

Construction Industry Council

Committee on Productivity

Meeting No. 004/17 of the Committee on Productivity was held on 13 December 2017 (Wednesday) at 9:30pm at Board Room, 38/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon.

Present:	Christopher LEUNG	(KYL)	Chairman
	WONG Sze-chun	(SCW)	
	KWAN Kai-sing	(KSKn)	for Permanent Secretary for Transport and Housing (Housing)
	Vitus NG	(VN)	for Permanent Secretary for Development (Works)
	TSE Kam-leung	(TKLg)	Architectural Services Department
	TANG Kwok Kuen	(TKkK)	Buildings Department
	Vincent CHEUNG	(VnC)	Hong Kong Construction Association
	Ringo SHEA	(RSh)	Hong Kong Federation of Electrical and Mechanical Contractors
	In Attendance:	PAN Wei	
Sam CHAN			(Presenter)
Ivan SHAM			(Presenter)
Carol LI			(Presenter)
Thomas BOCK			(Presenter)
Thomas LINNER			(Presenter)
PAN Wen			(Presenter)
Jeff FUNG			(Presenter)
CHAN Ka-kui		(KKCh)	Chairman, CIC
Albert CHENG		(CTN)	Executive Director, CIC
Henry FUNG		(HF)	Director – Industry Development
K S LI		(LKS)	Senior Manager – Industry Development (Productivity)
James WONG		(JsW)	Manager - Research & Development
Terry LAM		(TyLm)	Manager - Research & Development
Carol DU		(CD)	Officer – Research & Development

Apologies: PAN Shujie (PSJ)
Ivan Chin-shing FU (FI)
Kwok-Kwan NG (KwKN)
Tommy NG (TyN) Association of Consulting Engineers
of Hong Kong

PROGRESS REPORT

Action

4.1 Confirmation of Progress Report of the Previous Meeting

Members confirmed the notes of Meeting No. 003/17 for the Com-PRO (Paper CIC/PRO/R/003/17) without amendment.

All to Note

4.2 Matters Arising from the Previous Meeting

Item 3.3: Prof. Thomas NG from HKU has submitted the revised draft final report to the Secretariat for review. The report will be circulated to Members soon after the meeting.

Item 3.4: A meeting has been held with Dr. ZHANG recently. Dr. ZHANG would submit the revised draft final report for circulation to Members soon after the meeting.

**Dr ZHANG
Xueqing**

Item 3.7: The Agreement Addendum has been signed with the Technical University of Munich.

Item 3.8: Dr. PAN submitted the responses, draft final report and executive summary on 6 Dec 2017. The proposed additional phase for drawing up a pragmatic and effective productivity roadmap would be considered only after Dr. PAN responds satisfactorily to the comments raised by Members.

4.3 Proposed Research Studies in Productivity Discipline - Modular construction for high-rise buildings in Hong Kong: Supply chain identification, analysis and establishment

Dr. Wei PAN from Hong Kong University (HKU) delivered a presentation for an 18-month research project proposal on the supply chain identification, analysis and establishment for adopting Modular Integrated Construction (MiC) in Hong Kong.

The Secretariat highlighted three main clarifications in Dr. PAN's proposals on a) covering different modules types, including steel, concrete and hybrid, b) considering the key parameters for setting up a supply chain for MiC production in Hong Kong, and c) the IP arrangement related to the research.

KKCh opined that there were concerns in the construction industry on MiC, including constructability, future maintenance, etc. These issues should be covered in the study. Dr. PAN agreed that the research would work closely with the suppliers and regulatory departments to address the concerns.

VN concerned about compliance with the local regulations for some trades of work when the modules are manufactured off-site outside Hong Kong. HKU responded that quality assurance measures would be introduced and if found necessary, some of the critical works could be carried out under the supervision of qualified personnel.

The Secretariat also reported that at the meeting of the Task Force on Research on 18 November 2017, the Task Force members recommended to conduct the project in two phases. The first phase should evaluate the opportunity of different types of MiC in Hong Kong, where as the second phase, which would only commence after satisfactory completion of the first phase, would cover the investigation of the remaining supply chain issues including the opportunity of setting up a local supply chain.

After deliberation, Com-PRO Members considered that as the project period would only last for 18 months, dividing the study in two phases could have adverse impact on the programme and continuity of the research activities. Members endorsed the proposal to be conducted in one go.

The Secretariat would follow up to prepare the Agreement incorporating all clarifications provided by HKU. **Secretariat**

4.4 **Research Proposal on Innovative backfilling materials for pavements in Hong Kong**

Dr. Ivan SHAM from Nano and Advanced Materials Institute(NAMI) presented the possible funding options for the proposed development of innovative backfilling materials in response to the enquiries raised by Members in the last meeting.

