The Hong Kong Institute of Building Information Modelling
香港建築信息模擬學會

HKIBIM
10th Anniversary Conference

From BIM to Built Asset Information Management

Date: 9 January 2020 (Thursday)

Venue: Grand Ballroom, 2/F, New World Millennium Hong Kong Hotel
72 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong

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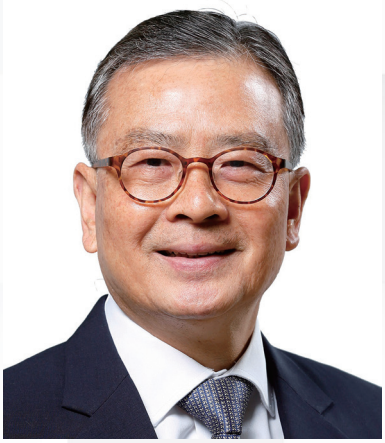
Message from Guest of Honour



Sr. CHAN Ka-kui, SBS, JP

Chairman
Construction Industry Council

On behalf of the Construction Industry Council (CIC), I congratulate the Hong Kong Institute of Building Information Modelling (HKIBIM), on the occasion of its 10th anniversary. We appreciate the effort and achievements made by the HKIBIM in driving the development of Building Information Modelling (BIM) in Hong Kong.

The construction industry in Hong Kong is due for a reform. Digital Construction is a core element of the future construction and BIM is an important part of the equation.

I look forward to working closely with the HKIBIM in the transformation, for a more sustainable construction industry in Hong Kong.

Message from Chairman

Mr LEUNG Chi Suen, Francis

Chairman

The Hong Kong Institute of Building Information Modelling

Chairman, KK Chan, Honorable Guests, Ladies and Gentlemen,

Welcome to our Annual Conference, 2019. We have the conference held in this early January of 2020 because of the disruption in the social environment in the past six months. It is not easy to reschedule the conference especially when it comes after the super-successful even of CIC Construction Innovation Expo in Dec 2019 and before X'mas. Most of our friends were gone for holiday and enjoy their warmest time with their family. Timing of this conference may not be the best to conclude what we have achieved so far. However, it seems a good timing at the start of 2020 to learn something new and so we can plan and prepare for the coming future.

Today, we celebrate HKIBIM's 10th Anniversary. As the Founding Chairman, the image of five "young" passionate BIM people (Sr YY Yip, Ir Ronan Collins, Ar David Fung, Felix Chan and I) met at the top floor of IFC Tower in an evening in the winter of 2008 for the establishment of HKIBIM is still staying around my mind. We started with 29 founding members. We started with BIM modelling to challenge each other how buildings are modelled in our computer in which we called "gun". During our gathering, we put out our "gun" to challenge each other by showing our BIM models. At that time, we started with individuals but after this decade, we become modelling experts. We started BIM in a small part of a building projects but now our models contain everything with fruitful content of information. After 10 years, we now have over 800 members. BIM is mandatory in government projects over HK$30 millions. We are no longer limited to BIM modelling. BIM, as an emerging technology 10 years ago, now becomes a disruptive technology. Our industry is pushed for changes to adopt BIM. It is now time to re-think why we need BIM and prepare for the next emerging technology.

Since the publication of ISO 19650, although the word "BIM" is part of the title, it is not much mentioned in the content. Instead, this famous figure 3 shows the big picture of Information Management which uses Project Information Management (PIM) and Asset Information Model (AIM) continuously develop to store, manage and use the information of an asset. BIM is only a form of Information Container. It is the basis to enable Information Management. It is the most essential part of Information Management but since we can handle BIM models we should move on to manage information. Information Management is a real new area that we should put our effort to develop. We all know we generate a lot of information about our asset during our project. We all know we have a lot of information to handle in asset management. We seldom continuously manage our information throughout the whole lifecycle of our asset. The reason behind is that we are all experts in our own specialized area. Some are architects. Some are engineers and of course, there are many other specialists. Unfortunately, the role of Information Management is missing. We don't have "Information Manager" in a project or an organization. Therefore, information is kept in many different places and around the information generator or owner. It is not efficiently accessed, and the quality of information cannot be guaranteed.

