

Construction Industry Council

Committee on Productivity

Meeting No. 004/20 of the Committee on Productivity was held on 16 December 2020 (Wednesday) at 2:30 pm in the Board Room, 38/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon.

Present:	Ringo YU	(RiYu)	Chairperson
	Vincent CHOW *	(VC)	for Permanent Secretary for Development (Works)
	Kwok-fai CHUNG*	(CKFi)	
	Simon KWOK *	(TKK)	
	Daniel LEUNG *	(DL)	for Permanent Secretary for Transport and Housing (Housing)
	Tat-wai LI *	(LTWi)	
	Kenneth MO *	(KM)	
	Shujie PAN *	(PSJ)	
	Rocky POON	(LKP)	
	Derek SO *	(KLS)	
	Ken WONG *	(KnW)	
	Franki YEUNG *	(FY)	
	In Attendance:	Chi-kwong WONG *	
Siu-lai CHAN *			(Presenter)
Frankie FUNG *			PSGO, DEVB
Eric CHAN *			PSGO, DEVB
Victor CHAN *			PSGO, DEVB
Chi-lung CHENG *			PSGO, DEVB
Ka-kui CHAN*		(KKCh)	Chairman, CIC
Albert CHENG		(CTN)	Executive Director, CIC
Richard PANG		(RPg)	Director – Industry Development
Thomas TONG		(TsT)	General Manager – Innovation & Technology Development
James WONG		(JsW)	Senior Manager – Construction Productivity
Bonnie TZE		(BeT)	Manager – Construction Productivity
Eason YUNG		(EnY)	Senior Officer – Construction Productivity
Christy KWONG	(CyK)	Officer – Construction Productivity	
Apologies:	Ivan FU	(FI)	
	Eddie LAM	(ELM)	

* Members and presenters attended the meeting online via MS Teams.

MINUTES

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4.1 Confirmation of the Minutes of the Previous Meeting

Members confirmed the minutes of the Com-PRO Meeting No. 003/20 without any amendment.

All to Note

4.2 Matters Arising from the Previous Meeting

Item 2.2: JsW reported that a letter was issued to Professor PAN regarding the decision made by Com-PRO on the study on “MiC for High-rise Buildings in Hong Kong: Supply Chain Identification, Analyses and Establishment” dated 23 Sep 2020. Subsequently, a meeting had been held with the research team to improve the draft reports. A focus group meeting would be arranged by the research team in December 2020 to obtain advice / input from a few industry experts on improvement of the draft reports, in particular, the “Practical Guide on MiC Adoption”. The Secretariat will seek views and endorsement from Members when the revised draft reports are ready.

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Item 2.4: JsW reported that the objectives and the expected quality of the research study “Development of an Appraisal Framework for Assessing the DfMA Content for Buildings in Hong Kong” had been achieved. 11 Members had endorsed the final report. As such, Members agreed to proceed with the final payment in accordance with the research agreement. The comments from the Development Bureau (DEVB) and the Housing Department would be taken into account in further developing the DfMA Scoring Scheme (DSS).

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Item 3.4: The DfMA x MEP Tradeshow 2021 would be presented under agenda item 4.6.

Item 3.5: Members took note of the membership of the Expert Group established for the research project on “Application of Maturity Method for Determination of Early-age Concrete Strength”. The Expert Group would be chaired by Mr Thomas CHAN of DEVB.

Item 3.6: JsW reported that the second International Symposium on “Unlocking Innovation in Construction through 5G Technology” was held on 9 December 2020 with a total of 1,182 participants from the industry and its business matching event would be held on 16-17 December 2020. The overall expenditure of the Symposium was about HK\$ 530,000, which was within the approved budget of HK\$ 800,000. Over 80% of the participants had rated the Symposium as good or excellent.

Update on Webinars: JsW reported that a CIC Research Webinar on “Advanced Steel Solutions and Co-engineering” was held on 19 October 2020 with a total of 629 participants; and a DfMA Webinar on “Facilitating Offsite Construction through a Platform Approach” with two UK expert speakers and facilitated by Mr Tim HALL was held on 14 December 2020 with a total of 987 participants.

