's efforts in aggressively promoting BIM," says Rofizlan.

"MyBIM Centre to be the premier national provider of construction development solutions in Malaysia"

Having just returned from a work trip to the United Kingdom, Rofizlan is excited to share E-Connect's latest feat, a collaboration with Building Research Establishment (BRE), a world-leading multi-disciplinary building science centre. BRE provides research, advice, training, testing, standards and also certification for both public and private sector organisations around the world.

"I'm proud to say that our courses will soon bear BRE accreditation as the organisation is pleased with the modules that we have developed. This will most certainly add further value to practitioners who may want to apply for work or projects overseas." With myBIM Centre's operations running smoothly and the acquisition of partnership with the prestigious BRE, CIDB E-Construct looks to be well underway towards living up to its vision 'To be the premier national provider of construction development solutions in Malaysia'.



BIM HIGHLIGHTS

PAN BORNEO HIGHWAY SARAWAK LEADING THE CHANGE WITH HIGHWAY INFORMATION MODELLING

Article from Lebuhraya Borneo Utara Sdn Bhd (LBU)

HIM in Pan Borneo Highway Sarawak

Pan Borneo Highway Sarawak is a game-changer in the sense that it leads the way in the use of Highway Information Modelling (HIM) in the construction of this 1,060km highway across the state of Sarawak.

HIM is a combination of Building Information Modeling (BIM) and Geospatial Information System (GIS) where both technologies are synergised to improve productivity in the whole construction process.

To understand what HIM is all about, it is important to understand what BIM and GIS is.

BIM is a process involving the generation and management of digital representations of physical and functional characteristics of places.

Building information models (BIMs) are files which can be extracted, exchanged or networked to support decision-making regarding a building or other built asset, in this case the Pan Borneo Highway Sarawak.

GIS on the other hand is a system for capturing, storing, analyzing and managing data and associated attributes which are spatially referenced to the earth.



Prime Minister Datuk Seri Najib Tun Razak launching the Serian-Pantu Junction works package

In the strictest sense, GIS is a computer system or map which is capable of integrating, storing, editing, analysing, sharing, and displaying geographically-referenced information.

Embarking on this state-of-the-art technology, the Pan Borneo Highway Sarawak is proud to be the first roads and highway project in Malaysia to utilise HIM technology.

Applying this technology in the construction of Pan Borneo Highway Sarawak greatly helps to digitise the organisation of bulks of construction information in one database which is accessible to everyone who is involved in the project.

Gone are the days when engineers have to rely on the bulky 2D engineering paper drawings as with the use of HIM, these drawings are now converted to 3D virtual drawing which is easily accessible by just a click on the computer keyboard.

The 3D drawing could give one an X-ray as well as that of aerial view of everything in the construction drawing which includes of anything that lies underneath the roads.

It will also provide accuracy of information in construction management, minimise and reduce the errors and discrepancies during the design and construction stage.

When it comes to the operation and maintenance of the highway, this technology used during the construction phase of this project is expected

Prime minister launching the 8 works packages in Miri

CH 22 + 500 onward Jalan Nyabau – Jalan Bakun



to result in cost savings and help in prolonging the lifecycle of the highway built.

For Pan Borneo Highway Sarawak, the technology is helping to manage 3D design information, track changes in design, detect clashes, reduce rework, manage construction, and linking information with asset tags to produce an efficient asset management solution.

Origins of Pan Borneo Highway Sarawak

The origins of a planned trunk road connecting the expansive states of Sarawak and Sabah with Brunei in between date back to the 1960s when it was known as the Trans-Borneo Highway.

The impetus for improved road connectivity across Sabah and Sarawak grew in the '70s, leading to a plan by the government together with Brunei and Kalimantan Indonesia to develop further the idea of constructing a highway along the coastline of Borneo. It would be called the Pan Borneo Highway.

Fast forward 50 years later and Sarawak's major trunk road system today is the Federal Route 1, part of the Pan Borneo Highway or Trans Borneo Highway.

It is mainly a two-lane single carriageway of JKR R3 standard design. Only 144 km (13%) of the trunk road from Sematan to Lawas is a four-lane dual carriageway of JKR R5 standard.

Travel across the vast state of Sarawak continues to be a long journey – up to 19 hours from Sematan to Miri currently.

To accelerate the social and economic growth of Sabah and Sarawak, a major effort to fully develop and upgrade the Pan Borneo Highway was announced by Malaysia's Prime Minister in April 2013 as part of the ruling political party Barisan Nasional's "AkuJanji" manifesto to the Nation. This was followed by a commitment in Budget 2015.





Facts about Pan Borneo Highway Sarawak

With a length of 1,060km, construction of Pan Borneo Highway Sarawak officially began on 31 March 2015 after it was launched by the Prime Minister Datuk Seri Najib Tun Razak in Bintulu. Construction works along a 43 km stretch from the Nyabau to Bakun junctions, known as Kick-Off Project (KOP) began soon after.

The highway project with the R5 design standard and worth M16.3bil, which spans from Telok Melano all the way to Miri consists of 11 works packages under the Phase One is undertaken by Sarawak contractors who were chosen as main contractor for each works package.

Phase Two of the project will cover Limbang and Lawas which will eventually connect the border of Sabah will begin this year.

With earthworks and land clearing being the major construction activities on the ground currently with most of the works packages well ahead of schedule, structural works are expected to begin by the third quarter of this year where more machineries will be mobilised to the 25 sections throughout the construction stretch.

When completed in early 2022, Pan Borneo Highway Sarawak is slated to be the transportation backbone of the states of Sabah and Sarawak and will play a major role to open up economic corridors and opportunities in areas it transverses.



The Highway Information Modellers converting the 2D drawing into 3D drawing on the computer





BIM REFERENCE

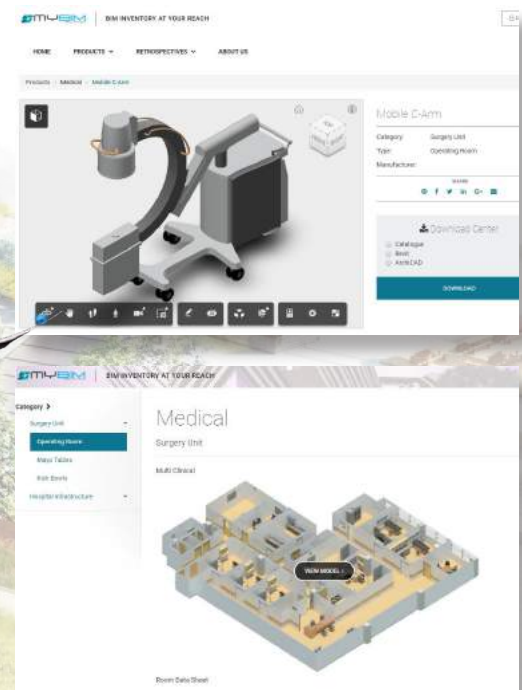
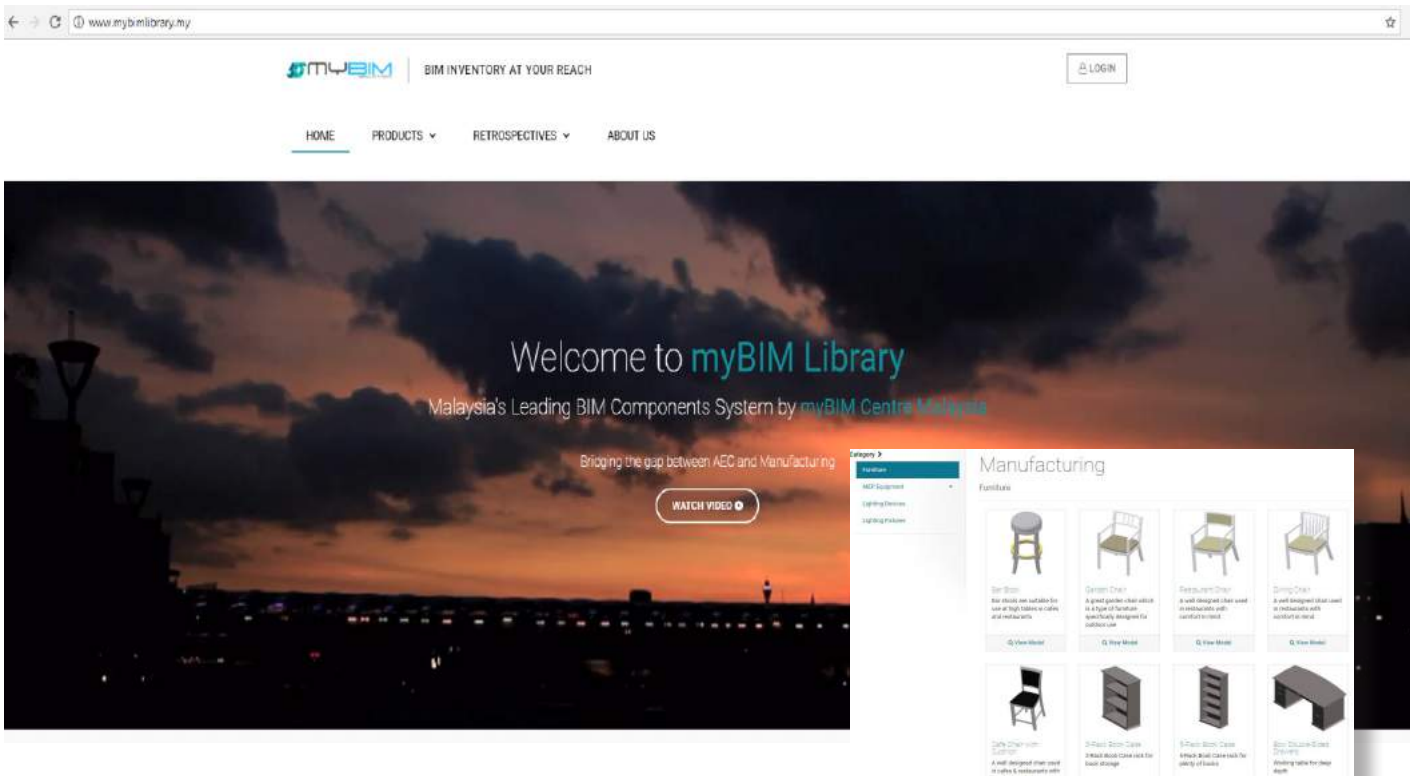
► myBIM LIBRARY

