

Construction Industry Council

Committee on Productivity

Meeting No. 001/17 of the Committee on Productivity will be held on 29 March 2017 (Wednesday) at 2:30pm at Meeting Room, 38/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon.

Present:	Christopher LEUNG (KYL)	Chairman
	Ivan Chin-shing FU (FI)	
	Vitus NG (VN)	for Permanent Secretary for Development (Works)
	Kwok-Kwan NG (KwKN)	
	PAN Shujie (PSJ)	
	Tommy NG (TyN)	Association of Consulting Engineers of Hong Kong
	TSE Kam-leung (TKLg)	Architectural Services Department
	Vincent CHEUNG (VnC)	Hong Kong Construction Association
In Attendance:	Jeff FUNG	(Presenter)
	Wei PAN	(Presenter)
	Sam CHAN	(Presenter)
	Eric ZHANG	(Presenter)
	Thomas NG	(Presenter)
	Kelwin WONG	(Presenter)
	CHAN Tak-ming	(Presenter)
	Victor CHAN (VCh)	Buildings Department
	Patrick WONG (PtW)	for Permanent Secretary for Transport and Housing (Housing)
	CHEUNG Hau-wai (HWC)	Executive Director
	Alan TANG (AnTg)	Government Seconded
	James WONG (JsW)	Manager - Research & Development
	Terry LAM (TyLm)	Manager - Research & Development
	Carol DU (CD)	Officer – Research & Development

Apologies:	WONG Sze-chun	(SCW)	for Permanent Secretary for Transport and Housing (Housing) Hong Kong Federation of Electrical and Mechanical Contractors Buildings Department
	KWAN Kai-sing	(KSKn)	
	Ringo SHEA	(RSh)	
	Pauline PANG	(MTP)	

PROGRESS REPORT

Action

1.1 Confirmation of Progress Report of the Previous Meeting

Members confirmed the notes of Meeting No. 004/16 for the Com-PRO (Paper CIC/PNR/R/004/16) without amendment.

All to Note

1.2 Achieving Productivity Leap through Construction Process Re-engineering (Initiated by Com-PRO)

Mr. Jeff FUNG from Hong Kong Productivity Council (HKPC) presented the progress and initial finding of the project which started in November 2016. Mr. FUNG was exploring standardization of work processes to reduce the time for learning cycle, on-site automatic equipment for bar cutting, bending and fixing, and systematic layout planning to reduce the time for material delivery, etc.

The Chairman concerned whether HKPC could conduct field trials (e.g. collaboration with Housing Authority) to verify and quantify the effectiveness of their proposed measures. HKPC agreed to consider the ways to verify of their proposed measures.

VCh suggested HKPC to make reference to the operation of an bar-cutting and bending yard in Tsing Yi which aligned with measures involving off-site prefabrication proposed in the project. Mr. FUNG would consider to visit to the factory to study its workflow.

FI furthered that off-site work processes should be taken into consideration in considering enhancement measures. HKPC agreed to follow in the project.

HWC mentioned that identification of constraints in different types of construction sites was crucial in identifying suitable re-engineering measures. Mr. FUNG responded that HKPC would make reference to the visited sites to identify the constraints and appropriate measures.

Action

With all members' endorsement, the project would be extended from Jul 2017 by two months to September 2017 to facilitate HKPC to collect adequate data for verification of findings.

All to Note

1.3 **A Comprehensive Productivity Appraisal of the Hong Kong Construction Industry (Initiated by Com-PRO)**

Dr. Wei PAN from HKU delivered a presentation on the draft final report of the project. It started in December 2015 with target completion in June 2017. After focus group meetings in February 2017 and 1st international consultation forum (primarily on Singapore experience) in March 2017, HKU had drafted a final report which identified the drivers and constraints for productivity enhancement in the industry in five areas of policy formulation, regulatory measures, project management, design and site execution. They had proposed strategies and measures to enhance construction productivity in industry level e.g. increasing precast construction, promoting BIM and innovation, etc.

The Chairman suggested HKU to elaborate how to implement the proposed measures in a more specific manner and quote cases (e.g. PPVC) in the final report. Dr. PAN explained the recommendations could be refined after considering the industry stakeholder's views in the focus group meetings and two forums.

HWC suggested that the proposed measures should be prioritized with more details on areas of imminent needs taking into account current situation. Good overseas practices should be made reference to. Dr. PAN would consider the suggestion and elaborate in the final report.

The draft final report was endorsed in-principle by the members. HKU expected to make the final report available in June 2017.