Information Management is now brought up as a focus again since the publication of ISO 19650 12 months ago. It explains why government of developed countries set their roadmap for BIM adoption. For sure they don't just treasure the nice models. They want a proper management of information for the "SMART" approach. It is a global trend aiming at a seamless information flow. That's why we, HKIBIM, together with another two information management associations, HKICBIM & HKGISA, established the Hong Kong Alliance of Built Asset & Environment Information Management Associations. It is the Hong Kong Chapter of buildingSMART International such that we can return to the global arena in the development of openBIM and information management. Through HKABAEIMA, our members will participate in developing all those big things with the world leaders. We have our voice in the world.

Ladies and gentlemen, we are now reaching the turning point of the development of our institute. It is so encouraging to have this conference with the title of "From BIM to Built Asset Information Management". We are grateful to have all the world-class speakers sharing their vision on the journey to Information Management. We thank them for their participation. Of course, in order to make the conference happen, we also thank all Supporting Organizations and Sponsors for their contribution and support. Hope you enjoy the conference. Thank you.

Conference Programme

Time	Content
9:30 – 10:00	Registration
10:00 –10:10	 Welcome Speech **Mr LEUNG Chi Suen, Francis** Chairman The Hong Kong Institute of Building Information Modelling
10:10 – 10:30	 Opening Keynote Speech **Sr. CHAN Ka-kui, SBS, JP** Chairman Construction Industry Council
10:30 – 10:40	Souvenir Presentation to Guest of Honour
10:40 – 11:05	 **The adoption of Building Information Modelling (BIM) in Hong Kong – A survey conducted by Construction Industry Council (CIC)** **Mr Alex HO** Senior Manager – Building Information Modelling Building Information Modelling Department, Industry Development, Construction Industry Council
11:05 – 11:35	Morning Refreshment Break
11:35 – 12:00	 **ISO 19650 – An International Approach to Support the Creation of Digital Twins for Better Asset Management** **Ir Dr Llewellyn TANG** Associate Professor in Building Information Modelling (BIM) Department of Real Estate and Construction, Faculty of Architecture, The University of Hong Kong
12:00 – 12:25	 **Creation, Integration and Management of BIM Information** **Dr Jack CHENG** Associate Professor and Director of BIM Lab, Associate Director of GREAT Smart Cities Institute The Hong Kong University of Science and Technology
12:25 – 12:35	Souvenir Presentation to Speakers and Sponsors
12:35 – 14:20	Lunch
14:20 – 14:45	 **BIM Interoperability & Project Implementation + Benefits** **Mr IKER Mugarra Flores** Principal/Director Spatial Holistic Assemblies Ltd.
14:45 – 15:10	 **BIM, Space and Asset Information Management** **Ms Catherine LAU** Senior Space and Design Manager Facilities Management Office, The Hong Kong University of Science and Technology
15:10 – 15:35	 **Connected workflow for structural detailing and fabrication** **Mr Ivan FU** Senior Technical Sales Specialist, AEC Autodesk
15:35 – 16:05	Afternoon Refreshment Break
16:05 – 16:30	 **Permissioned Blockchain, the indispensable enabler driving Digital Construction** **Ir Kelvin LIN** Vice President for Construction Industry Digital Transaction Limited
16:30 – 16:55	 **Digital Transformation in Hong Kong using openBIM® Approach for Built Asset Information Management** **Mr Kevin S.C. WONG** Vice Chairman The Hong Kong Institute of Building Information Modelling
16:55 – 17:00	Souvenir Presentation to Speakers
17:00	Conference Ends

Mr Alex HO

Senior Manager – Building Information Modelling
Building Information Modelling Department,
Industry Development, Construction Industry Council

BIOGRAPHY

Mr. Alex HO leads the BIM Department in promoting the awareness and facilitating the adoption of BIM in Hong Kong through engagement with stakeholders in the construction industry, development of key training programmes, BIM Standards, BIM Certification and Accreditation Scheme, establishment of CIC BIM Space and leading relevant research initiatives.

Mr. Ho is a Chartered Engineer and has more than 30 years of IT experience specialized in Architecture/Engineering/Construction (A/E/C) industry. Mr. Ho had provided consultancy and implemented numerous computer aided design systems for large companies and institutes in Hong Kong, China, Singapore and Australia.