For the recommended option, NAMI proposed to implement the project as a “Platform Project” under the Innovation and Technology Support Programme (ITSP) of the ITF administered by the Innovation and Technology Commission (ITC). It was proposed that 70% of the funding would be from ITF and the remaining 30% will be from the Construction Industry Council (CIC), NAMI would own the Intellectual Property (IP) of the new materials.

In respect of the industry stakeholders, license fees would be waived and an annual royalty of HK\$ 50,000 would be applicable for each practitioner supported by CIC. For overseas users, both license fee and annually royalty will be imposed.

CTN asked whether the royalty could be subject to adjustment once the funding model was agreed by ITF. NAMI elaborated that the annual royalty would be subject to review and approval in accordance with its commercialization policy and consideration to support local industries. Subject to the agreement of ITF, it was proposed that provisions would be added in the benefit sharing scheme for the transfer of the IP to CIC or the lowering of the royalty for local industry users to a nominal level when the amount of ITF funding provided was fully recovered.

After deliberation, Com-PRO Members supported the research proposal and the recommended funding option. However, the Chairman suggested that approval should be sought from the Council on the proposed IP arrangement as it would be a change from the current practice that IP generated from projects with CIC funding should belong to CIC.

The Secretariat would seek Council’s approval on the IP arrangement accordingly.

Secretariat

4.5 **Investigating the Potentials of Implementing Robotics and Automation in the Context of Large-scale Housing Development for Hong Kong in Hong Kong**

Prof. Thomas BOCK from Technical University of Munich delivered a

presentation to update Com-PRO Members of the progress of an on-going study on implementing robotics and automation in housing development projects in Hong Kong. Prof. BOCK advised that his team already finished the relevant survey, on-site case study and co-creation workshops with local practitioners to identify trades suitable for applying robotic technology. Prof. BOCK informed that the research team has developed a prototype for a painting robot. A mock-up will be carried out by the end of the project, tentatively, in second quarter of 2018.

The Chairman asked the researcher to clarify on the estimated cost for mass production of the proposed robot. Prof. BOCK clarified that the prototype price consisted one-time distributable algorithm programming cost. The eventual cost could be significantly lower for production of multiple robots in one-go. The Chairman added that a simplified version could be exhibited in the Construction Innovation Technology Application Centre (CITAC).

KSKn commented the preliminary design should consider the suggestions from the end-user, i.e. Contractors. The researcher replied that two days' workshops had been held in August 2017 to engage the views from the industry, especially the contractors. Individual interview with selected Contractors would also be conducted soon after the meeting to gather more ideas.

The Chairman suggested that a long-term strategy for local robotic application should be established in light of the findings and recommendations from the study. The Secretariat would liaise closely with the research team on the development of the strategy.

Secretariat

4.6 **Achieving Productivity Leap through Construction Process Re-engineering**

Mr. Jeff FUNG from Hong Kong Productivity Council (HKPC) presented the project findings, with highlights on how efficiency could be improved for on-site rebar cutting and bending, formwork fixing and concreting operations.

Action

KSKn requested HKPC to seek and include the comments and advice from the pertinent contractor associations and workers' unions in the Draft Final Report. HKPC noted and would address the relevant suggestions in the report under preparation. The Secretariat supplemented that HKPC had interviewed instructors from the CIC training centres to seek views on feasibility of the recommended improvement measures.

The Secretariat would circulate the Draft Final Report to Members for comments after receiving it from HKPC.

**HKPC
Secretariat**

4.7 Proposed New Working Group on Flat Inspection

The Secretariat reported that as a matter arising item after the Council Meeting on 25.8.2017, CIC members held a brainstorm session on 13.09.2017 to discuss and achieve consensus on the appropriate approach to tackle with the flat inspection problem. A Working Group was proposed to be set up to improve the way of flat inspection in order to provide better service/quality flats to buyers under the Committee on Productivity as improper inspection and defect reporting may have adverse time and cost implications to delivery of new flats. The Working Group would convene meeting on a quarterly basis or at other appropriate times. Mr. Ivan FU, CIC Member, was recommended to be the Chairman of the Working Group.

Members supported and endorsed in principle of the establishment of the Working Group. Members remarked that the Working Group should pay attention when developing guidelines for flat inspection and recommending the acceptance criteria, regarding the purpose and scope of their future applications.

4.8 Any Other Business

The Chairman, Prof. Christopher LEUNG, will retire from the Committee and the CIC in January 2018 after his 6 years of service in

Action

Council. Members gave their sincere gratitude to the Chairman for his valuable contribution to the Committee on Productivity.

4.9 Next Meeting 001/18

The next meeting was scheduled in March 2018. The Committee Secretariat will inform Members once the meeting date is confirmed.

All to Note

The meeting was adjourned at 12:00 pm.