

**Construction Industry Council**

**Committee on Building Information Modelling**

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Meeting No. 002/19 of the Committee on Building Information Modelling (Com-BIM) was held on Tuesday, 11 June 2019 at 2:30pm at the Board Room, 29/F, Tower 2, Enterprise Square Five (MegaBox), 38 Wang Chiu Road, Kowloon Bay, Kowloon, Hong Kong

Present	:	Ada FUNG	(AF)	Chairperson
	:	Ivan FU Chin-shing	(FI)	
		Stephen LAI Yuk-fai	(SLI)	
		Kenneth MO Kon-fei	(KM)	
		Thomas CHAN Tak-yeung	(CTY)	
		Kelvin WONG	(KWKw)	Airport Authority Hong Kong (AAHK)
		Bruce LAW	(BLw)	The Association of Architectural Practices (AAP)
		Clement CHUNG	(CtCg)	The Association of Consulting Engineers of Hong Kong (ACEHK)
		Karen CHENG	(KCKI)	Architectural Services Department (ArchSD)
		Eric LEE	(ELe)	Buildings Department (BD)
		Terence LAM Tat-ming	(TmL)	Civil Engineering and Development Department (CEDD)
		Bernard WONG	(LPWg)	Drainage Services Department (DSD)
		Paul MUI	(PaM)	Hospital Authority (HA)
		Billy WONG	(BWCb)	The Hong Kong Construction Association (HKCA)
		Daniel CHONG Kwok-ming	(DCg)	The Hong Kong Federation of Electrical and Mechanical Contractors Limited (HKFEMC)
		Benny CHOW Ka-ming	(BCw)	Hong Kong Green Building Council (HKGBC)
		Andrew CHAN Ching-leung	(ACCI)	Hong Kong General Building Contractors Association (HKGBCA)
		Edmund CHAN Sai-chun	(ECSc)	Hong Kong Housing Authority (HKHA)
		Franki YEUNG	(FY)	Hong Kong Housing Society (HKHS)

SO Ching	(CSO)	The Hong Kong Institute of Architects (HKIA)
Thomson LAI	(TLai)	Hong Kong Institute of Building Information Modelling (HKIBIM)
Calvin FU Po-wa	(CFPw)	The Hong Kong Institution of Engineers (HKIE)
Sunny CHOI Shing-lam	(SLC)	The Hong Kong Institute of Surveyors (HKIS)
NG Chun-keung	(NCK)	Hong Kong Institute of Utilities Specialist (HKIUS)
Steve ROWLINSON	(SR)	The University of Hong Kong (HKU)
Jack CHENG	(JCCp)	The Hong Kong University of Science and Technology (HKUST)
KC HO	(KcH)	Highways Department (HyD)
Ben CHAN Siu-bun	(BCSb)	Lands Department (LandsD)
Silas LIU Kam-ming	(SLKm)	Planning Department (PlanD)
Anderson LEUNG	(AnLg)	Urban Renewal Authority (URA)
Eric LIU	(ELSl)	Vocational Training Council (VTC)
Andrew SIMPSON	(ASn)	West Kowloon Cultural District Authority (WKCDA)
Ben LO Yu-bun	(YbL)	Water Supplies Department (WSD)
In Attendance : Keith YIM	(KYm)	Association of Consultant Quantity Surveyors (ACQS)
Simon J GALLAGHER	(SJG)	Chartered Institute of Architectural Technologists (Hong Kong Centre) (CIAT)
Terence KONG	(TKHw)	Independent Checking Unit, Housing Department (ICU)
Nelson YAM Hon Fun	(NYHf)	Lands Department (LandsD)
Marcin KLOCEK	(mK)	MTR Corporation Limited (MTRC)
Albert CHENG	(CTN)	Executive Director
Richard PANG	(RPg)	Director - Industry Development
MOK Peng-lam	(PMk)	Principal – Centre for Professional Development, HKIC

	Alex HO	(AHKK)	Senior Manager – Building Information Modelling
	Ron NG	(RNCw)	Manager - Building Information Modelling
	George WONG	(GWCK)	Manager - Building Information Modelling
	Serina LAU	(SLau)	Manager - Building Information Modelling
Apologies	CHUNG Kwok-fai	(CKFi)	
	YU Sai-yen	(SYYu)	
	Sammy NG	(SNTy)	bSHK
	FUNG Siu-man	(SmF)	The Chinese University of Hong Kong (CUHK)
	WONG Sek-cheung	(WSCg)	Electrical and Mechanical Services Department (EMSD)
	Miranda LUI	(MLCy)	Chartered Institution of Civil Engineering Surveyors (Hong Kong Region) (ICES)
	LI Heng	(HL)	The Hong Kong Polytechnic University (PolyU)

## MINUTES

### Action

#### 2.1 Confirmation of the Minutes of Meeting No. 001/19 of the Com-BIM

Members took note of the Paper CIC/BIM/M/001/19 with some minor comments from the DEVB on 10 June 2019 and confirmed the Minutes of meeting No. 001/19 of the Com-BIM on Tuesday, 12 March 2019.