Request for EOT and Updates on the Consultancy and Research Projects: The Hong Kong Productivity Council requested for an extension of time (EOT) for the consultancy study on “Design and Develop 2.5m³ Concrete Skip with Remote Control of the Gate”, from October 2020 to February 2021 (i.e. EOT of four months). The additional time required was for carrying out improvement to the remote control set up and the subsequent testing on site.

The Secretariat recommended to grant an EOT for the advisory service of Mr Tim HALL up to March 2021, for him to arrange one additional webinar and carry out tasks requested by the CIC. Members approved these two EOT requests.

4.3 **Progress Update on the Consultancy Services for “Driving DfMA Adoption to Enhance Productivity for E&M Works in HK Building Projects”**

Ir Chi-kwong WONG from the Consultant, AECOM, presented a summary of their Interim Report, including (a) review on DfMA development in the UK, Singapore and Hong Kong; (b) results of interviews with industry stakeholders and questionnaire survey; and (c) proposed strategies for driving DfMA adoption, viz. (i) raise awareness by education & information; (ii) create demand; (iii) enhance supply chain collaboration and ecosystem; and (iv) build up local capabilities and skills. The proposed structure of the DfMA Guidebook for E&M Works was also presented.

Members agreed with the proposed strategies for driving DfMA adoption for E&M works, with the following to be taken into account in the development of initiatives:

- (a) standardisation in design, a view to achieving economy of scale and cost/programme certainty and reduction;
- (b) design for manufacture and assembly to avoid cutting and welding on site as much as possible;
- (c) collection of data on benefits of adopting DfMA for MEP works;
- (d) provision under the works contract of working space on site/ nearby for local prefabrication and/ or modularisation as a short-term measure, which could alleviate cross-border transport, tax and

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custom issues, with establishment of a permanent factory in the long term;

- (e) development of an education and training plan;
- (f) improvement on the workflow of the main contractor and MEP subcontractors, including possible specification of a lead MEP contractor to coordinate all E&M trades under the works contract;
- (g) development of measures for driving DfMA for MEP works in the private sector, to meet the challenges in adopting standardised assemblies in non-standard building and plant room layouts and in implementing early design freeze in a changing market; and
- (h) development of suitable procurement approaches to support DfMA (such as early contractor/subcontractor/supplier involvement).

The Consultant took note of Members' views, and gave the following initial comments: (a) DfMA for MEP works should emphasise on standardised design to be achieved in the early design stage; (b) setting suitable KPIs for the project (e.g. project programme, productivity and safety improvement, carbon emission and waste reduction, etc.) would help to drive DfMA adoption; and (c) a permanent local factory would be driven by demand in the long term.

DEVB reiterated the reaching of consensus among Com-PRO members in the half-day "DfMA Forum" held on 7 September 2020 that limited resources should be focused on promoting wider adoption of MiC and the use of modular integrated MEP.

The Secretariat would circulate the Interim Report to Members for review and endorsement.

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4.4 Application for the CIC R&D Fund – Adaptive Modular Construction Using Semi-Rigid Joints and Economical Corrugated Beam Sections

Prof. Siu-lai CHAN presented his research proposal on the captioned subject with a research duration of 24 months at a cost request of HK\$1,500,000 from the CIC R&D Funding.

The main objective of the research was to develop a structural analysis approach, which takes into account the strength and stiffness of the connections and the corrugated sheets in MiC modules, to achieve an economical design. Members were concerned that the research could not achieve significant cost savings when compared to the overall building cost and the analysis constraints could reduce the flexibility in the building design. The research proposal was not approved.

4.5 Proposed Initiatives for Driving DfMA Adoption in the Hong Kong Construction Industry

The Secretariat proposed 4 key initiatives for driving DfMA adoption in the Hong Kong construction industry in the next few years, viz. (a) implement a DfMA Scoring Scheme (DSS); (b) enhance DfMA adoption for E&M works; (c) explore the use of a platform-based approach to facilitate DfMA adoption; and (d) provide training on DfMA.

