

Construction Industry Council

Committee on Environment and Technology

Meeting No. 003/13 of the Committee on Environment and Technology for 2013 was held on 4 July 2013 (Wednesday) at 2:30 pm at CIC Headquarters, 15/F, Allied Kajima Building, 138 Gloucester Road, Wanchai, Hong Kong.

Present:	Kevin POOLE	(KP)	Chairman
	Siu-hung CHAN	(SHC)	
	Reuben CHU	(RC)	
	Robert LAM	(RL)	
	Christopher LEUNG	(CL)	
	James KWAN	(JK)	
	Sze-chun WONG	(SCW)	
	Choi-kai AU	(CKA)	Director of Buildings
	Ada FUNG	(AF)	Hong Kong Housing Authority
	Connie YEUNG	(CY)	Hong Kong Housing Authority
	Jimmy CHAN	(JC)	Development Bureau
	Sam-choi CHAN	(SCC)	Construction Site Workers General Union
	Ping-wai CHOW	(PWC)	Hong Kong Construction Industry Employees General Union
	Pun-hing HO	(PHH)	The Hong Kong Federation of Electrical and Mechanical Contractors
Wai-wah HO	(WWH)	Chair of TF-RSS	
James PONG	(JP)	Hong Kong Institute of Surveyors	
Kenneth POON	(KP)	Hong Kong Institute of Surveyors	
Simon WONG	(SW)	Chair of TF-RFID	
In Attendance:	Ringo YU	(RY)	Hong Kong Construction Association
	Joe FONG		Environmental Protection Department
	Ka-chun MAK		Architectural Services Department
	Ricky LAU		Development Bureau
	Alan TANG		Development Bureau
	Joseph MAK		Hong Kong Housing Authority
	David MAK		Hong Kong Housing Authority
	Kevin YEUNG		Hong Kong Housing Authority
	Hung-wai YUEN		Hong Kong General Building Contractors Association
	Ivan WONG	(IW)	Senior Manager - Council Services 2
Julian LEE	(JL)	Manager - Research	

	Ivan KO	(IK)	Manager - Council Services 2
	Belle HO	(CYH)	Manager - Council Services 5
	James WONG	(JW)	Officer - Research
Apologies:	Anthony CHAN	(AnC)	(represented by Mr. Hung-wai YUEN)
	Hau-wai CHEUNG	(HWC)	
	Thomas NG	(TN)	The University of Hong Kong
	Kwok-keung LI	(KKL)	Electrical and Mechanical Services Department
	Chuen-fai WONG	(CFW)	Environmental Protection Department (represented by Mr. Joe FONG)

PROGRESS REPORT

Action

3.1 Introduction and Confirmation of the Progress Report of the Previous Meeting

Members took note of Paper CIC/ENT/R/002/13 and confirmed the progress report of the last meeting held on Thursday, 18 April 2013 at CIC Headquarters, 15/F, Allied Kajima Building, 138 Gloucester Road, Wanchai, Hong Kong.

3.2 Matters Arising from the Previous Meeting

3.2.1 Research on River Sand Substitutes for Concrete Production and Cement Sand Mortar Production (Phase Two)

Item 2.4 of the Previous Progress Report - HKU was reviewing the draft contract and was advised to commence the Study once the contract could be executed before September 2013.

3.2.2 Working Group on Roadmap for BIM Implementation

Item 2.9 of the Previous Progress Report - The fact sheets in both English and Chinese versions had been published and were available for the public to download from the CIC's website.

3.3 Brief on the Study Report of Roadmap for the BIM Implementation in Hong Kong

Members took note of Paper CIC/ENT/P/020/13.

With reference to the Paper CIC/ENT/P/020A/13 tabled at the meeting, AF presented the Report of the Roadmap for BIM Strategic Implementation. Started from September 2012, members' views were sought through a series of meetings. The report was finalised.

16 initiatives were suggested in the report for the implementation of BIM in Hong Kong's construction industry (refer to Section 10 of the Report for details). It was recommended that three major imminent actions to be taken by the industry:

- a. Establishment of Standards;
- b. Promotion; and
- c. Training

As the "Action Parties" in Chapter 10 and the allocation of tasks to different "Action Parties" were a bit sensitive, it would better take a longer time to discuss further among different stakeholders. For the rest of the report, it would provide useful information to industry stakeholders to realise the situation of BIM adoption in Hong Kong construction industry.

Hence, Members agreed to publish the document in the form "Draft Final Report" at the CIC website after taking out Chapter 11 and deleting the rows of Action Parties for Chapter 10 which could invite views and comments from relevant BIM stakeholders. The Working Group would have further discussion on those issues relating to "Action Parties".