#### 2.2 Matters Arising from the Previous Meeting

AHKK reported matters arising from the previous meeting as follows:

(a) Agenda item 1.1 - Applications for the CIC Research and Technology Development Fund - BIM-based Rebar Design Optimisation and Prefabrication Automation

- The research was awarded to HKUST. The agreement was under preparation and would be ready for signing in June 2019.
- A working group to monitor the research has been formed with the following members:
  - (1) Chairperson: Mr. Alex HO (Senior Manager-BIM, CIC)
  - (2) Mr. George WONG (Manager-BIM, CIC)
  - (3) Mr. Sunny CHOI (Senior Quantity Surveyor, HD) (to be confirmed)
  - (4) Mr. John CHUI (Structural Engineer, HD)
  - (5) Mr. Kevin LAM (Senior Structural Engineer, BD)
  - (6) Mr. Peter LAM (Senior Structural Engineer, ArchSD)
  - (7) Mr. LI Shu-lam (Structural Engineer, HD)
  - (8) Mr. Kennis WAN (Assistant Secretary (WP3), DEVB)

[**Post Meeting Notes:** Mr. Sunny CHOI was nominated by Housing Department to be a member of the working group on 18 June 2019 and Mr. Billy WONG (HKCA) was also a member of the working group.]

(b) Agenda item 1.7 - Progress of the Task Force on BIM Training

- CIC signed MoUs with three higher education institutes who offer sub degree courses on 23 April 2019:
  - (1) Faculty of Science and Technology, Technological and Higher Education Institute of Hong Kong (THEi)
  - (2) Engineering Discipline, Institute of Vocational Education (IVE), Vocational Training Council (VTC)
  - (3) Hong Kong Design Institute (HKDI), VTC

- (c) Agenda item 1.8 - Progress of the BIM-related Projects
- Works Departments (CEDD, ArchSD, WSD, HyD, EMSD, DSD) CEDD, ArchSD, WSD, HyD, EMSD, DSD would share the progress of the BIM-related projects in the next Com-BIM Meeting.

### **2.3 Progress Report on BIM by CIC**

AHKK gave a presentation on the progress report on BIM by CIC as follows:

- a) Development of Capacity and Capability Building Initiatives
- A total of 10 MoUs has been signed with higher education institutions.
  - BIM models provided by CEDD, DSD and WSD would be shared with all MoU's institutions for preparing the teaching materials. CIC Secretariat
- b) Promotion and Publicity
- CIC BIM Space Opening Ceremony was held on 23 April 2019. It included signing MoUs with HKDI, IVE and THEi and sharing session with BIM Managers.
  - Upcoming regular events of CIC BIM Space included BIM Awareness Seminar and Workshop 2.0, BIM Solution Day, BIM Advanced Workshop and BIM Night. Members were encouraged to participate. All to note
  - CIC could co-organise BIM related activities, events or workshops with organisations/departments in the Multi-Purpose Area and/or BIM Lab at the CIC BIM Space. All to note
  - CIC would arrange guided tour at CIC BIM Space. Organisations/departments were encouraged to enroll tours with CIC. All to note
  - "BIM Talks x Safety" was held at the Hong Kong Jockey Club Amphitheatre on 22 May 2019 with 417 attendees.
  - CIC BIM Competition Award Presentation Ceremony for open category and tertiary student category would be held on 16 June 2019. The champion of the tertiary student category would be sponsored to join the International Built Environment Week (IBEW) in Singapore in September 2019.
  - Construction Innovation Expo 2019 would be held from 17 to 20 December 2019 while the International Conference on BIM would be held on 17 December 2019. AF encouraged Members to consider participating as exhibitors and attend the Conference. All to note
- c) Standards and Guidelines
- Three BIM Standards, namely "Statutory Plan Submission", "Mechanical, Electrical and Plumbing (MEP)", and "Underground Utilities (UU)" were under preparation and details would be reported

in agenda item 2.4.