myBIM Library is an online storage of 3D BIM component or object files. The BIM objects consist of viewable, downloadable 3D objects with attached data that can be used in authoring BIM models. These 3D BIM objects can be downloaded for free by any registered user. The online storage of BIM Objects Library is an efficient way of finding the data needed to begin drafting, without having to redraw and reproduce this information. This can reduce cost and presents an effective solution when creating repetitive model information for larger projects. It is also an online reference and display area for product manufacturers and suppliers to upload their objects for the industry to use.

Once signed up to the myBIM Library portal you will be given regular updates and notifications, when downloaded objects have been changed or altered. Having information readily available online encourages greater collaboration, efficiency and more meaningful information exchange in the entire digital plan of work spectrum. It also reduces the need for mundane tasks and re-work, so that project teams operate more efficiently and focus their efforts on producing and enhancing designs.

myBIM Library help suppliers and manufacturers to promote their products more **Effectively** in the Digital Virtual World; To assist their sales team to meet the end users' daily activities more **Efficiently**; To use a better and more **Economical** method to reach out to the big pool of end users.

For more information, please refer <http://mybimlibrary.my/>



Users can browse
www.mybimlibrary.my to
know more about this system

► BIM GUIDE BOOK 4 – BIM EXECUTION PLAN

This BIM Execution Plan serves as a guideline and reference for the construction players to implement and execute BIM in their project. This initiative is part of the strategy of Construction Industry Development Board (CIDB) under the Construction Industry Transformation Programme 2016-2020 (CITP) to assist the industry players to move from Level 1 to Level 2 in 2020.

BIM Guide 4: Execution is a continuation from the earlier published BIM Guide books - BIM Guide 1 (Awareness); BIM Guide 2 (Readiness); and BIM Guide 3 (Adoption).

This BIM Guide 4: Execution presents the BIM execution process in an organization and a project.

This BIM Guide is divided into three parts:

- Part 1: Introduction to BIM Execution Plan;
- Part 2: A case study on BIM implementation Public Work Department (PWD) and SIME Darby Property Sdn. Bhd.;
- Part 3: Sample of BIM Execution Plan

Every BIM project should develop their own BEP, that is unique based on their project requirements and needs. This BIM Guide serves as industry reference for the common arrangement of BIM execution process. Different readers may have different interests and concerns. Thus, to gain practical knowledge on BIM execution process, it is recommended that readers to attend the BIM training sessions held at myBIM Centre.

This BIM Guide presents two industry examples of the BEP put into practice. Any interested organisations are invited to share and publish case studies on BIM execution process in subsequent versions. Interested parties may contact the BIM Secretariat at myBIM Centre.

For more information, users can download the BIM guide on our website:
www.mybimcentre.com.my.

BIM GUIDE

4

EXECUTION

BIM PROJECT IMPLEMENTATION

BIM was introduced in Public-Work Department (PWD) in 2007. Since then, various initiatives and strategies forwarded to institutionalize BIM in PWD.

PWD inspired to execute BIM project to enhance the productivity and efficiency in delivery government project. Up to year 2007, a total number of 17 projects utilized BIM process.

PWD records and published some BIM reference documents, such as Guidelines, Standards, Work Process Manual, BIM Requirements for Design and As-Built Projects, and Training Modules.

BIM has been executed in three types of project implementation:

- Design and Build
- Construction design in-house
- Construction design by consultant

The application behind BIM implementation in PWD to enhance the productivity and efficiency in delivering Government project.

It is proven that with BIM process execution, successfully can be optimized through effective collaboration process, increased return of investment, and reliable information to support the decision making process. Efficiency can be enhanced through integrated design process, reliable and accurate cost estimates, reduced/limited risk, and reduced potential dispute.

The next section presents the execution of BIM process in the PWD projects.

PWD BIM REFERENCE DOCUMENTS

PWD has taken a transformative effort by publishing BIM reference documents, all information is documented and can be integrated to PWD's Integrated Management System.

These BIM reference documents are applied to all construction design BIM projects (on-mesh) design & build. For BIM projects designed by consultant, these documents serve as reference for execution, and therefore some modifications must be made to fit the needs and requirements of the project.

The development of these BIM reference documents is based on the standard built on the main BIM platform for construction improvement process. These BIM reference documents will be reviewed and updated periodically according to the project needs and technological development. This is to optimize the benefits and value of BIM implementation.

Until 2017, PWD published six (6) reference documents for BIM implementation:

- PWD BIM Guidelines
- PWD BIM Work Process Manual
- PWD BIM Application for Design and As-Built Project
- Terms of Reference for Pre-Approved Plan (PAP)
- Training Modules



SDP BIM EXECUTION PLAN

Building Information Modeling (BIM) was introduced in Singapore's Public-Work Department (PWD) in 2007. Its goal is to support the implementation of Modern Building Construction (MBC) initiative.

BIM is introduced in major SDP's project to support design, construction and project management process. To date, 40 percent of the SDP projects implement BIM at various stages. In the PWD's 10-year plan, 24 phases project (budgeted to be launched with current level of detail) as follow:

BIM Usage at 100% 100	25% 100</td
BIM Usage at 100% 200	50% 100
BIM Usage at 100% 300	40% 100

The SDP's main goals in adopting BIM are:

- To improve the quality of design solution and
- To optimize the information exchange process between parties involved in construction project.

Various initiatives and strategies are formulated to institutionalize BIM in SDP. The achievement noted when SDP successfully published internal BIM reference documents such as:

- BIM Guidelines
- BIM Project Execution Plan (PEP)
- Standard Design & Specification Guidelines
- BIM Application Manual
- Standard Template with programmable standard plans

SDP BIM REFERENCE DOCUMENTS

Initially, SDP uses BIM as a catalyst to support the implementation of MBC in most of the project. In the process, SDP realize there is a need to improve business management strategy, design process and technology to improve the delivery and performance of the construction processes.

Hence, the SDP's established six (6) BIM Reference Documents as guidelines to standardize the BIM process.

It is expected that:

- Involved consultant (ie Architect) able to coordinate activities with the other consultants to initiate BIM Execution Plan (BEP) at the early stage.
- Parties involve able to distinguish project deliverable based on the BIM Model's requirements.
- Parties involve able to produce a model and changing according to the BIM Model's requirements.