Before joining CIC, Mr. Ho had taken up various positions in Hong Kong Housing Authority. Mr. Ho is in charge of the implementation and management of all IT systems for housing development and construction including large-scale award winning enterprise applications (HOMES) for building project management, contract administration, budget and payment, systems for contractor performance, e-submission, e-processing, e-approval and online purchase of building plan, mobile applications for site inspections and tree management, Geographic Information System (GIS), Computer Aided Design and Drafting (CADD), Drawing Management System, Bills of Quantities, etc.

Mr. Ho introduced and pioneered the implementation of BIM since 2006 as the new design and construction platform to optimize building design. This included BIM applications evaluation and piloting, change management implementation, BIM training for executives and professionals, research and development on BIM related technologies, development of first BIM standards, etc.

Mr. Ho is a Member of various professional institutions and a Founding Board Member of the Hong Kong Institute of Building Information Modelling (HKIBIM) (2008-2016). He is one of the winners of HKCIC BIM Excellence Awards 2014 – Construction Innovator by BIM.

THE ADOPTION OF BUILDING INFORMATION MODELLING (BIM) IN HONG KONG – A SURVEY CONDUCTED BY CONSTRUCTION INDUSTRY COUNCIL (CIC)

The Construction Industry Council (CIC) is dedicated to drive, promote and facilitate the adoption of Building Information Modelling (BIM) in the Hong Kong Architecture, Engineering, Construction and Operation (AECO) industry. The primary objective of this survey is to establish a fuller picture of the BIM adoption situation in the Hong Kong construction industry and a baseline for benchmarking BIM adoption, understanding the challenges and opportunities in BIM adoption across the value chain and supply chain of the Hong Kong construction industry, and informing future BIM strategies.

This survey reached out to AECO organisations from 7 key stakeholder groups (including government departments; statutory bodies; real estate developers and asset owners; consultants specialised in design, engineering and surveying; BIM consultants; main contractors; and subcontractors). Responses from over 700 organisations were received. In-depth interviews were held for about 20 organisations to gain further insights on their BIM adoption status and efforts.
The responded organisations by representative sampling are profiled into three categories by the maturity of BIM adoption: a) BIM Leaders, b) BIM Adopters, and c) BIM Laggers. All BIM Leaders and BIM Adopters are actively using BIM while BIM Laggers do not have active BIM projects or have not heard of BIM. Key behaviours and characteristics of BIM Leaders, BIM Adopters, and BIM Laggers are analysed and compared both in an overall context and for each individual stakeholder group.

In the survey, it is found that the Hong Kong industry could make reference to the experience and lessons learned by the local BIM Leaders. In the presentation, we will talk about the transition needs to be taken, and recommendations to address the hurdles and challenges faced by different stakeholders and to realise the benefits of BIM.

Speakers

Ir Dr Llewellyn TANG

Associate Professor in Building Information Modelling (BIM)
Department of Real Estate and Construction,
Faculty of Architecture, The University of Hong Kong

BIOGRAPHY

CIC Certified BIM Manager (CCBM), BSI Certified BIM (PAS 1192/ISO 19650) tutor, Corporate Member (MHKIE), Chartered Construction Manager, (MCIOB), Fellow of the Chartered Institution of Engineering Surveyors (FCInstCES), Fellow for the Higher Education Academy in the UK (FHEA), Member of the BIM Assessment Panel (BIMAP) of CIC, Founding Director of Digital City Infrastructure and Technology Innovation Laboratory (D-CiTi Lab), Former Head of Department of Architecture and Built Environment (2012-2017) at the University of Nottingham Ningbo China, Former Lecturer and Postdoctoral Researcher at the University of Reading and Loughborough University respectively, Former Deputy Chairman for the Hong Kong Institution of Engineers (UK Chapter), Former member of Construction Excellence BIM Industry Task Group (PAS 1192) for the UK Government.

During the time at Nottingham, Llewellyn has its first RIBA and CIBSE unconditional validation and accreditation completed successfully and established the first ICES-accredited GIS-BIM taught master across China. Llewellyn led and involved in a sum of multi-million funding from EPSRC, NSFC, World Bank, Chinese Government, large-scale BIM and information management R&D industry projects including hospital, rail transit, and international airport. Overall, he produced 7 patents, 40+ high impact journal papers and 70+ high-quality conference paper. He is also reviewer for EPSRC, NSFC and 30+ high impact SCI journals in the field.