d) BIM Certification and Accreditation Scheme (BIMCAS)

- The grandfathering policy and grace period of applying CIC-Certified BIM Manager (CCBM) would be valid until 31 December 2019, while limited time offer of reduced application and renewal fees would be valid until 31 December 2020. All to note
- 17 briefing sessions were held since launching of BIMCAS in January 2019 and attracted more than 720 attendees. CIC could organise separate briefing sessions for associations if needed. All to note
- 40 practitioners had been certified as CCBMs and more than 50 new applications were being processed.

e) Research and Development (R&D)

- CIC has appointed a consultant (bimSCORE Ltd) to conduct a comprehensive BIM adoption survey in Hong Kong as at 31 March 2019 and forecast for the coming two to three years. Details would be reported in agenda item 2.6.
- URA would team up with consultant to apply CIC R&D Fund for the development of automated GFA calculation tool. URA
- DEVB, LandsD, PlanD and BD were reviewing the draft scope of the consultancy study on the process and collection of BIM data for the development of digital HK for onward action by CIC Secretariat. CIC Secretariat

f) Other Matters

- The pilot BIM-Asset Management (BIM-AM) project at Zero Carbon Building was almost completed in mid-2019.
- AF had led a team of 13 delegates to attend the buildingSMART International (bSI) Standards Summit in Dusseldorf, Germany in March 2019. AF encouraged Members to join the sharing session of this Summit to be held on 14 June 2019. All to note
- At the Task Force on BIM Standards, there were discussions about formation of local chapter of bSI. Though CIC may seem to be an appropriate organisation as CIC is responsible for development of BIM Standards in Hong Kong, it was concluded that CIC would not take up this role as CIC should focus on the BIM development for the local industry and CIC could not be a member of bSI which is a Company Limited by Guarantee. AF supplemented that HKIBIM, Hong Kong Institute of Civil and Building Information Management (HKICBIM) and Hong Kong Geographic Information System Association (HKGISA) was forming an alliance and would apply to become the Hong Kong Chapter of bSI. The announcement would tentatively be made at the International Standards Summit in Beijing in October 2019. The Hong Kong Chapter of bSI would work closely with the CIC. All to note
- IBEW would be held from 3 to 6 September 2019 in Singapore. The

CIC Secretariat would send the details to Members for consideration.

Members took note of the progress report on BIM by CIC.

**[Post Meeting Notes:** CIC BIM Competition Award Presentation Ceremony was successfully held on 16 June 2019. Sharing session of bSI Standards Summit was successfully held on 14 June 2019 and attracted around 100 attendees. CIC Secretariat sent the details of IBEW to Members by email on 12 June 2019.]

## **2.4 Progress of the Task Force on BIM Standards (TF-BS) (Phase 2)**

- a) JCCp briefed Members on the paper CIC/BIM/P/005/19 and gave a presentation on the progress of the TF-BS (Phase 2) as follows:
- One meeting was held since the last Com-BIM Meeting.
  - To align the new terminologies and contents such as Level of Development (LOD) defined in the two new CIC BIM Standards for MEP and UU, the “CIC BIM Standards (Phase One)” would be updated accordingly and renamed to “CIC BIM Standards – General”.
  - The final draft of CIC BIM Standards for MEP and UU would be ready by August 2019 and sent to Com-BIM Members for approval by circulation.

Ir Francis LEUNG, representative from the Aurecon, gave a presentation on the “Consultancy Services for BIM Standards of Statutory Plan Submission” for Members’ information.

- b) JCCp reported that the following standards was planned to be developed with higher priority:
- BIM Agreement;
  - BIM Specification;
  - CIC BIM Standards (Phase One) enhancement;
  - BIM Standards on generation of MEP 2D drawings;
  - Simplified BIM (jointly with LandsD); and
  - BIM for Quantity Take Off (QTO) (Jointly with HKIS)
- c) JCCp reported that some of the BIM Objects from DEVB had been received and would be disseminated through CIC BIM Portal after checking.
- d) AF suggested that the BIM agreement should be work with the SLI and Committee on Construction Procurement (Com-CPT). SLI, JCCp Chairperson of Com-CPT agreed. To encourage BIM adoption in construction industry, AF suggested to develop some templates of

agreement, such as acquisition of BIM service to be provided by BIM consultant, and also acquisition of consultancy services which include BIM services. CTN supported the collaboration between the two Committees and suggested Com-BIM to work together with Com-CPT in developing clauses for incorporation into private or public works contracts.