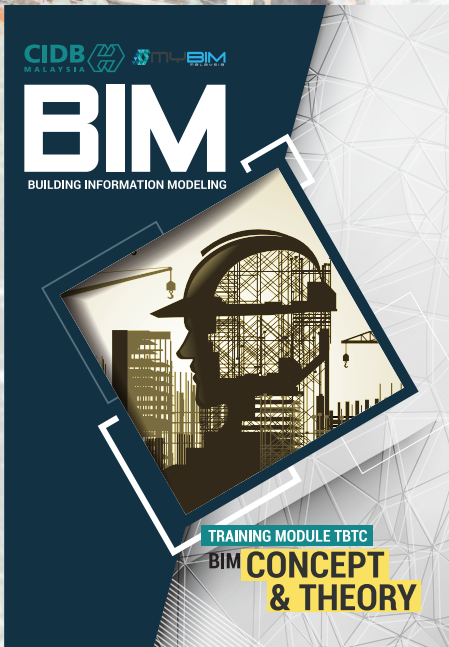
Implementation reference documents evolved since:

Document	Established in 2007	Revised/Updated since 2010
BIM Guidelines	Established in 2007	Updated version (2017) & Volume 2: Construction and BIM Guidelines
BIM Project Execution Plan (PEP)	Established since 2010	Some modification on design requirements due to need to meet to be consistent based on project and demand
Standard Design & Specification Guidelines	Established since 2010	No longer applicable due to software update and complexity change in project the reason that data
BIM Application Manual	Established since 2010	No longer applicable due to software update





BIM TRAINING



BIM CONCEPT & THEORY

The module is specifically designed for the individuals or organizations that are involved in the construction and keen to explore new technology with the aim to bring awareness of the recent developments 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 COORDINATOR

This module, as part of understanding and learning about BIM basics, teaches participants the concepts of coordination that is based on models and the use of model management software. The module uses sample data from real projects, and participants are guided step-by-step in using the hands-on approach. This will encompass coordination, audits and tests. Thus, technical work process and model management software will be applied in the learning.

COURSE OUTCOME

- Describe the flow of technical work processes for BIM model coordination.
- Describe the use of BIM models to check on the intent of the design.
- Open and append BIM file models from various sources and store them in the model management software.
- Perform visual reviews of the project models and use the report function.
- Review and audit the accuracy and adequacy of the information stored in the BIM models.
- Implement the model collision test produced by various parties.
- Prepare reports for clash review and model audits.

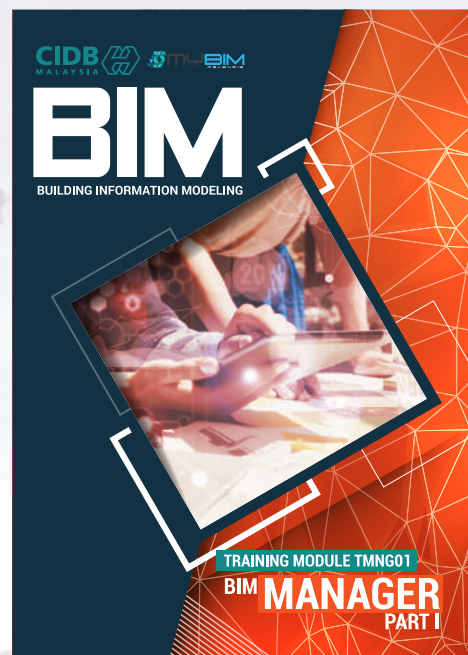


The module is specifically designed for senior construction professionals and is divided into two Parts i.e. BIM Implementation and Management. Part 1 gives the BIM Manager understanding on their roles and responsibilities and job functions, more information and knowledge on BIM software and issues, BIM Protocols including the standards used and the Employer Information Requirements (EIRs) which are needed to develop a successful BIM Execution Plan. Part 2 is the extension of Part 1 where it covers Process and Technology of BIM. The participants will be exposed and learned how to develop a process map which is essential for the BEP development. The participants also will be explained on the collaboration concepts of Common Data Environment (CDE) and also how the collaboration can be implemented using the collaborative technology.

COURSE OUTCOME

- Understand BIM Manager roles and responsibilities and job functions;
- Expose more knowledge on BIM software and Issues;
- Understand basic information on BIM Protocol including the standards used;
- Understanding the Employer Information Requirements (EIRs) that are need to developed at early stage of BIM project;
- Understand the development of BIM Execution Plan (BEP) and the relation with BS1192:2007 and PAS1192-2.
- Understand the important of information management;
- Understand and be able to develop process modelling and BIM process mapping;
- Understand the Common Data Environment (CDE);
- Understand and be able to identify which collaboration technology needed;
- Understand on BIM competency and Organizational Readiness Framework;
- Understand the BIM related roles and responsibilities;
- Develop more comprehensive BEP using BIM Process Maps and Information Exchange.

As an improvement to BIM training modules, myBIM Center is still in the process of making BIM training modules for MEP, Infrastructure and facility management. all these new modules will be completed by the end of 2018 and will be adopted by 2019.



BIM MANAGER

BIM MODELLER

In this course, BIM Fundamental Modelling for Architecture or Structure, the focus is given on developing technical competency to author, manage and extracting design deliverables using 3D parametric tools. The course will guide the participants through a step-by-step project based workflow to learn and implement BIM using a real project data. The training is therefore designed practically hands-on where the participants are required to model a digital 6 storey office building by focusing on architectural element in a building. It is therefore, targeted at skill sets to develop competency in hands-on technical skill, BIM knowledge and pro-active problem solving which tailored to suit local requirement.

COURSE OUTCOME

- Operate a 3D parametric modelling tool
- Interpret design intent to be used in technical modelling
- Develop a 3D BIM model appropriately
- Extract and prepare related design deliverables such as drawings, material schedule, schedule of accommodation and etc.
- Utilise 3D BIM model as interaction, communication and collaboration tools
- Apply BIM based process flow of technical modelling
- Identify problems and associated challenges in delivering BIM based process flow



BIM ARTICLE

BIM ADOPTION IN MALAYSIAN CONTRACTOR COMPANIES

Mohamad Baharin bin Ahmed
M.Eng (Civil) UTHM
M.Sc (BIM & Integrated Design) Salford Lecturer,
Lecturer, KKTM Sri Gading

Izzati Binti Yahya
B.Sc (Hons) Architecture UiTM Shah Alam
Lecturer, KKTM Sri Gading

Building Information Modelling (BIM) is a new technology with set of processes that can resolve the project challenges. BIM can improve the quality and accuracy of project, save cost of project delivery and can be used to detect clash before the project is execute. Nevertheless, it is not meaningful if the contractors not adopt the BIM in the projects or organization. The main objective of this article is to study the factor that will influenced them to adopt BIM.

BIM can be effectively beneficial throughout building life cycle from pre-construction to post-construction. The contractor relates the benefits of BIM to the usage of BIM during construction stage. Many researchers come out with their result of benefits of BIM. Each phase of building life cycle has different impact and benefits to the personal in that particular phase. McGraw Hill (2013) divided the benefits of BIM to contractor into three categories. The categories are internal benefits – the business benefits that contractors obtained, project benefits – the improvement on the project that use BIM and process benefits – the benefits that improve the project



workflows and processes between disciplines. Various benefits obtained to the project in general and in particular to the contractor if BIM is used. Nevertheless, it not meaningful if the contractors not adopt the BIM in the projects or organization. Therefore, the factors that encourage contractors to use the BIM should be identified. Three mainly factors were determinants the new technology adoption: perceived benefits, external pressure and internal readiness (Chwelos, Benbasat & Dexter, 2001).

Perceived benefits are the anticipated advantages that the new technology can provide to the organization. This is including direct and indirect benefits. Direct benefits to the organization such as operational cost savings, reduced paperwork, less data entry and minimum error rates. Indirect benefits for example improved customer service and improved processes. External pressure is the forces from several sources mainly by competitive environment within surrounding organization. It is about the ability of new technology to maintain or increase competitiveness within the industry. Organizational readiness means the IT sophistication and financial resources to adopt new technology. This is about not only the technological expertise but the top management understanding and support for using new technology.

With the available timeframe, researcher manage to get 29 respondents participated in this survey. Table 1 shows the overall average result that has been analysed. Note that the value is from 1 (strongly disagree) to 5 (strongly agree). From the result, improve quality and size

projects have the highest value (3.9). It is proved that the contractors in Malaysia will adopt BIM in their organization if it is proven that BIM can improve the quality of project. On the same value, the contractor will adopt BIM depends on the size (value) of project. If the project has big size, it is worth to invest in BIM. The lowest value (2.9) is subcontractors or partners experienced in BIM. It can be conclude that the subcontractors or partners are not influenced the contractor to adopt BIM.

BIM adoption in Malaysia is still in an early stage. A lot of researchers and result from data analysis shown that there are very few AEC personal involve in BIM projects or BIM implemented in their organization. Most of the BIM usage is in the design stage. The respondents who have experienced in BIM said that the major challenges in adopting BIM in Malaysia is competency. It is hard to find the employee that has the required competency level to work in BIM project.

