

**Construction Industry Council**

**Committee on Productivity and Research**

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Meeting No. 001/16 of the Committee on Productivity and Research (Com-PNR) was held on 15 March 2016 (Tuesday) at 2:00 pm at Meeting Room, ZCB, 8 Sheung Yuet Road, Kowloon Bay, Hong Kong.

Present: Christopher LEUNG (KYL) Chairman  
Ivan Chin-shing FU (FI)  
Kwok-kwan NG (NKK)  
Vincent MAK (VM) for Permanent Secretary for  
Development  
Patrick WONG for Permanent Secretary for  
Transport and Housing (Housing)

In Attendance: Wei PAN The University of Hong Kong  
Julian LEE (JnL) Senior Manager - Research &  
Development  
James WONG (JsW) Assistant Manager - Research &  
Development

Apologies: Kai-sing KWAN (KSKn) for Permanent Secretary for  
Transport and Housing (Housing)  
Shujie PAN (PSJ)  
Sze-chun WONG (SCW)

**PROGRESS REPORT**

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**1.1 Confirmation of Progress Report of the Previous Meeting**

Members took note of Paper CIC/PNR/R/003/15. With no further comments, Members confirmed the Progress Report of the Meeting No. 003/15 of the Com-PNR.

**All to Note**

**1.2 A Comprehensive Productivity Appraisal of the Hong Kong Construction Industry**

Dr. Wei PAN from the University of Hong Kong, the Principal Investigator of the research project, presented Members the progress and preliminary results. This project aimed to improve the productivity performance and competitiveness of the Hong Kong construction industry by conducting a comprehensive investigation on the practices, procedures and standards adopted in the industry.

Dr. PAN briefed Members on the research progress. The inception report and preliminary plan were submitted in January 2016 while the interim report had been drafting in good progress. To achieve the research objectives, interviews were being arranged with industry stakeholders such as government officials, main contractors, engineers, etc. in the Hong Kong construction industry. Focus group meetings and two consultation forums will also be held to identify practical solutions with a view to enhancing the productivity of the industry.

Dr. PAN also introduced the project team and methodology of this project. In this project, there would be two benchmarking exercises with the UK and Singapore. A preliminary literature review was well underway to develop the Total Factor Productivity (TFP) Model in addition to collecting the necessary figures from the government. Five distinct areas that affected construction productivity was considered in the TFP Model and a dynamic systems approach was adopted to find out the interrelationship between them. He pointed out that the TFP Model might be too idealistic to a certain extent because

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some of the factors might not have adequate substantiation and some of them might not suit to the characteristics of Hong Kong. The application of this Model would be verified by case studies and benchmarking with overseas experience. By obtaining all the findings and observations from consultation with the industry, a strategic action plan for improving the productivity and efficiency of the Hong Kong construction industry would be formulated.

A Member asked about the methods used to quantify productivity. Dr. PAN replied that the fundamental purpose of this project was to facilitate a better qualitative understanding of productivity instead of the quantitative one. The research period of 18 months would be inadequate to build up a quantified model.

A Member asked about the definition of productivity. In response, Dr. PAN said that the definition of productivity would be based on the TFP Model, subject to various factors such as the construction inputs (i.e. labour, material and innovation, etc.) and tendering process. These factors would be taken into account during the development of this model. In contrast to most previous studies which mainly focused on labour productivity, this study would implement a more in-depth productivity analysis considering a wide range of inputs or determinants and their impact on productivity. The industry-based figures would be obtained from the Labour Department, Census and Statistics Department, consultancies etc. and the research team would also check the changes of the Gross Domestic Product (GDP) in terms of the construction industry's contribution.

A Member expressed concern about the difficulty to compare the productivity of the construction industry in different years based on the GDP because the components of construction as a percentage of GDP were complicated. It not only rested on price but was also affected by the market situation. Dr. PAN agreed that the measurement of productivity by using GDP would be difficult. The research team would make reference to the reports published by the Asian Productivity Organisation and apply constant prices as the basis for comparison so that the actual level of the industry's contribution to the

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GDP could be compared from 2000 to 2013. A correlation analysis of 43 economies had been conducted and it indicated that there should be a positive correlation between GDP and construction costs. He said that the TFP Model would verify the above finding.