- e) After deliberations, SLKm from PlanD requested to involve in development of BIM Standards on simplified BIM. JCCp would keep PlanD updated. JCCp
- f) On the development of 5D BIM for QTO, AF suggested to form a small working group including SLC from HKIS, Ms. Rachel CHOW and CSO from HKIA, CFPw from HKIE, KYm from ACQS, Ms. Rachel YU from ArchSD, and representatives from AAP and ACEHK to follow up. CIC Secretariat

Members took note of the progress of the TF-BS (Phase 2).

**[Post Meeting Notes:** Com-CPT suggested to consider Com-BIM to take lead for developing standard agreement for contracts with BIM application.]

*(CTN left the meeting at 3:36pm)*

## **2.5 Progress of the Task Force on BIM Training (TF-BT)**

- a) CtCg briefed Members on the paper CIC/BIM/P/006/19 regarding the progress of the TF-BT as follows:
- One meeting was held since the last Com-BIM Meeting.
  - HKIA would organise a top-up BIM training course for their members.
  - The relevant HKIE Divisions would organise engineering discipline-specific BIM technical seminars/talks/forums for their members continuously.
  - HKIS would sign a MoU with IVE to provide training for their members.
  - CIC would conduct a study on the skill requirements of BIM Coordinators or equivalent personnel and develop the syllabus for the required training courses.
  - TF-BT Members suggested to develop training courses such as BIM workflow and BIM Uses to cope with the needs of the industry.
  - DEVB would offer BIM training for the Engineering Graduates.

- b) PMk from HKIC reported that the BIM training places are 1,551 up to now, which was more than planned places 1,520 for the school year 2018-2019. 2,140 training places were planned for the school year 2019-2020.
- c) For the future development of new training and BIM Standards, AF suggested TF-BT work closely with TF-BS.

Members took note of the progress of the TF-BT.

## **2.6 Progress of BIM Adoption Survey**

AHKK briefed Members on the background of the BIM adoption survey. It aimed to establish a fuller picture of the current BIM adoption situation in the Hong Kong construction industry and a baseline for comparison studies in the future. The contract commencement day was 2 May 2019 while the completion day would be end of October 2019.

Dr. William LAM, representative from the bimSCORE Ltd, consultant of this survey, gave a presentation on the progress of their work.

After presentation, AF suggested the consultant to examine wider range of samples for in-depth interview and circulate the draft questionnaire to Members for comments.

Members took note of the progress of BIM adoption survey.

[**Post Meeting Notes:** CIC Secretariat sent draft questionnaires to Members for comment by email on 12 June 2019. The project steering group meeting was held on 17 June 2019 to review the questionnaires, Members' comments received and the interview sessions for each group of stakeholders. The online survey would commence in the second week of July 2019.]

## **2.7 Presentation of BIM Adoption Roadmap**

Representative from different organisations who had signed the BIM adoption charter gave a presentation on their organisation's BIM adoption roadmap.

### **(a) DEVB**

CTY reported that DEVB has mandated the adoption of BIM technology in the design and construction of major public works projects and would promote the use of this technology in private construction projects. With

a view to better site record management, DEVB was exploring the use of BIM to help site supervision. DEVB was aiming to mandate BIM for asset management/facility management (AM/FM) in the coming few years. In addition, DEVB was developing a Common Spatial Data Infrastructure to enable efficient use of spatial-enabled building information data to help develop Hong Kong as a “Smart, Green and Resilient City”. All graduate trainees under the DEVB (Works Branch) who would be graduating in 2019 would learn BIM. They may apply for the CCBM credential after satisfactory completion of the BIM training and acquiring sufficient BIM experiences. The BIM adoption roadmap was continuously extending the use of BIM from design and construction to other applications and to adopt BIM for e-tendering in the long term.

*(BLw left the meeting at 5:01pm)*

(b) AAHK

KWKw reported that AAHK was building a “Digital Twin” to enable digital transformation and data driven decision making culture. Its application would cover design, construction, operation and maintenance for the full asset life cycle. For digital twin, it was not only included BIM, but also Geographic Information System (GIS), AM system, etc. With big data analytics, AAHK would integrate the data collected from Internet of Things (IoT) and other sources, analyse them to make future predictions and present in the digital twin model. KWkw also shared the challenges of AAHK, including build large scale 3D models for existing facilities and scan underground utilities.