References:

McGraw Hill Construction (2013), The Business Value of BIM for Construction in Major Global Market, How Contractors Around The World Are Driving Innovation With Building Information Modelling, Smart Market Report, McGraw Hill.
Chwelos, P., Benbasat, I., & Dexter, A. S. (2001). Research report: Empirical test of an EDI adoption model. Information systems research, 12(3), 304-321.

The content of this article is part of Dissertation entitled BIM Adoption In Malaysian Contractor Companies for M.Sc (BIM & Integrated Design), University of Salford, Manchester.

Table 1: Overall average result for BIM adoption factors.

Factors	Average value	Factors	Average value	Factors	Average value
Encourage by Top Management	3.5	Other Parties Pressure	3.1	Save Project Cost	3.8
Investment Financial	3.3	Competitors Pressure	3.2	Clash Detection	3.7
Size/Grade Company	3.8	Subcontractor/Partner Experienced	2.9	Improve Quality	3.9
Training Programme	3.7	Improve Collaboration	3.3	Ability Compete	3.8
Number Expert	3.2	Client Request	3.6	Reduce Time	3.7
Data Management	3.0	Government Mandate	3.8	Size Project	3.9
Remain Competitive	3.6	Government Incentive	3.8	Sustainable Development	3.6

BIM FOR INFRASTRUCTURE PROJECTS

**Pioneering New BIM Processes in Malaysia.
by Bina Initiatives Sdn Bhd**

BIM adoption in Malaysia is moving forward with many companies focusing on the detailed design phase where design changes can be made to enhance efficiency and reduce waste in construction. As a pioneer in providing BIM services in the country, Bina Initiatives is involved with many projects regardless Building or Infrastructure projects.

We have seen how an increase in information available lends itself to many uses including survey, design, construction planning & monitoring, project delivery and asset management. As the pioneer we always look for the best technology and cost-effective solutions for Malaysia's construction industry. With this in mind we have evaluated many BIM solutions and recognized Bentley's software has the complete fit in the project development life cycle. Bentley solutions include project delivery and improve asset performance for advancing infrastructure, including railways, roadways, airports, buildings, plants, power plants, and utility networks, which sustains the economy and environment.

"We are proud to be a key contributor in Malaysia's initiatives to advance infrastructure, which is a common objective we share with CIDB. Bentley software solutions have been used in many Malaysian infrastructure projects, and we are glad to note that three of the 17 winners of Bentley's Be Inspired Awards in 2017 were by organizations based in Malaysia. " – Kaushik Chakraborty, Vice President – Southeast Asia and India, Bentley Systems

As part of their efforts in enabling the industry to be more efficient and productive, Bentley recently introduced iModel 2.0 which is their Next Generation Cloud Platform for Digital Workflows for Building and Infrastructure Projects. This introduces a new digital workflow that tracks changes, aligns representation of the changes, synchronize across multiple platforms and bridge access to data without users changing applications or formats.

"BIM Adoption is no more expensive in Malaysia with Bentley Systems solution that provides both options such as subscription (pay as per use) or perpetual license structure for project base. Bentley BIM solution also allows the customer to own the license for life and can use any tools from Bentley Systems with the same price." – N.V. Kumaran, General Manager – Bina Initiatives Sdn. Bhd.

We are very much excited about this new development and look forward to a brighter future for the construction industry in Malaysia. All of which are possible with the broader implementation of BIM and its benefits to transform the industry.



By using a common data environment, all users are able to derive the greater benefits of BIM as showcased by the companies below

- a) Answer Ingeniería developed an integrated model of the Edificio Libertad Romero complex in Chile that helped reduce their design time by 17%. They optimized their design through the BIM process and saved concrete costs by 3.7%. – https://www.bentley.com/en/project-profiles/2016/answer-ingenieria_edificio-libertad-romero
- b) CCCC First Highway Consultants implemented a 3D collaborative design workflow that reduced costs by CNY 2.2 million and delivered the project 43 days ahead of schedule. – https://www.bentley.com/en/project-profiles/2017/cccc-first-highway_meiguan-expressway
- c) Imarati Engineers & Consultants (IEC) selected the i-model format for data exchange, visualization and BIM updates. Reports were derived in just 2 hours instead of 780 hours normally. – https://www.bentley.com/en/project-profiles/imarati-engineers-and-consultants_iec-bim-based-program-management



BIM ARTICLE

IT'S THE END OF BIM AS YOU KNOW IT — ARE YOU READY FOR CONNECTED BIM?

By Nicolas Mangon, Vice President AEC Strategy
& Marketing, Autodesk

This article originally appeared on Autodesk's Redshift, a site dedicated to inspiring designers, engineers, builders, and makers.

It's oddly fitting that sensors, some of the cheapest technologies on the market, are poised to completely redefine construction, one of the world's largest industries.

Sensors are rather simple. They attach to something and gauge temperature, humidity, light, motion, or whatever else you might want measured. Similarly, GPS technology is one-note, in that it only tells you where something is located.

But when you combine these two technologies with 3D modeling in the cloud, you no longer have mere raw data. There's now a real-time connection between a physical construction site and its digital twin in the cloud—unlocking an infinite number of opportunities for efficiency and project management.

Those three things will dramatically change construction practices by ushering in connected BIM: Building Information Modeling (BIM) plus the power of the cloud. The evolution of BIM is a necessity to address the increasing challenges facing the construction industry.

Construction Disruption

According to McKinsey & Company, "The construction industry is ripe for disruption," and I couldn't agree more. First and foremost, construction is a massive industry. It represents 6 percent of global gross domestic product (GDP) and employs about 200 million people.

Its biggest challenge is that the world's population is growing and moving to cities. Today, 3.5 billion people live in cities—by 2050, just 30 years from now, cities will need to accommodate another 2.5 billion. To address that need would mean building almost 1,000 buildings every day for the next 30

years.

Unfortunately, construction is one of the least-prepared industries to address this challenge. It has barely digitized at all: The McKinsey report places construction only slightly ahead of agriculture and hunting, as only 1.2 percent of its revenue goes toward advancing technology.

Some governments are mandating BIM technology to streamline and modernize construction processes. For example, as of 2016, Level 2 BIM is mandatory for all public projects in the UK. But professional architects, engineers, and contractors weren't waiting around for regulation before adopting BIM.


That's because construction productivity is in dire need of improvement. Last year, McKinsey & Company reported that large infrastructure construction projects "typically take 20 percent longer to finish than scheduled and are up to 80 percent over budget."

Two threads are emerging: One, BIM is going to continue to be standardized. And two, many industry leaders who are currently ahead of the technology curve will work hard to stay out in front.

Even if you look at the United States, where there has been no government mandate, contractors are making significant investments in BIM. According to a 2014 SmartMarket Report about BIM in construction, contractors reported that they expected to see their BIM-related work increase by 50 percent within two years.

Cloud Collaboration and Coordination

The real benefits of connected BIM in the future will be clear once people glimpse how cloud and mobile technologies enable

A tall building under construction with a crane in the background. The building has many windows and balconies. The crane is orange and is lifting a load. The sky is blue with some clouds.

a completely new era of collaboration. Today, construction sites still use a lot of paper to communicate. Beyond the obvious inefficiencies and huge costs, the real problem is that the moment the drawings are printed, they are already outdated.

By using mobile technologies to manage drawings on construction sites—tracking and updating information continually in real time—an inherent trust develops as far as who on the team did the what, when, why, and how. Everything is tracked directly in the cloud for the entire project life cycle.

Connected BIM also helps manage risk on construction projects while enabling greater efficiency and higher quality. It allows you to capture a ton of data and analyze it to optimize future projects. For example, you could collect data that uncovers project delays when electricians and plumbers are involved on projects. But if you unpack the reasons for those delays, you might realize that a plumbing delay was caused by materials not being delivered on time or by ordering the wrong materials. Or it could be that the work was done perfectly and on time, but it was finished before someone else needed to punch holes in the walls where the plumber had already finished working. And that would mean bringing the plumber back in to redo that work. A “plumbing delay” could encompass so many other factors, but with the data, you can figure out how to better schedule plumbing and electrical work so they are called in at the right time—keeping future projects on schedule.

Just Add VR and IoT

Another perk of connected BIM is that digital collaboration opens the door to virtual reality (VR), which seems like some out-there feature until you see its practical applications. Think about how process decisions and changes are currently handled via email. Now imagine you could explain what needed to be changed at a site to a construction worker in a virtual-reality environment. You and the worker could be in the same 3D environment—a fully immersive experience—seeing the same things instead of explaining what needs to be done or reading it in an email. I think these kinds of immersive VR experiences, once experienced, will quickly become the default way to communicate.