In 2018, Llewellyn successfully introduced UK BIM level 2 with British Standards Institution (BSI) for Wanda Group achieving BIM Kitemark double (PAS1192-2 and PAS1192-3) and helping their BIM system and its workflow to tap the most value of this international standard for their digitisation journey. In the same year, he led a team of 12 BIM scientists for the design and application of a strategic framework for the national new smart city (Xiongan New Area) and future smart hospital in China based on A.I., GIS-BIM- IoT and Blockchain. The research outcome was delivered in TEDx in Shanghai and Smart Expo Chongqing 2018. In 2019, together with BSI, he developed and acted as the Programme Director for the Global BIM Manager Professional Training Course (currently with HKIS as co-organiser). This is the BIM Manager course being accredited by CIC with the focus of bringing in ISO 19650, PAS 1192 suite and CIC standards making sure it meets the local requirements and needs for cultivating next-generation BIM Manager.

ISO 19650 – AN INTERNATIONAL APPROACH TO SUPPORT THE CREATION OF DIGITAL TWINS FOR BETTER ASSET MANAGEMENT

In a time when the global Architecture, Engineering, Construction and Owner-operated (AECO) industry is facing tremendous technological and cultural changes regarding digitalisation, delivering a project on time and on budget versus building a better asset is equally essential through-life. The development of the UK BIM Level 2 (PAS1192) has been a critical milestone on the journey to build a digital twin for the industry overall. This UK national standard (PAS 1192) is an approach for information management through-life for a built asset. PAS1192, since it was mandated in the UK in 2016, has now been in use for some years and has matured into ISO 19650. This is an international BIM language, released in Q1 2019, that contains all the same concepts, principles and high-level information requirements of the UK BIM Level 2.

This paper demonstrated the development strategy and process of the adoption of ISO 19650 to support the creation of digital twins of a local public project. Maintaining and optimising the 'asdesigned' performance of an asset is a challenging task. The key challenge is delivering the right asset performance information at the right time to the right people. Through this case study, it illustrates that the use of an international standardised approach is central to support the creation of digital twins for better asset management with a full digital asset portfolio of both how their asset is performing and how can they maintain and optimise it through-life within the digital twins with the support of ISO 19650.

Dr Jack CHENG

Associate Professor and Director of BIM Lab,
Associate Director of GREAT Smart Cities Institute
The Hong Kong University of Science and Technology

BIOGRAPHY

Dr. Jack Cheng is an Associate Professor of Civil and Environmental Engineering, Director of BIM Lab, Director of the RFID Center, and Associate Director of the GREAT Smart Cities Institute at the Hong Kong University of Science and Technology (HKUST). He obtained his PhD degree from Stanford University, in which he started to work on virtual design and construction (VDC) and Construction IT. His research interests include BIM, Internet of Things (IoT), artificial intelligence, laser scanning, construction informatics, construction and facility management, smart and low carbon buildings, and sustainable construction. He is currently the Chair of the Hong Kong Construction Industry Council (CIC) BIM Standards (Phase 2) Task Force, President of American Society of Civil Engineers (ASCE) Greater China Section, Chairman of Autodesk Industry Advisory Board (AIAB), Honorary Treasurer of Hong Kong Institute of Building Information Modeling (HKIBIM), and a Director of Hong Kong Green Building Council. He is a Professional Member of HKIBIM, CIC Certified BIM Manager (CCBM), Certified ISO 19650 Information Manager, and Certified Carbon Auditor Professional (CAP). He has received the Construction Industry Outstanding Young Person Award in 2019 from the CIC, and a few research and paper awards in international conferences. He is an author of over 200 publications in international journals and conferences.

CREATION, INTEGRATION AND MANAGEMENT OF BIM INFORMATION

Building information modeling (BIM) technology is increasingly used in various architecture, engineering, construction and operations applications. BIM is more than solely 3D visualization. As BIM maturity increases, the focus of BIM does not remain on the digital models only, but also the digital information contained and associated workflows. The rise in the number of BIM projects nowadays leads to both opportunities and challenges of the availability, representation, application and management of information in BIM.