FI suggested that the figures published by the Construction Workers Registration Board (CWRB) could be provided to the research team for reference. He expressed opinions on the definition of productivity and said that it would be subjective to determine whether Singapore or Hong Kong had a higher productivity but the former seemed to have a higher productivity in view of its faster policy implementation procedures and advantageous labour importation policy. He opined that there should be a framework to understand productivity and the observations obtained from this study would be imminent to provide an insight for the construction industry to address the issues of aging labour workforce, increasing construction cost and delayed construction period. He agreed with the use of interviews to explore measures but they should be carried out in a wider scope with inclusion of the grassroots workers as the targeted group apart from the industry leaders. Dr. PAN said that such group was already included in the proposed scope of the interview and agreed that this study would provide an insight to the industry especially pertaining to sustaining the labour input and addressing the issue of escalating labour cost.

FI mentioned that the figures for the new construction sites in the past two years in term of the total construction expenditure should be considerably accurate with the implementation of the construction industry levy although there was still lack of the figures for the domestic and simple minor works.

The Chairman appraised that it was a good approach to compare Hong Kong's situation with that of UK and Singapore. He suggested taking a further step to compare those identified factors of increasing construction cost with other countries. Dr. PAN expressed that the research period of 18 months might not be long enough to cover all the aspects but would try the best to put forward a comprehensive

evaluation.

FI commented that this study should provide objective findings and observations that were practical to derive benefits to the industry but the definition of productivity should be clearly defined. He appraised the practice to assign the research to respective Committees under the Construction Industry Council (CIC) for management.

### **1.3 Work Plan and Budget for 2016 & 2017 cum Implementation Plan of Report on ‘Building for a Better Future – Vision 2030’**

**1.3.1** Members took note of Paper CIC/PNR/P/001/16. The Chairman briefed Members on the year plan of the Com-PNR for 2016 and 2017 according to the **Annex A**. The following consultancy projects had commenced.

- 1) “A Comprehensive Productivity Appraisal of the Hong Kong Construction Industry” (Commenced in December 2015);
- 2) “Benchmarking the Construction Trade Productivity” (Commenced in February 2015); and
- 3) “Assessing the Performance of the Hong Kong Construction Industry, Key Performance Indicators (KPIs)” (Commenced in June 2015).

Members confirmed that the tender for the consultancy project of “Integrating Constructability in Project Planning and Design” would be re-tendered.

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**1.3.2** The Chairman invited Members to refer to the **Annex C** which outlined the five recommendations to be implemented by the Com-PNR.

- 1) Recommendation 14 - Establish a single repository of research demand and supply to systematically propose and implement**

**the research agenda for Hong Kong**

The Chairman said that this recommendation should be jointly implemented by different committees under the CIC. The respective research fields such as demolition, high rise buildings and maintenance works related to construction productivity should be addressed by the Com-PNR.

The Chairman invited Members to share their views on how to enhance productivity for construction of high-rise buildings. NKK commented that increasing use of steel could enhance productivity but would give rise to a higher construction cost. The Chairman said that in Mainland China, state key laboratories were set up to investigate the application of new productive materials and equipments in the construction industry and opined that Hong Kong could cooperate with Mainland China to deliberate effective practices. Mr. Patrick WONG opined that increasing standardisation would be one of the solutions. Generally speaking, using concrete would be more economical than steel, especially for buildings with about 30 to 40 floors but this situation would reverse when the labour cost reached an unaffordable level, or for super high-rise buildings. The Chairman opined that the Housing Authority may take the lead to conduct trials for the new practices.

**2) Recommendation 17 - Establish an agreed metric for measuring the industry's productivity, and quality of work, over time and against international peers**

The Chairman reported that a Consultant has been engaged to address this recommendation.