But the Internet of Things (IoT) is the technology that will truly redefine and recontextualize BIM. IoT unlocks the performance potential of construction sites. Today, there can be people, machines, and materials located onsite or offsite, but it's hard to know how these things connect and whether they are efficient.

Yet once construction sites are equipped with all kinds of sensors, it will be possible to understand where people spend their time, how machines are used, and if the materials have been delivered or installed. All this information will be captured and aggregated on a dashboard in the cloud. The Big Data can then be analyzed to start identifying trends about what's working—or not working. Once this technology is used on one, 10, hundreds, or thousands of projects, it will be clearer to stakeholders why some projects go well and others don't. But if you expand it beyond that, it gets even more interesting. A bunch of companies—such as Redpoint Positioning, Pillar Technologies, and Human Condition—are using sensors to capture information and show how people behave on a construction site.

Human Condition understands how people carry loads or climb ladders, and it can analyze if they are maintaining proper form for these actions. Using data, it can actually predict if workers will be injured in the future, based on whether they bend too much or the wrong way too many times. And, again, if you do that across tens of thousands of construction workers in the world, it will be possible to prevent injuries from happening in the first place.

When you see how this connectivity impacts every facet of a construction site—improving the efficiency, safety, and cost—it's not even a question of whether the industry will move in this direction, only how quickly.

BIM FOR CIVIL WORKS IN PWD BUILDING'S PROJECT

INTRODUCTION

Building Information Modelling (BIM) is a phrase referring to a process where the parametric 3D digital technology applied in construction industries. The implementation of BIM is not only in vertical construction (building) but also applicable for horizontal construction such as roads, highways, bridges and railway. As for horizontal element in building project often known as Civil Works or Building Infrastructure Works, the components include:

- i. Earthworks
- ii. Sewerage System
- iii. External Water Reticulation System
- iv. Drainage System
- v. Internal Roads including Access Roads

In line with BIM work process, Civil Works are modelled, coordinated and collaborated with other associated work such as Site Model from Architect and Internal Cold Water and Sanitary System Model from Mechanical Engineer.

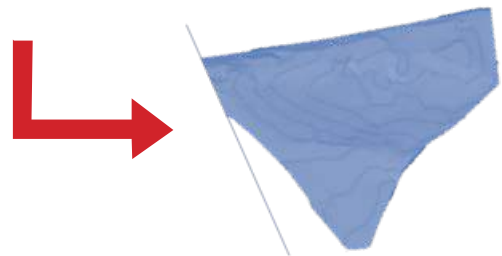
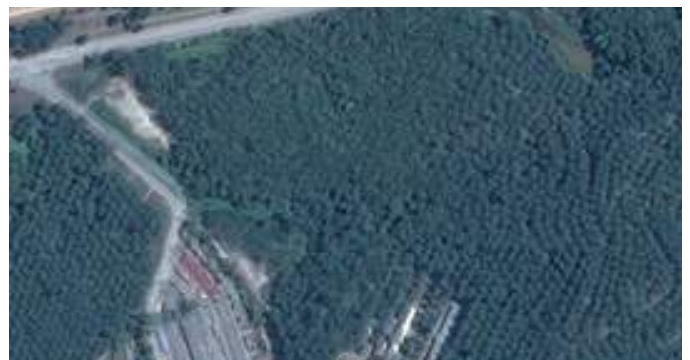
BIM USES

The BIM uses for civil works can be such as below by referring to its BIM objectives of project:

- i. Existing Conditions Modelling
- ii. Site Analysis
- iii. Cost Estimation
- iv. Design Authoring
- v. Design Review
- vi. 3D Coordination
- vii. Record Modelling

BIM USES AND ITS BENEFITS IN PROJECT.

BIM Uses: Existing Condition Modelling – A process where 3D model developed to capture the site condition before and after the development. Model is develop based on land survey data such as Survey Plan and Underground Utility Map.



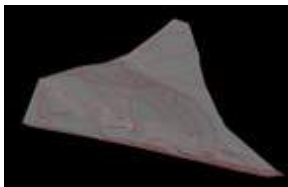
Information Definition Analysis Statistics	
Statistics	
General	Value
Revision number	0
Number of points	7988
Minimum X coordinate	49972.009m
Minimum Y coordinate	-4798.115m
Maximum X coordinate	50542.966m
Maximum Y coordinate	-4394.741m
Minimum elevation	46.000m
Maximum elevation	76.000m
Mean elevation	60.710m
Extended	

BIM Objective: Visualization of site condition model

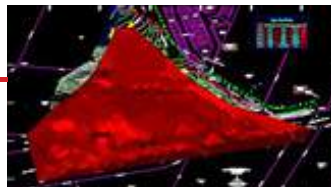
BIM Benefits:

- i. Better understanding of site topography through 3D visualization and statistic data generated from the model
- ii. Provide and enhance efficiency and accuracy of existing conditions documentation
- iii. Improve coordination between existing condition and future construction for civil works

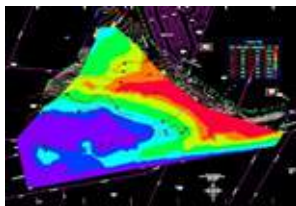
BIM Uses: Site Analysis – An investigation process of Existing Condition Model to obtain information on site condition. Information are used to assist in decision making and conclude the best way to start the design.



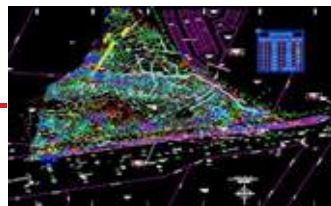
Contour Analysis



Slope Analysis



Platform Analysis



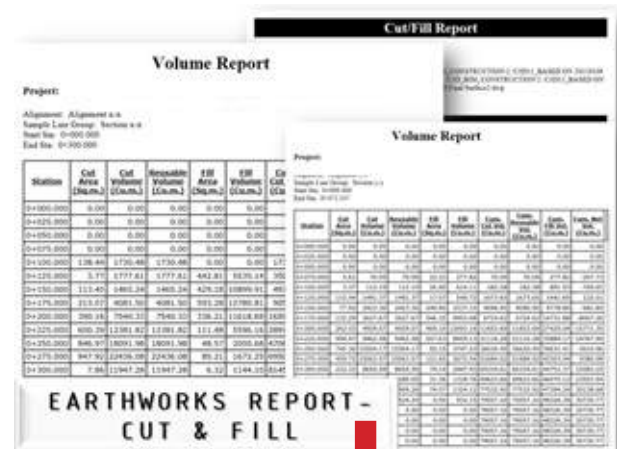
Water Flow Analysis

BIM Objective: Optimize site planning

BIM Benefits:

- Use calculated decision making to provide civil works design option
- Optimize site uses
- Use calculated decision making to determine if potential sites meet the required criteria according to project requirements, technical factors, and financial factors
- Optimize site uses and cost of external works

BIM Uses: Cost Estimation – A process where detailed measurement of materials (selected materials only) and quantities generated from the model being used for cost estimation

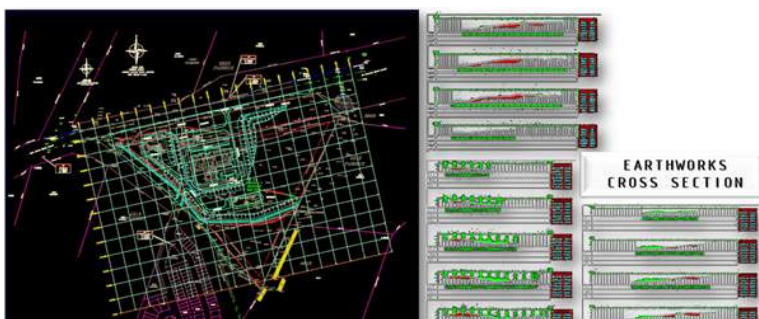


BIM Objective: Generate Civil Works quantity

BIM Benefits:

- Estimate material quantities and generate quick revisions if needed
- Stay within budget constraints with frequent preliminary cost estimate while the design progresses
- Stay within budget constraints with frequent preliminary cost estimate while the design progresses

BIM Uses: Design Authoring – A process in which developing a Building Information Model to analyse based on design criteria.



BIM Objectives: Visualisation, coordination and documentation of the project

BIM Benefits:

- Transparency of design for all stakeholders
- Better control and quality control of design, cost and schedule
- Powerful design visualization and coordination

BIM Uses: Design Review – A process in which Virtual mock-up or showcase the design to the stakeholders and evaluate meeting the program and set criteria.