JsW presented the framework of an enhanced DSS with trial run results of its adoption in a few projects. DEVB indicated that there is Government policy to drive modular integrated construction (MiC), with mandatory adoption for new building works under the Capital Works Programme, and had concern on the need for incentivising DfMA and its impact on MiC adoption. Members, however, considered that there are industry and project benefits to drive adoption of DfMA, especially in the private building and E&M sectors. Hence, they agreed to launch the DSS (which embraces the MiC technology) in 2021 Q1 for trial use, collect data for calculating the DSS scores on a number of building projects to benchmark DfMA adoption levels, and obtain information on the performance of these projects (e.g. productivity, safety, waste, etc.). Then analyses would be carried out to try to correlate the DSS scores with the associated project performance.

Comments were received from Members on the proposed enhanced DSS. These included: (a) re-consider the rationale to assign a score for cast in-situ construction; (b) the scores for prefabricated MEP components are relatively high; (c) the score for standardised building design is relatively low; (d) the scoring items should be periodically adjusted according to the advancement in DfMA and its enabling technologies and the industry's adoption rate; and (e) DEVB maintained its adverse comment on and non-endorsement of the final report of the Research Study on DfMA Appraisal Framework (DAF) and the proposed DSS conveyed to the Secretariat via its email dated 18 October 2020.

DEVB opined that MiC has proven its highest score achievement in the DSS. It was not necessary to introduce such a scoring scheme to assess other prefabrication technologies in the hierarchy of DfMA and not appropriate to introduce any incentives for the application of these technologies. DEVB reiterated the reaching of consensus among COMPRO members in the half-day "DfMA Forum" held on 7 September 2020 that limited resources should be focused on promoting wider adoption of MiC and the use of modular integrated MEP. DEVB suggested not to focus on promoting the use of other lower level prefabrication technologies in the hierarchy of DfMA.

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The Secretariat took note of Members’ comments and would collect data for internal reference and analysis as the first step. The analysis results would be presented to Members for review and further discussion when available. After deliberation, Members had no further comments on the other proposed initiatives for driving DfMA adoption.

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4.6 Progress Update on the DfMA x MEP Tradeshow 2021

BeT presented the progress update on the DfMA x MEP Tradeshow 2021 (the Tradeshow) scheduled on 2-12 March 2021 to be held at the CIC-Zero Carbon Park. Members had no comment on the proposed event programme, guests and speakers for the opening ceremony and conference, proposed supporting organisations, and layout plan and exhibits for the Tradeshow.

The Secretariat took note of Members’ comments on the key visual. The name “DfMA MiMEP Tradeshow 2021” was agreed by Members. The Secretariat will carry on organising the Tradeshow with the HKFEMC and implement the contingency plan on virtual tradeshow if required.

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4.7 Any Other Business

(i) CIC Construction Innovation Award

JsW presented the background of the CIC Construction Innovation Award (Innovation Award), reviewed the awards given in 2015, 2017 and 2019, and sought ideas/comments from Members for the next Innovation Award event to be held in 2022. Items reviewed included: aims, submission statistics, assessment criteria, judging panel, prizes & prize money, repositioning to attract high quality submissions, global promotion & business opportunities, potential sponsors and comments from the Executive Committee.

Three possible options of organising the Innovation Award 2022 for Members’ deliberation were presented, viz. (i) “Business as usual”; (ii) to rename it as the “Chief Executive’s Award for Construction Innovation”; and (iii) to rename it with an identified title sponsor. Members disagreed with the suggestion of renaming the award with an identified title sponsor.

(ii) Vote of thanks to Com-PRO Chairperson

Since Ir Ringo YU would complete his six-year tenure as a Council Member on 31 January 2021, KKCh and CTN expressed their gratitude for Ir YU’s active participation and contributions to the CIC as a Council Member and the Com-PRO Chairperson.

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4.8 Next Meeting 001/21

The next meeting would be held in March 2021. The Secretariat would inform Members once the meeting details were confirmed. **All to Note**

The meeting was adjourned at 5:15 pm.