In this presentation, the generation and representation of BIM information will be discussed firstly. In specific, model requirement definition and advanced approaches based on machine learning and AI to automatically generate building information models from point cloud data will be presented. Model simplification approaches will also be discussed. Secondly, examples and lesson learnt of integrating BIM information with other technologies such as GIS and Internet of Things will be presented. Specific examples of BIM-IoT integration for facility management will be shared. Thirdly, this presentation will discuss the storage, sharing and management of building information models and associated information in a multi-user, collaborative environment. Potential opportunities and challenges of relevant technologies and infrastructures such as blockchain and common data environment will be discussed. In the presentation, the digital twin project of HKUST campus will also be presented to illustrate some of these ideas.

Speakers

Mr Iker MUGARRA FLORES

Principal/Director
Spatial Holistic Assemblies Ltd.

BIOGRAPHY

Iker Mugarra Flores studied architecture at the AA in London and has collaborated with a variety of architects and studios, focusing in holistic and associative approaches in large and small scale projects that integrate advanced geometries and parametric logics, space optimization and architectural design, prototyping, detailing, fabrication and environmental strategies.

Iker was part of CLOUD9_ Enric Ruiz Geli studio as a project architect and also collaborated and taught at the IAAC. In recent years, Iker worked at Newtecnic as an associate leading the Façade Package of The Grand Theatre of Rabat by Zaha Hadid among many other international high profile projects. During this period, he also ran, in parallel, the computational and media courses at The Bartlett/UCL, B-Pro: MArch Urban Design-Morphogenesis Lab Courses (London) as tutor and computational consultant (2013-2015).

Recently, Iker was Architect/Associate at UNStudio Asia. He worked for over two year on the West Kowloon Cultural District – Lyric Theatre Complex from Design Stage (RIBA-Stage3) until early Construction Stage (RIBA-Stage5). He was responsible of the theatre´s technical Package, Architecture, Advance Geometries, Digital Workflows, BIM and site team & Site office resources management

BIM INTEROPERABILITY & PROJECT IMPLEMENTATION + BENEFITS

Us as a practice we consider that BIM is not a specific Software. BIM is a process, a way of thinking, documenting manipulating information and data. It is a methodology of gathering and maintaining information about a building which allow for quick decision-making during design process, construction and throughout the life cycle of the building. Is a methodology for creating, collecting, documenting and manipulating in an integrated manner information, with the goal of delivering a low risk integrated project.

In practice BIM implementation can become complex or difficult due to its multidisciplinary nature in projects, which involves coordination and many different software platforms. Generally speaking, the five main principal foundations that define the basic framework of a BIM projects,

[1 Planning | 2 Design authoring | 3 validation | 4 Production – Fab/Construction | 5 In Use Operation]

are commonly implemented in a linear way, but in practice it is an iteratively and non-linear process, which require different software platforms by different parties, models with different purposes and in many cases with scopes and stages out of sync and overlapping.
Why are workflows, interoperability and open BIM are essential for our building industry?

Often, we have to build many different models which require different ways of modelling for different representations and purposes, therefore, it is important to designing processes, workflows and logics that creates intelligent models and also allows to take them from one application (X) into application (Y) as an intelligent model without re-tracing or re-modelling, reducing time and efforts.

This topic framework will be based on the professional experience of Iker Mugarra Flores (SHA – Director) and it will be illustrated and expanded through the discussing of a high profile project case and how new workflows and computational approaches where used as well as implemented from concept to construction.

Project:
– The Grand Theatre of Rabat (Morocco) – Zaha Hadid Architects.

Ms Catherine LAU

Senior Space and Design Manager
Facilities Management Office, The Hong Kong University of Science and Technology

BIOGRAPHY

Trained as an architect and practicing as an authorized person, Catherine is passionate in space & design, BIM, geospatial analysis, etc. In her work, she often explores and queries the intelligence within the structure of spatial data via design, operation and analysis. Within more than ten years after she was qualified as an AP, she combined design, technology and management in thinking to help the facilities benefit from digital transformation. Catherine has extensive project management experience across various stages of building and types such as hotel, heritage conservation, shopping arcade, residential and commercial developments. She is interested in pursuing her career in BIM for space and solving building challenges.