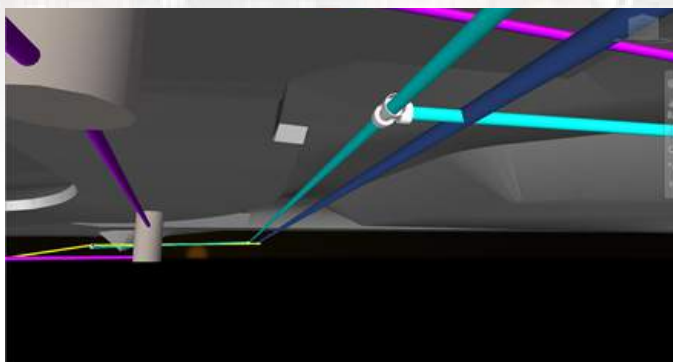


BIM Objective: Ease of design reviews process

BIM Benefits:

- i. Eliminate costly and timely traditional construction mock-ups
- ii. Different design options and alternatives are easy to model and change real-time during design review by end users or owner
- iii. Create shorter and more efficient design reviews
- iv. Easily communicate the design to the owner, construction team and end users

BIM Uses: 3D Coordination – a process in which Clash Detection software is used during the coordination process to determine field conflicts by comparing 3D models of building systems.

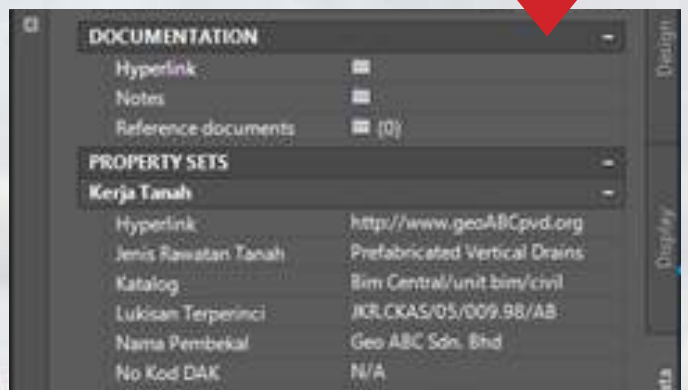


BIM Objective: Minimizing conflicts and mistakes during construction

BIM Benefits:

- i. Coordinate site model through a model
- ii. Reduce and eliminate field conflicts
- iii. Visualize construction
- iv. Increase productivity
- v. Reduced construction cost

BIM Uses: Record Modelling – A process of incorporating data into 3D model with depiction of the physical conditions and environment of a facility and its assets.



BIM Objective: Facilitate facility record capturing for FM system use

BIM Benefits:

- i. Aid in future modelling and 3D design coordination for renovation
- ii. Provide documentation of environment for future uses
- iii. Visualize as-built model of civil works

Conclusion.

These BIM benefits can be achieved if the model developed with a right process by referring to guidelines, standards and BIM project execution plan of the project.

References:

1. Cawangan Pengurusan Projek Kompleks JKR Malaysia (2014). Garis Panduan BIM JKR (Edisi 2014). Jabatan Kerja Raya Malaysia
2. Penn State Department Architectural Engineering (2010). BIM Project Execution Planning Guide. (Version 2.0). The Pennsylvania State University, USA

Source:

Building Information Modeling Unit
Public Works Department (PWD)

BIM NEWS

Projek awam RM100 juta ke atas wajib guna BIM

Semua projek awam yang bernilai RM100 juta dan ke atas diwajibkan menggunakan sistem Pemodelan Maklumat Bangunan (BIM) mulai 2019, kata Menteri Kerja Raya, Datuk Seri Fadillah Yusof.

Beliau berkata, penggunaan BIM akan meningkatkan kecekapan, produktiviti dan kualiti keseluruhan proses pembinaan, di samping mengurangkan kos pembinaan dan mengelakkan masalah reka bentuk dalam fasa perancangan.

"BIM membolehkan semua pihak yang terlibat dalam projek itu untuk memvisualisasikan, mengkoordinasikan dan menganalisis ciri fizikal dan fungsi utama setiap elemen sebelum pembinaan bermula.

"Ia juga berupaya membantu pihak pemaju mencapai sasaran menyiapkan bangunan dalam kualiti ditetapkan dan mengelak daripada berlaku perubahan kontrak," katanya ketika merasmikan Pusat myBIM di Kuala Lumpur, semalam.

Fadillah berkata, kerajaan sedang mempertimbangkan untuk

menggunakan BIM bagi membina empat hospital awam yang memerlukan perancangan terperinci dan kos yang tinggi.

Lancar Pusat myBIM
"Pembinaan hospital tidak seperti bangunan lain. Ia memerlukan koordinasi di antara pemasangan peralatan perubahan dan keselamatan terperinci yang mana penggunaan BIM amat diperlukan untuk memastikan ciri bangunan hospital.

"Antara kejayaan penggunaan BIM dalam projek kerajaan ialah pembinaan Institut Kanser Negara, Putrajaya yang di selakikan Jabatan Kerja Raya dan disipkan dalam masa dan dengan kos ditetapkan," katanya.

Sementara itu, Fadillah berkata, Pusat myBIM akan bertindak sebagai pusat rujukan untuk penggunaan sistem BIM, termasuk menjadi pusat latihan untuk pemuja, kontraktor, perunding dan pembekal BIM.

Pusat myBIM adalah pusat se-henti berperanan sebagai tempat rujukan untuk mempromosikan dan meningkatkan pengu-

naan sistem BIM dalam pengiat industri pembinaan.

Labur RM3 juta
Ketua Pegawai Eksekutif Lembaga Pembangunan Industri Pembinaan (CIDB), Datuk Ir Ahmad Asri Abdul Hamid, berkata dengan pelaburan RM3 juta, pusat itu membolehkan peserta industri membuat model dan melihat projek pembangunan dalam simulasi menggunakan BIM.

"Sistem BIM adalah teknologi pemodelan untuk menghasilkan, menghubungkan dan menganalisis maklumat digital model sepanjang perkembangan projek pembinaan.

"Kemampuan menganalisis ciri fizikal setiap elemen secara maya sebelum kerja pembinaan bermula membantu meningkatkan keberkesanan dan kualiti serta produktiviti keseluruhan proses pembinaan," katanya.

Pusat myBIM menyediakan kemudahan, peralatan dan perisian merangkumi bilik seminar dengan sistem audio visual yang lengkap bagi program latihan serta akreditasi kemahiran.



Fadillah melihat kemudahan di Pusat myBIM selepas merasmikan pusat berkenaan di Kuala Lumpur, semalam.

CIDB peruntuk RM1 juta dana BIM bantu syarikat

KUALA LUMPUR 28 NOV. Lembaga Pembangunan Industri Pembinaan Malaysia (CIDB) memperuntukkan sebanyak RM1 juta di bawah Dana Transformasi Model Bersepadu Berasaskan (DABM) untuk membantu syarikat-syarikat kecil dan sederhana (KUS) dalam menggunakan BIM.

Ketua Pegawai Eksekutif CIDB, Datuk Ir Ahmad Asri Abdul Hamid, berkata, melalui dana ini, syarikat-syarikat KUS akan dapat meningkatkan kualiti projek mereka dengan menggunakan BIM.

Beliau berkata, syarikat-syarikat KUS akan dapat meningkatkan kualiti projek mereka dengan menggunakan BIM.

"Syarikat-syarikat KUS akan dapat meningkatkan kualiti projek mereka dengan menggunakan BIM," katanya.

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FADILLAH (tengah) dan Ahmad Asri Abdul Hamid (kanan) melihat kemudahan di Pusat myBIM selepas merasmikan pusat berkenaan di Kuala Lumpur, semalam.

New Straits Times • TUESDAY, NOVEMBER 21, 2017

8 NEWS / Nation

'MESSAGE TO DEVELOPERS'

FADILLAH: FREEZE ON LUXURY PROJECTS NOT ABSOLUTE

Approval will be given on a case-by-case basis, says minister

AL ZA SHAH
AND AYESH YUSOF
KUALA LUMPUR
news@nsc.com.my

APPROVAL for luxury property developments will be given on a case-by-case basis.

Works Minister Datuk Seri Fadillah Yusof said the government's decision to freeze approvals for luxury property projects was made based on Bank Negara Malaysia's (BNM) recommendation.

He said the move, however, did not involve all projects.

"This is not a blanket stop order. The government is sending a message to developers to study whether there will be (sufficient demand for a project) before they proceed.

"If you sell RM1 million condominium units in (unattractive) areas, it may not attract buyers.