*(PaM left the meeting at 5:04pm)*

(c) HKHA

ECSc reported that BIM roadmap of HKHA was to maintain Charter on BIM Adoption signed with CIC and continue to strive for wider application of BIM in public housing departments. HKHA had several BIM infrastructure enhancements, including update of BIM Standards and Guidelines, enhancement of BIM libraries (families), hardware and software upgrade, and bi-monthly coaching workshop. HKHA has implemented BIM in over 90 projects in the past ten years. To widen application of various BIM uses, HKHA has used BIM in different work stages, including feasibility and planning stage, scheme design stage, detailed design stage, statutory submission stage and construction stage. ECSc also mentioned that HKHA has created numbers of BIM objects of local plant species and HKHA is willing to share with CIC. ECSc

After presentation, AF suggested HKHA could report the work on Independent Checking Unit of Housing Department and Estate Management Division if they have any progress, and also share the ECSc

challenges in the future.

*(ELSI, SR and RPg left the meeting at 5:15pm)*

(d) HKHS

FY reported that HKHS would use BIM and start with large commercial/non-domestic areas that BIM would benefit most, e.g. enhance coordination and buildability, instead of full size implementation. They would also start to build up in-house staff on BIM skill and examine the skill and capacity of their working partners and subcontractors. They would promote AM/FM to property management who was not ready to adopt BIM at the moment.

(e) URA

AnLg reported that URA was exploring to use and apply BIM in three areas including FM, new development project and existing building. For FM, more commercial premises were adopting BIM and URA explored to use centralised platform to facilitate FM projects. For new development project, URA explored to use programme to automatically check saleable areas from the BIM models. URA was also exploring to team up with a consultant to apply CIC R&D Fund for the development of automated GFA calculation tool in a pilot project. For existing building, the major task was to promote rehabilitation but the problem was lack of as-built record. In a pilot project, URA lined up with some professionals, BIM services providers and an IO to use point cloud, BIM technology and scanning to build a BIM model successfully for tendering purpose but was costly and hard to commercialise. URA was exploring partner if a point cloud model could be turned into a BIM model automatically.

(f) WKCDA

ASn reported that WKCDA has developed their BIM roadmap since 2008 by providing leadership in demanding BIM, increasing BIM resources, showcasing Hong Kong's talents, publicising BIMs effectiveness transparently and supporting regulatory change. Achievements of WKCDA including specifying BIM applications since 2008 for all projects using Revit, ongoing evolution of BIM scope, supporting BIM experts of various partner firms, progressing from "informational" to "contractual" BIM, continuously building internal BIM capacity and adopting complementary BIM technologies. For upcoming plan, WKCDA would implement a 5D BIM cost management policy, develop a common object library and BIM specifications, mandate the use of BIM for all Public-Private Partnership (PPP)/ Build-Operate-Transfer (BoT) Projects and maintain the use of BIM for all future amendments and alterations.

After all presentations, AF suggested to invite REDA to update the CIC

progress of BIM adoption amongst their members in the next meeting. Secretariat

AF reminded some Works Departments, associations and institutions to submit the BIM adoption roadmap or BIM adoption promotion form to CIC Secretariat on or before 18 June 2019 for consolidation if they had not done so. Then CIC Secretariat would share the information with Members by email. CIC Secretariat

*(ASn left the meeting at 5:50pm)*

*(ECSc left the meeting at 5:55pm)*

## **2.8 Presentation of 5D BIM**

Ms. Katherine SHUM, Director of the Rider Levett Bucknall, gave a presentation of 5D BIM experience sharing. Practical examples were QTO in pre-contract stage, payment assessment and handling of Variation Order (VO) in post-contract stage and cash flow. To implement 5D BIM, teamwork was very important and involvement of Quantity Surveying (QS) since early stage and model checking by QS were required. The way forward included standardisation, collaboration, MiC, VR, AI and Blockchain.

AF suggested TF-BS to examine the user cases for further development and to identify measure for wider adoption. CIC Secretariat

## **2.9 Any Other Business**

AF gave a brief presentation on the sharing of the bSI Standards Summit and encouraged Members to attend International Standards Summit in Beijing in October 2019. All to note

## **2.10 Next Meeting**

10 September 2019 (Tuesday) at 2:30 p.m. at the Board Room, 29/F, Tower 2, Enterprise Square Five (MegaBox), 38 Wang Chiu Road, Kowloon Bay, Kowloon, Hong Kong. All to note

There being no further business, the meeting was adjourned at 6:26pm.