BIM, SPACE AND ASSET INFORMATION MANAGEMENT

The growth of hyper-dense cities and consequent pressure on buildings development have considerably industrialized the building process. The carbon management, high development and labor costs, etc. have contributed to drive full utilization of facilities.

Facilities management consist of space and build asset management. Space utilization analysis and carbon management require validation of building and occupancy performance which involves intelligent Building Information Modelling (BIM). In addition, designing low carbon build asset and effective space are not intuitive. It involves building simulations and data collection by using smart devices, smart meters and Internet of Things (IoT) with a collaborative and automated platform.

However, current building development process for capital works appears quite fragmented. It is necessary to develop a collaborative platform, to identify the essential parameters and standards for the integration of the new technologies, such as Blockchain architectures.

Another deficiency of the current development process is that some implications become apparent only after occupation with users feedback. The drawback grows exponentially in prefabrication and modularization with its inability to make changes onsite, transportation constraints and limited component options.

In our work, the first step aims to digitize the essential space and assets information. A collaborative platform collecting the data of space and build assets are being developing for:

1) Existing build assets digitized from blue-print building drawings; and
2) New build assets generated from essential BIM with effective graphical presentation.

The second step is to identify the workflow of collecting the identified data by the smart devices, IoT and the collaborative platform; and to identify essential parameters for the BIM modelling to develop the future guidelines.

With digitalization of the existing facilities and BIM for new facilities, the current development process is helping to build a digital platform of the facilities. However, BIM cannot be a self-sustaining technology for the industry. The relationship between each components of the platform and the automation process are discussed. Finally, different use cases are explored, including co-working, calibration for the performance analysis, resources management, retrofits, etc.

In addition, many of the most important decisions are made early on in the development process of space and build assets. The more update and accurate data analysis, the better design can be achieved later on in the project. Therefore, the use of BIM, IoT and automated platform can be very beneficial. They offer disintermediation and transparent data transmission, but most importantly, they offer collaborative solutions for empowering users to well understanding their space and assets.

Speakers

Mr Ivan FU

Senior Technical Sales Specialist, AEC
Autodesk

BIOGRAPHY

Ivan Fu graduated from Architecture and Urban Planning Institute. Engaged in BIM technology research and services for more than 10 years. Previously worked at the Architectural Design Institute, during which he participated in the design of residential, commercial, and special-purpose buildings, 2D drawings, 3D model construction, building permit review, and supervision. He has participated in the implementation of many BIM projects in mainland China, Taiwan, Hong Kong and Malaysia and the judges of various BIM competitions, including plant and office building projects, commercial building projects, sewage plant projects, light rail (LRT) projects, large-scale exhibition projects, Malaysia The work of the MRBC project includes project planning and implementation, construction of an engineering information platform, construction of a BIM model, and deepened application of BIM. He has also participated in the selection and jury work of domestic innovation cups, Guangdong BIM competition, and installation association BIM competition. In addition, the relevant hours for the teaching and introduction of BIM software tools have exceeded 2000 hours; and there are many design institutes, engineering consulting companies and owners, real estate developers, etc. experience in Autodesk BIM Solution introduction and BIM project consulting. He is the founder of the Taiwan Building Information Modeling Association and served as the fourth secretary general. Expertise in the field of BIM is BIM concept advocacy, BIM project planning and execution, BIM technology deepening application explanation, BIM tool introduction teaching, etc. Now he is a senior technical manager in the engineering and construction industry of Autodesk China Branch and Guangzhou Office.

CONNECTED WORKFLOW FOR STRUCTURAL DETAILING AND FABRICATION

Thanks to BIM, we're already seeing some incredible changes in the structural industry and a number of trends that are tightly connected to how teams are using technology. Some of these trends include owners realizing the benefits of BIM and the associated project savings; and leading to more BIM mandates and the advancement of new standards supporting BIM maturity (like ISO 19650), National BIM Standard and LOD requirements across the world.

As optimized designs include greater detail, there is an explosion of data produced by BIM projects with higher fidelity at a greater frequency than that of 2d information – especially with increased computational power. Technology is removing barriers to collaborate across distances. Teams are assembled across different offices and geos representing larger talent pools.