AF also highlighted that before a central body to co-ordinate the BIM development as recommended in the report, CIC could assume the role in the interim in order to keep the wider adoption of BIM going.

Action

3.7 Task Group on Establishing of Industry Standard for BIM Implementation

Members took note of Papers CIC/ENT/P/022/13 and CIC/ENT/P/023/13

The Secretariat briefed Members on the paper. Recommendations made by BIM Working Group were as follows:

1. Set up a new task group to work out industry standards/ specification/ common practice/ reference document to let the industry to follow.
2. Promote BIM to industry stakeholders who are observers or beginners for the adoption of BIM.

With respect to Action 1 above, this Task Group had been formed under the direction of the Working Group to take forth such recommendation.

Task Group Members' major views on the BIM standards were:

1. The standards would better be produced and provided to the industry phase by phase;
2. The first standard, for local practice, should be made by leveraging the current BIM standards of Hong Kong Housing Authority, MTRC and HKIBIM, and overseas BIM organisations as appropriate;
3. The first standards should be simple and generic enough to allow the industry to follow easily and facilitate further expansion of the standards.

3.8 Consultancy Service for Preparation of BIM Standards

Members took note of Paper CIC/ENT/P/023/13.

The Secretariat briefed Members on the paper. In order to promptly response to BIM Working Group and Task Group members' recommendation on "devising a set of standards or specification for the use of BIM in construction projects to facilitate those users who wish to widen the usage of BIM", Task Group members recommended to commission consultancy service to prepare for BIM standards that are suitable for Hong Kong's local practices. The scope of the consultancy service includes

Action

preparing the following four BIM standards for Hong Kong's construction industry in Phase One:

- Project Execution Plan;
- Modelling Methodology;
- Level of Details;
- Component Presentation Style and Data Organisation.

Being asked the rationale of not including Mechanical, Electrical and Plumbing (MEP) in the first phase standard development, the Secretariat explained that with reference to the overseas BIM standards such as those for Singapore, the volume of BIM standards for MEP was much more than those for architectural and structural works. As the first time development of BIM standards in Hong Kong, it was suggested starting with the simpler ones first, i.e. architectural and structural standards only.

Members advised that Phase One of the consultancy service should also include at least a few MEP elements in addition to the architectural and structural design standards.

After much deliberation, Members endorsed on:

1. commissioning consultancy service to carry out the consultancy service for preparation of BIM standards; and
2. the outline brief of the consultancy service as attached at Annex A of the paper subject to the inclusion of some MEP elements in the study.

[Ms. Ada FUNG left at this juncture.]

3.4 **Presentation on the Experience of the Use of RFID in Hong Kong Housing Authority's Construction Projects**

Joseph MAK delivered a presentation on their experience of the use of RFID in Hong Kong Housing Authority's construction projects. A possible future development would be integrating the use of RFID with BIM by tracking data of building components on site and completion of works to facilitate cost planning, payment, cash flow analysis, etc.

[Mr. Joseph MAK left at this juncture.]

Action

Simon WONG briefed Members on the progress of works of the Task Force on RFID and GPS. Site trial at construction site of Hong Kong Housing Authority for the test on the adoption of RFID tags on dump truck was carried out in mid June 2013.

The purpose of this site trial was to test out the performance of RFID tags in real construction site environment. Passive RFID tag and semi-passive RFID tag were adopted in the prototypes in this site trial. According to the preliminary test results, the observations were as follows:

1. Passive tag outperforms semi-passive RFID tag with respect to read and write performance; as such, passive RFID tag was recommended instead semi-passive RFID tag.
2. READ performance – the passive RFID tag on dump truck’s windshield could be well read by antenna away from around 4 metres distance.
3. WRITE performance – the passive RFID tag on dump truck’s windshield could be well written by antenna away from around 4 metres distance; however, the dump truck needed to stop for a few seconds and not moving.
4. Recommended to install the RFID tag at top middle of the whole windshield of a dump truck in view of (a) tag performance (b) location of antenna at site ingress and egress.
5. Passive tag antenna would not interfere active tag antenna even they were installed close to each other.

According to the aforesaid site test data, computer simulation in laboratory would be carried out to simulate the performance of passive RFID tag during bad weather especially heavy rain.

The consideration of the use of passive RFID tag and semi-passive RFID tag in the site trial are:

1. while active RFID tag has the best performance, the use of active RFID tag might result in the monopoly in the choice of active RFID tag and receiver, or using different tags and receivers for different projects;
2. passive RFID tag could provide similar function to active RFID tag though range of read and write distance of the passive RFID tag is shorter;
3. to adopt passive RFID tag (rather than active RFID tag)

aiming to avoid proprietary solution and attract solution providers' competition due to the open standard nature of passive RFID.

Upon site test results ready, the test report would then be deliberated in the Task Force.