"But if you sell RM4 million



Works Minister Datuk Seri Fadillah Yusof at the myBIM centre in Kuala Lumpur yesterday. PIC BY ASWADI ALIAS

ones near the Kuala Lumpur Convention Centre, you will get buyers, especially expatriates," he said after launching the country's first myBIM centre at Sunway Putra Tower here.

Fadillah said being selective in approving high-end projects would address the surplus in the

luxury segment.

On Sunday, Second Finance Minister Datuk Seri Johari Abdul Ghani said the cabinet had decided to freeze approvals of luxury projects from Nov 1.

The move was made after scrutinising a Bank Negara report published in June on Malaysia's

high-end real estate glut, which has outstripped market demand for affordable homes.

Johani said the cabinet decided to temporarily stop developments of shopping malls, commercial complexes and condominiums, whose units cost more than RM1 million.

RM1 juta untuk sistem BIM



FADILLAH (tengah) merasmikan pusat myBIM di Kuala Lumpur semalam. (Dua orang di belakangnya) Datuk Seri Johari Abdul Ghani dan Datuk Seri Fadillah Yusof.

Datuk Seri Fadillah Yusof di Menteri Kerja Raya, Datuk Seri Johari Abdul Ghani, merasmikan pusat myBIM di Kuala Lumpur semalam.

Beliau berkata, pusat myBIM akan menjadi pusat rujukan untuk penggunaan sistem BIM, termasuk menjadi pusat latihan untuk pemuja, kontraktor, perunding dan pembekal BIM.

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BIM EVENT

Malaysia's premier myBIM Centre is a great move forward

The face of construction has indeed undergone a shift of major proportions as reflected in the emergence of many spectacular construction marvels around the world. Much of this boom is attributed to the tremendous contribution of BIM, a technology which has become as much a talking point as it is a game-changer.

BIM (Building Information Modeling) is essentially the digital description of every aspect of a structure. It is a comprehensive process for creating and managing all of the information on a project - prior, during and post construction.

BIM provides the opportunity to try out solutions in advance before building the structure on site: with a constructible model, the structure can be prototyped virtually, thus making it easier for stakeholders to understand and review the design. This reality is very far from the common misconception that BIM is all about 3D design.

BIM is recognised as advanced ICT that is revolutionising the construction industry and Malaysia too is keen on not being left behind. The Construction Industry Board of Malaysia (CIDB) has taken a huge leap by establishing myBIM Centre, Malaysia's first premier one-stop centre, to promote and increase the use of the BIM system among construction industry players.

Established with an initial investment of RM3 million, CIDB's myBIM Centre was officially launched by the Minister of Works, Dato' Sri Fadillah Yusof, on Nov 20, 2017.

Acknowledging that he was proud to launch such an advanced BIM centre in Malaysia, the minister said: "I wish to see a substantial increase in the use of BIM technology among construction industry players in Malaysia. Through the initiatives of CIDB and the opening of myBIM Centre, Malaysia's construction industry should vigorously adopt BIM. In fact, this technology is no longer a choice but a necessity."

"BIM will increase competency and productivity and improve the construction process as a whole. BIM technology also reduces construction cost and helps avoid design problems during the planning phase. These are the main reasons the government is promoting the usage of BIM in the industry."

Fadillah also announced that starting 2019 the government will instruct all public projects valued at more than RM100 million to use BIM Level 2, and that the government plans to use BIM for the building of four hospitals in the public construction industry, towards its aim of becoming a developed nation by 2020.

BEYOND JUST TECHNOLOGY

The adoption of BIM in Malaysia is relatively lower, standing at 17% compared to more developed economies such as the United States at 71% and the United Kingdom at 54%. According to the Malaysian Productivity Corporation, the construction industry recorded the lowest productivity level of RM40,018 per worker in 2016, in comparison to other high-scoring sectors such as agriculture, services and manufacturing.

It is to empower and strengthen the construction industry and overcome such problems that the Construction Industry Transformation Programme (CITP) was formed in 2015. CITP, spearheaded by the Ministry of Works and ably supported by the CIDB,

has been the driving force behind the introduction of initiatives such as the National BIM Centre that are aimed at ensuring the construction industry readily embraces new technologies and latest construction methods to keep abreast with global changes and remain competitive.

The newly launched myBIM Centre situated in Menara Sunway Putra in Kuala Lumpur, features state-of-the-art facilities, including a studio available for rental to all BIM practitioners; a lab, a seminar room and a showcase area, enabling construction industry players to model and visualise building projects in a simulated environment.

The centre also offers BIM software and proficiency training programmes complementing the use of the National BIM Library portal. To date, the centre has trained 1,300 BIM personnel. The myBIM portal is also ready and it contains details of BIM facilities and programmes.

Chief Executive of CIDB Malaysia, Dato' Ir. Ahmad 'Asri Abdul Hamid, in his speech during the launch said: "When a building is designed using the digital platform, we can identify problems that will arise

during construction in the early stages. Using BIM, problems can be detected during the planning and designing stages itself, making the implementation of the project smooth.

"The establishment of this centre is set to improve productivity levels in the construction industry. Training personnel to become BIM experts is the biggest challenge and for this CIDB is working in collaboration with various educational institutes."

MyBIM Centre is anticipated to facilitate smaller and upcoming industry players to ensure they have access to the BIM technology as the authorities are aware that the BIM adoption process involves several change management initiatives to support skill-upgrading and technology competency.

It 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.

Asri detailed CIDB's initiatives to encourage industry players to fully utilise its myBIM services. "To spur the adoption of BIM in the construction industry, CIDB is



allocating an RM1 million incentive for contractors, developers and consultants to utilise this technology in 2018 for relevant personnel to be trained at the myBIM centre. Companies can apply for a minimum of RM33,000 under the CIDB Transformation Fund programme, catering for BIM learning," he said.

Leading construction companies in Malaysia have been using the BIM technology to great success. MRT Corporation is a fine example of the success of BIM. The company recently won in the Transport Infrastructure Category for their Building Information Modelling (BIM) Level 2 implementation throughout the design and construction of the SSP Line. MRT Corporation continues to train and educate its personnel in BIM and apart from the increase in competency and productivity, MRT Corporation also amassed benefits in cost reduction through BIM.

During the myBIM Centre launch Fadillah also witnessed the memorandum signing of myBIM Centre with Universiti Sains Malaysia, Universiti Malaysia Pahang, Universiti Malaysia Perlis, Universiti Teknologi Malaysia and Universiti Malaysia Sabah to expand BIM training programmes to satellite centres based in the campuses of these universities.

Fadillah ended the event on a powerful note saying: "We need to run to become global players. This is the time to innovate. Instead of being just users of technology we must become producers of technology. BIM is the way forward for Malaysians to become more productive, competitive international players."



BIM EVENT

'JELAJAH BIM & IBS 2017'

Continued from the BIM 2015 introductory tour series, 'Jelajah BIM and IBS 2017' spread its wings late November 2017 at the Hotel Weil in Ipoh Perak. The roadshow seminar was part of CIDB's 2017 ongoing effort of educating and creating deeper interest on BIM.

The seminar focused on introducing BIM and IBS as well as its uses to local authorities, developers, consultants and contractors and its cost-effective adaptation methods in the increasingly challenging industry competition.