These trends are causing engineers to extend their services downstream and fabricators and installers to extend their services upstream. Teams are relying more and more on data to communicate.

This topic is about how BIM can be further easily extended to structural steel detailing and fabrication. The covered solutions help users accelerate their detailing workflows with 3D modelling tools that improve accuracy and reduce the time from design to fabrication.

Ir Kelvin LIN

Vice President for Construction Industry
Digital Transaction Limited

BIOGRAPHY

Ir. Kelvin Lin is a seasoned construction professional with over 24 years of experience in construction industry. His expertise comprehend the whole project cycle essentially from master planning, design management, construction management, up to facility management and enhancement, covering a diverse variety of project types no matter in public or private sectors.

On top of the project management excellence, Ir. Lin has also mastered a strong perspective of business and finance through his pursuit of executive business study as well as his numerous appointments as the head of division, project in charge and employer's representative for various projects of dissimilar nature and complicated assignments.

As a chartered engineer, Ir. Lin has the qualification of Corporate Member of the Hong Kong Institution of Engineers, a statutory professional organization in Hong Kong. Besides, Ir. Lin has also acquired other professional bodies memberships.

On academic side, Ir. Lin has completed the BSc(Hons) in Building Technology and Management of the Hong Kong Polytechnic University and graduated with 1st class honours. After that, he has further advanced himself by completing the MSc in Construction Project Management from the University of Hong Kong. For further development of executive management, Ir. Lin has been keen to acquire a dual master degree in business namely the EMBA of the Chinese University of Hong Kong and the OneMBA co-organised by 5 global renowned top rank universities over the world.

In short, Ir. Lin is a sophisticated next generation engineering talent with executive business mindset and proven capability. Lately Ir. Lin has joined an IT company innovating in new blockchain core technology and applications.

PERMISSIONED BLOCKCHAIN, THE INDISPENSABLE ENABLER DRIVING DIGITAL CONSTRUCTION

A discussion of blockchain technology, their major classification and associated characteristics. The risk and danger in digital construction would also be talked about. Most importantly, the solution and key IT enabler for digital construction – ParallelChainTM and correlated applications/tools, would be introduced and explained.

Speakers

Mr Kevin S.C. WONG

Vice Chairman
The Hong Kong Institute of Building Information Modelling

BIOGRAPHY

Mr. Kevin S.C. Wong had over 20 years' engineering design and BIM management experience in large scaled projects in Hong Kong and UK. Being a Civil and Structural BIM enthusiast, Kevin possessed both engineering design background and the application of BIM Software using integrated design approach. He was responsible for various large scaled construction projects while working as a Structural Engineer in Atkins China Ltd since year 1998. During his work as BIM consultant, he had delivered many effective Revit Structure and Design Software training courses for the Design Consultants, Contractors, Institutions, and Government bodies including Hong Kong Housing Authority (HKHA), Architecture Services Department of HKSAR (ArchSD), and Construction Industry Council (CIC). Being the Director of HKABAEIMA and the Vice-chairman of HKIBIM, he continues to apply his professional knowledge on BIM for practitioners in construction field. He is currently the part-time lecturer in HKU SPACE, VTC, and CUSCS and is the founding member and Director of Hong Kong Alliance of Built Asset & Environment Information Management Associations (HKABAEIMA) of buildingSMART (Hong Kong Chapter) since October 2019.

DIGITAL TRANSFORMATION IN HONG KONG USING OPENBIM® APPROACH FOR BUILT ASSET INFORMATION MANAGEMENT

With the continuous policy push, awareness education, and fund investment on BIM by the Hong Kong Government in recent years, the adoption of BIM on construction industry is getting more popular in most of construction projects compared to previous years. Looking into some of the public works contracts and agreements where significant sections have specified the use of BIM technology as mandatory requirements, the BIM process is now becoming the "DNA" in all stakeholders such as Architects, engineers, contractors, suppliers, clients and operators in our construction industry.