All to Note

1.4 **Benchmarking the Construction Trade Productivity in Hong Kong (Initiated by Com-PRO)**

Dr. Eric ZHANG from the Hong Kong University Science and Technology (HKUST) presented the progress of the project which started in February 2015. Over the past months, HKUST had expedited data collection through (i) carrying out on-site measurement, (ii) collection of past data via site diaries, and (iii) conducting interviews and survey with experienced industry stakeholders. Dr. ZHANG had also got some productivity data from Singapore BCA.

PSJ concerned the representativeness of the data measured in relatively short periods as compared with the whole construction period. Dr. ZHANG clarified that the on-site measurement were randomly selected during the course of project while the data collected from site diaries and interviews could reflect longer periods. He would consider to cover longer construction period in sampling to enhance the data reliability.

The Chairman opined the causes affecting productivity and its assumptions in measurement were important in comparing the differences between local and overseas ones. Dr. ZHANG noted and would consider it in the comparison.

With Com-PRO's endorsement, the project would be extended from January 2017 for another seven months to August 2017 to facilitate HKUST to collect more private site data for benchmarking the productivity data in Hong Kong and gather data from Singapore and Mainland for comparison.

All to Note

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1.5 **Consultancy Service for Assessing the Performance of the HongKong Construction Industry, Key Performance Indicators (KPI): An International Comparison Study (Proposal for project extension) (Initiated by Com-PRO)**

Prof. Thomas NG from HKU presented the progress update of the project which started in June 2015. Prof. NG has compiled KPIs mainly on manpower, productivity, site safety and construction cost, etc.. HKU would consult the industry stakeholders on the findings shortly. They would devise the consultation strategies carefully to seek views from stakeholders in different areas.

All to Note

Prof. NG explained that strategies for short to long-term enhancement measures would be discussed making reference to overseas good practice. Addressing members' concern, in making recommendations, HKU would consider specified observations in the KPIs.

With the endorsement of the Members, the study would be extended from March 2017 by four months to July 2017 to facilitate HKU to consult the industry stakeholders.

1.6 **Application of Polygonal High Strength Concrete-filled Composite Column in Seismic-resistant Building in Hong Kong (Research initiated by PolyU)**

Dr. T M CHAN from Hong Kong Polytechnic University (PolyU) presented the progress of the research project and sought member's comments on the way forward. The project started November 2015 and was scheduled for completion in November 2017. It was to investigate a polygonal shaped composite column using high-strength concrete under monotonic and cyclic load under earthquake.

VCh suggested technical connection methods (e.g. Beam-column joints) together the readiness of the materials might affect the adoption of the findings by the relevant industry stakeholders. Dr. CHAN responded that the popularity in use of polygonal steel posts had increased in Hong Kong. For the connection methods, a

Action

guideline could be prepared pertaining to the research project. Dr. CHAN would elaborate how the industry could be benefited by the research findings.

As Buildings Department (BD) is preparing seismic design code, PolyU would circulate the findings to the Members including BD for their consideration to incorporate in their new seismic code and to revise the relevant codes of practices.

1.7 **Any Other Business**

1.7.1 Co-organize a symposium with HKUST¹

Members discussed and endorsed the CIC and HKUST co-organized a half day symposium on construction robotics and automation covering Robotics, 3D printing and Unmanned Aerial Vehicle (UAV), etc. in Q2. CIC Secretariat would follow with HKUST Robotics Institute.

Committee Secretariat

1.7.2 Collaboration with R&D Centre

As for the item 4.6.3 of the last meeting “*Co-organizing forum with other research institutes*”, Committee Secretariat has got in-principle support from two research institutes, namely LSCM² and NAMI to co-organize a forum to exhibit the research outcome, and to update research agenda from industry stakeholders. Committee Secretariat was following up with the Construction Innovation and Technology Application Centre (CITAC) (preparing to be set up) to explore feasibility of holding the event to match with its operation time in order to attain synergy effect.

Committee Secretariat

1.7.3 5-day delegation visit to Japan

Committee Secretariat briefly reported the updated progress for a 5-day delegation visit to Japan on “*Prefabrication and Automation*”. Committee Secretariat welcomed members to suggest suitable visiting spots and would continue to follow up with the Japan counterparts.

Committee Secretariat

¹ It includes HKUST Robotics Institute and HKUST's Department of Civil and Environmental Engineering.

² Logistic and Supply Chain Management Enabling Technologies

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1.7.4 **Follow up of the Consultancy Endorsement**

Committee Secretariat reported the endorsement by the Members about the revised proposal on the project “*Investigating the Potential Application of 3D Printing Technology for Construction Supply Chains in Hong Kong*”. The Committee Secretariat would prepare contract documents.

**Committee
Secretariat**

1.8 **Tentative Date of Next Meeting 002/17**

The next meeting was tentatively scheduled in June 2017. The Secretariat would inform Members when the meeting date was confirmed.

All to Note

The meeting was adjourned at 5:00 pm.