[Mr. Simon WONG left at this juncture.]

3.5 **Presentation on the Strategic Framework on Manpower and Enhancement of Productivity of Skilled Workers**

Ricky LAU delivered a presentation on the latest guideline of the Development Bureau titled "Guidelines for Enhancement of Productivity of Skilled Workers in Public Works Projects." The Guidelines helps reduce the demands for skilled workers using the principles of standardisation, simplicity and single integrated elements. It is expected that the demands for skilled workers in 7 identified trades would be reduced, namely bar benders and fixers; formwork carpenters; metal formwork erectors; plumbers; pipelayers; metal workers and welders.

3.6 **Guidelines for Enhancement of Productivity of Skilled Workers in Construction Projects**

Members took note of Paper CIC/ENT/P/021/13.

The above guidelines were prepared by the Development Bureau for adoption in public works to enhance the construction productivity through reducing the demand of skilled workers.

In considering whether CIC should convert the guidelines into Reference Materials for the use of the whole industry, i.e. including both public works and private building projects, Members generally agreed that Reference Materials were usually deliberated thoroughly within CIC before they were issued. It would not be appropriate to convert the guidelines into Reference Materials without reviewing and deliberating the contents in details. Some Members considered that the guidelines were suitable for adoption in public works rather than in private building projects.

Action

**CIC
Secretariat**

Members considered that instead of converting the guidelines into Reference Materials, the Secretariat could help promulgate guidelines through CIC newsletter/ snapshot so that the industry stakeholders would be informed of the new government document. A hyper-link in the CIC website for downloading the guidelines could also be considered.

3.9 Briefing on Strategic Implementation of Prefabrication and Modular Construction (Phase Two)

Members took note of Paper CIC/ENT/P/024/13.

The Secretariat briefed Members on the paper. Com-ENT and the Council have endorsed and approved on the Phase One Report in early 2013.

Following the opinions set out in the Report, in the Com-ENT meeting no 001/13, the Committee endorsed Phase Two Study to carry out in-depth studies in the four key areas:

- a) Manpower - any manpower saving, impact on existing labour market, and effectiveness of attracting new bloods to join the industry;
- b) Local Yard - study on the requirements of establishing a prefabrication yard in Hong Kong and its competitiveness over the same in Mainland;
- c) Type - opportunities to widen the scope of adoption in other types of building components and their alternative technical solutions on vertical positioning such as less reliance on tower crane;
- d) Scope - opportunities to adopt precast construction of structural building elements.

Members had the following views on the need of the Phase Two Study:

- to identify the feasibility and requirements of a local prefabrication yard
- as a supporting document to justify the need of a local prefabrication yard in competing for land

Action

- to explore if the local prefabrication yard could focus on the production of certain elements such as E&M components and hence be a supplement to the prefabrication yard in Mainland rather than a replacement.

Hence, Members agreed to commission a consultant to carry out the feasibility study afore-mentioned.

Besides, in order to better understand the effectiveness of attracting new bloods to join the industry by establishment of prefabrication yard in Hong Kong, and the demand of prefabricated elements of the local construction projects, it is proposed to commission consultancy service to carry out a survey to understand such views as well.

In conclusion, Members endorsed commissioning consultancy services to carry out the survey and the Phase Two Study. The Secretariat would prepare the study brief for the study accordingly.

3.10 **Any Other Business**

- a. In response to migration to Eurocodes, updated design manuals for public works, namely, (a) Structures Design Manuals for Highways and Railways (2013), (b) Stormwater Design Manual (2013), (c) Sewerage Manual (2013), (d) Manual for Structural Design of Water Works Structures (2013) were published by Development Bureau on 13 June 2013. The manuals could be downloaded from the websites of respective Government Works Departments.
- b. The Secretariat attended the APEC BIM Workshop held on 24th and 25th June 2013 to build up the connection with the region relating to BIM.
- c. The Chair of the Working Group on BIM Implementation will lead a team of delegates from government officials and CIC Secretariat to attend the Government Symposium on BIM in Singapore scheduled for 31 July to share experience among government officials of different countries in BIM implementation.
- d. With reference to the discussion at the meeting, the Secretariat

Action

would circulate a draft 2014 Work Plan for Members' comments.

[PMN: Hong Kong Construction Association (HKCA) nominated Mr. Ringo YU on 10 July 2013 to replace Mr. Russell Jones to represent HKCA at the Committee as a Co-opted Member.]

3.11 Tentative Date of Next Meeting for 2013

2 October 2013 at 2:30 pm at CIC Headquarters, 15/F, Allied Kajima Building, 138 Gloucester Road, Wanchai, Hong Kong. **All to note**

There being no further business, the meeting was adjourned at 5:15 pm.