**3) Recommendation 18 - Validate industry interest and examine implementation routes for establishing project-level benchmarking database**

Members agreed with the necessity of conducting questionnaire survey on this recommendation to probe the response of the industry

beforehand.

JsW said that examples of such database could be found in the US and UK. Platforms were provided for contractors to enter project figures without disclosing their company names for benchmarking. JnL supplemented that the benchmarking exercise of the UK system would provide contractors with feedback to assess the productivity level of their projects.

FI pointed out that it would be difficult to compile productivity information from contractors. Even though submission of such information was made statutory, the quality would be unsatisfactory just as the statutory submission of the Workers' Daily Attendance Record. Compulsory enforcement may bring about adverse effects. However, he opined that the provision for "Designated Workers for Designated Skills" would provide an opportunity to compile quality information through electronic means.

The Chairman suggested organising workshops with invited industry experts from the US and UK sharing benefits of the project-level benchmarking database. JnL agreed to follow-up this suggestion and would invite overseas experts including the Constructing Excellence from the UK to share their experience.

**4) Recommendation 19 - Empower and motivate design professionals to proactively incorporate buildability considerations in design**

Members said that the implementation timeframe would depend on various factors including the fulfillment of different stakeholders' interests, provision of relevant trainings to workers, consideration of the whole life cycle of construction, especially the maintenance stage in design, as well as implementation of necessary laws and regulations. Members agreed that the designers should place more emphasis on the maintenance and repair period during the design stage. Guidelines and good practices should be provided by the government for the industry stakeholders to take reference.

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The Chairman sought Members' views to assess the assignment brief for the research project of "Integrating Constructability in Project Planning and Design" before the tendering process. The Research & Development department would circulate the assignment brief to Members for review. Members agreed to propose a new research project of constructability in relation to the maintenance and repair stage.

Members agreed that there should be a roadmap for the implementation of this recommendation but it was not urgent. Therefore, its preparation could be contemplated.

*[Post Meeting Notes: The assignment brief was circulated to Members on 22 March 2016.]*

**5) Recommendation 26 - Set up an industry award specifically for design buildability and safety**

Members agreed that this recommendation should be pended for future exploration.

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The Chairman summarised the main points of the discussion and thanks Members for their opinions. CIC Secretariat shall compile the work plan and budget, then circulate to Members for comment.

**1.4 Potential of Adopting Construction Automation and Robotic in Hong Kong**

Members took note of Paper CIC/PNR/P/002/16. JnL briefed Members on the research study proposed by Prof. Thomas Bock. Members were invited to consider and, if appropriate, endorse this study and the additional recommendations for implementing the plan.

Members agreed that this study was forward looking but close communication with the industry's stakeholders was necessary to



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ensure the outcomes would be practical and suited to Hong Kong's situation. Upon completion of this study, further in-depth studies and practical strategies might be developed in collaboration with specialists from the Mainland China.

Members endorsed the implementation of this study and opined that concrete and specific solutions that were ready for implementation in Hong Kong should be developed. The CIC Secretariat would follow-up on this suggestion.

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**1.5 Any Other Business**

Following the previous composition of Com-PNR, Members agreed to invite the Hong Kong Construction Association and the Hong Kong Federation of Electrical and Mechanical Contractors to nominate one representative to be a Co-opted Member in Com-PNR respectively. Members also agreed to invite representatives from the Buildings Department and Architectural Services Department to become Co-opted Members of the Com-PNR.

Members opined that there should also be a Co-opted Member representing the interests of the professional engineering consultancy firms. Ir Prof. Reuben CHU, a former Member of the Com-PNR, would be invited to recommend suitable candidates.

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**1.6 Tentative Date of Next Meeting 002/16**

The next meeting is tentatively scheduled in June 2016. The Secretariat will inform Members once the meeting date is confirmed.

**All to Note**

There being no further business, the meeting was adjourned at 4:30 pm.