As we are entering new pages of BIM implementation and collaboration in coming year 2020, more practitioners shall join together and share the building information amongst each other. The use of openBIM® approach on construction project is now getting more mature in adoption around the world. Open BIM encourages real interoperability by using of open technology. The idea of interoperability is to focus on the process and how well the various BIM tools operate together instead of the features of one single tool ("openBIM," n.d.). Now more than 35 software vendors with total more than 50 applications has adopted openBIM® through IFC (Industry Foundation Classes) and BIM Collaboration Format (BCF). To facilitate this approach, the buildingSMART International is leading the digital transformation by enabling better collaboration and digital workflows through the solutions and standards it delivers. Digital workflows help project stakeholders collaborate and communicate efficiency throughout all phases of the project and asset lifecycle. The process involves many disciplines, software applications, and organizations who must collaborate and exchange information to achieve success. The development, creation and adoption of open digital standards for productive workflows is therefore achieved. In technical aspects, IFC format, like other industry standards, enables data exchange between different BIM software applications.

In Hong Kong, construction projects are now required more BIM software working together to deliver better results. The Common Data Environment (CDE) platforms such as Autodesk BIM 360, Trimble Connect, BIM Track, and BIMcollab allow users to import or export IFC models and BCF formats for better collaborations and to share information across disciplines. For example, if an architect uses ArchiCAD by GRAPHISOFT® as the main design software, they can export the model to IFC format and import into these CDEs and merge with the Revit MEP models by Autodesk® (.rvt). The Structural Engineers adopted Tekla Structures by Trimble® for their structural BIM models where it can also export the structural model to IFC (IFC files according to ISO 16739:2013) which makes BIM collaboration simple and effective by merging the model together in one CDE. All stakeholders are enabled with common open standards during the 3D coordination plus clash detectives where the ownership of models still being kept for each party. The changes on models could be easily updated by model's owners and then export into IFC and authorized by the CDEs for further collaboration. In conclusion, openBIM® approach enable open and transparent data exchanges amongst different stakeholders and encourage better BIM adoption for the Hong Kong construction market in the long term.

- BIM modeling (arch. & struc. & MEP)
- Facade detailing and 3D modeling
- Structure steel detailing and 3D modeling
- Virtual construction and coordination services
- BD/Shop drawing & fabrication drawing generation

Shenzhen
Kunxiang Drawing
Services Co., Ltd

Wing Chu Wan Fung
Managing Director
M: 95096836，86-13008840720

809-810, Huangcheng Plaza, 7th Futian South Road, Futian District, Shenzhen
t: 86-755-83125409 f: 86-755-82574434 e:info@kx-drawing.com www.kx-drawing.com

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HKIPM

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About HKIBIM

The Hong Kong Institute of Building Information Modelling 香港建築信息模擬學會

We are all fans of BIM. We share our belief that this new technology can enrich our building design and construction in many different ways. We are fully devoted to the development of BIM and the implementation of BIM in our projects. That is why we come together to form the Institute and make it a recognized platform to expedite the process.

HKIBIM was established in Jan 2009 and now with more than 950 members.

The objects of the Institute are:

1. To uphold and advance the standard of competence for the profession and to promote the interests and recognition of its members within the industry and community;

2. The Institute works on the behalf of its members:
   - To promote and advance the general education, understanding, appreciation and interest of and in building information modelling management;
   - To foster general awareness, understanding and concerted efforts in the community towards the advancement of the Objects and the issues thereof;
   - To establish and advance standards of building information management practice in the industry.
   - To establish links with relevant institutes of tertiary education, Government Bureaus/Departments, Statutory bodies and other organizations;
   - To research, facilitate and promote the means of better management of building information for improving communication, co-ordination, management, productivity, delivery time, cost, and quality throughout the whole building life cycle;
   - To provide guidance on careers in building information management profession.

HKIBIM Directory

The HKIBIM Directory offers a centralized database detailing companies that include BIM in the creation and management of construction projects' information. All companies from the different stages of a project's life-cycle are listed, including architect firms, contractors, consultancies, software providers and training institutions. In addition to tracking BIM usage, the HKIBIM Directory also collects data more accurately to analyse how widely BIM is used in Hong Kong, ultimately provide better services for our community.

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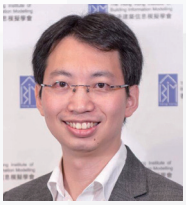

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General Post Office (GPO) Box No. 2259, Hong Kong
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