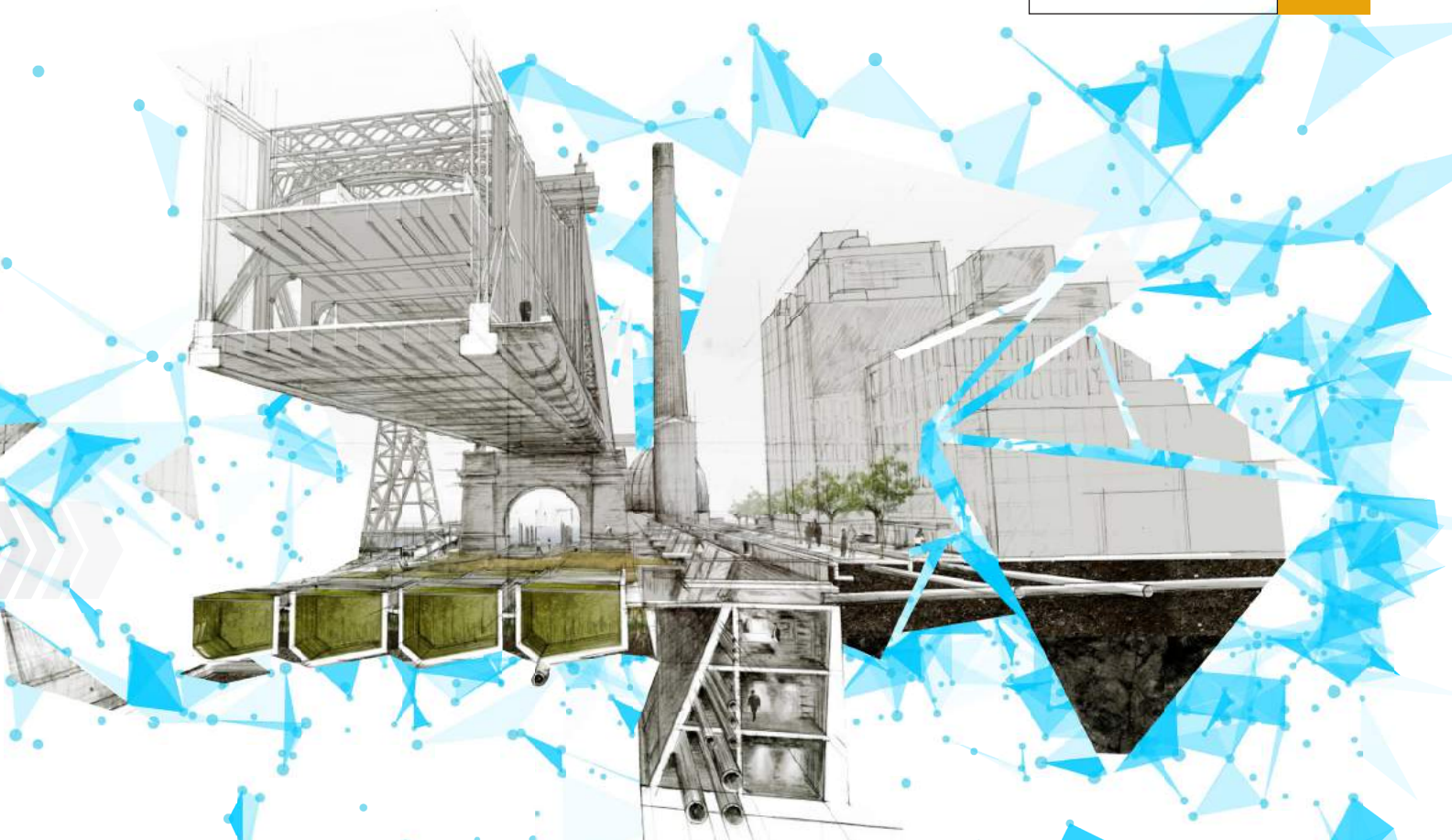
About 180 participants were exposed to the latest construction technology that were shared by experienced presenters, beginning with myBIM's Initiative, a demo and simulation of BIM, the implementation of BIM on public projects and the IBS ecosystem.. The sessions were made more meaningful with industry sharing, a lively Q&A session as well as workshops on topics such as IBS project management, town planning and the future of making things.

High interest from participants saw the half-day seminar being extended to a full day



A Demo & Simulasi on BIM by En. Muhammad Iyas Mahzan of UTM

Presentation on 'BIM Implementation on Public Project' by Dr Ahmad Tarmizi from Universiti Malaysia Pahang



Attentive participants soaking up the information shared with them



Q & A Sessions



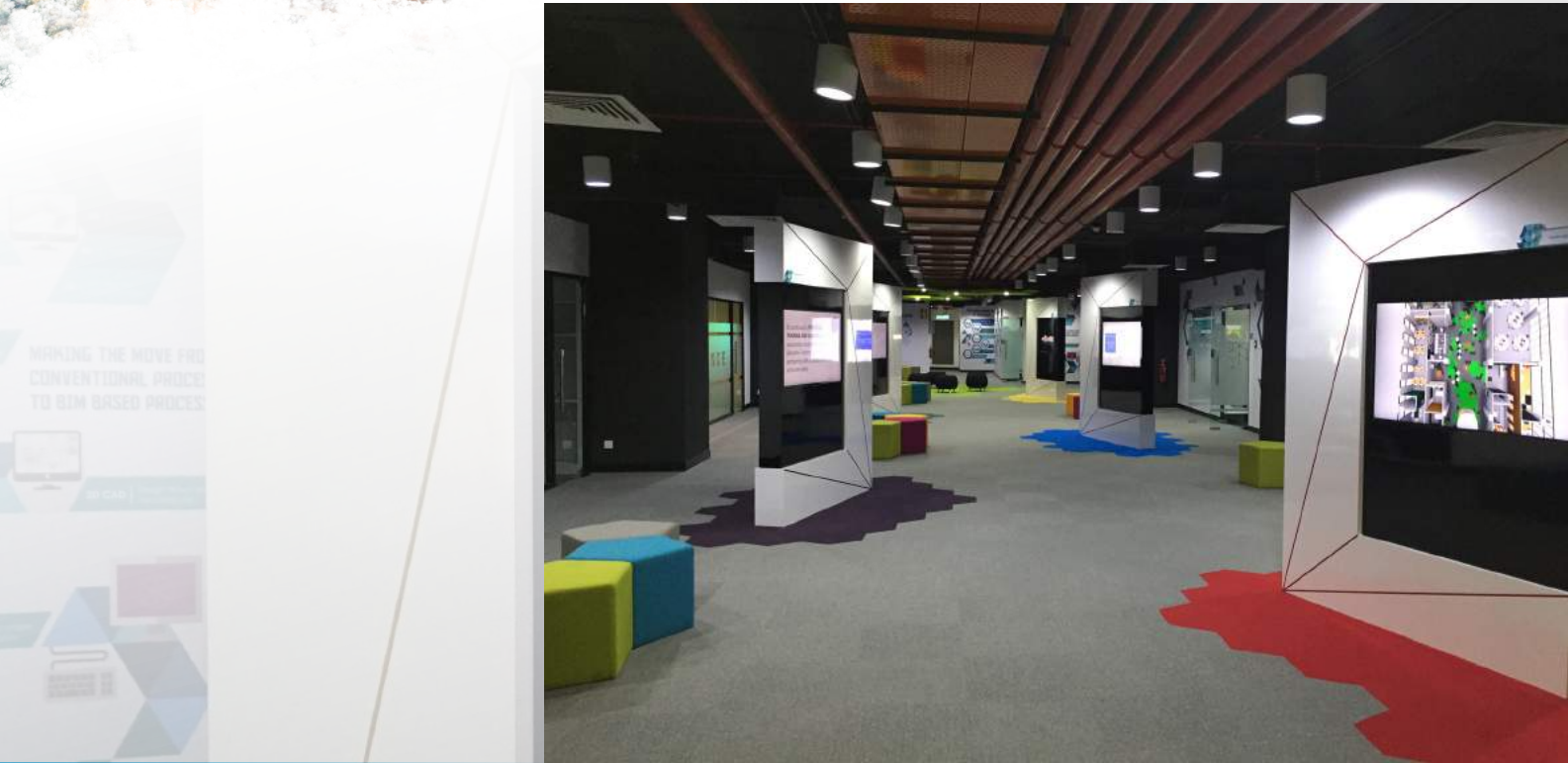
Presentation on
"Inisiatif myBIM" by En. Sharifuddin Umar
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En. Mohammad Razi Ahmad Suhaimi
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YB Dato' Sri Haji Fadillah Bin Haji Yusof
Minister of Works, Malaysia

Ecobuild SEA is organised by UBM Malaysia, hosted by Construction Industry Development Board (CIDB) Malaysia and held in conjunction with International Construction Week (ICW) 2018 with co-located events Greenbuild Asia, Ecolight Asean, Construction Showcase, Malaysia IBS International Exhibition (MIIE) and Construction Career Fair making it a true platform in ASEAN for the construction industry.

The year 2018 marks ICW's 18th edition bringing together construction industry players to showcase, learn, build partnerships and share innovative ideas. The event will be held from 26 - 30 March 2018 in Kuala Lumpur Convention Centre and CIDB IBS Centre, Kuala Lumpur, Malaysia.



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- Total number of exhibitors:
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- Participating countries:
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Australia, India,
New Zealand & Taiwan.



134 groups visits from
corporate, government
bodies, universities
& polytechnic.



66 forum, conferences,
seminars & technology
symposium & 5 competitions



- 49 seminar sessions
- 7 sponsor sessions
- 5 conferences
- 3 competitions



Visitor attendance:
• 14,068 from 45 countries
& region (+16.5% to 2017).



63% exhibitors rebooked
onsite for 2018 edition.

BIM HIGHLIGHTS

35

SHOW HIGHLIGHTS



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