Construction Industry Council

Committee on Productivity

Meeting No. 003/23 of the Committee on Productivity (Com-PRO) was held on 20 September 2023 (Wednesday) at 2:30pm in the Board Room, 38/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon and via MS Teams.

Summary Notes of the Com-PRO Meeting No. 003/23:

Agenda Item	Paper	Major Resolutions / Progress Highlights
3.1	CIC/PRO/M/002/23	**Confirmation of Minutes of the Previous Meeting** Members confirmed the minutes of the Com-PRO Meeting No. 002/23 without any amendment.
3.2	-	**Matters Arising from the Previous Meeting** **(a) Updates on Improving Time, Cost and Quality Performance of the Hong Kong Construction Industry (TCQ) Report:** The report will be updated in every meeting. **(b) Productivity Index:** The Secretariat reported the use of a productivity index to measure construction productivity, and Members need to further discuss the calculation methods for the productivity index (based on total construction floor area or by trade).
3.3	-	**Report KPI Status of Com-PRO**

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		Regarding the manpower forecast for professionals, technicians and site supervisory personnel, the Secretariat has issued a questionnaire to industry stakeholders to collect supply data.
3.4	-	**Status of Identification of 10 Solutions for Improving Construction Productivity** (a) **Status of identification of 10 solutions for improving construction productivity (2023 KPI)** The Secretariat presented the status of identification of 10 solutions for improving construction productivity. The 10 solutions were identified as from 3 aspects: Operation, Workflow and Site Facility. One of the solutions was robotics application on site, organising site visits to collect pain points. The Secretariat introduced the functions and duties of robotics working group which consists of different teams under Industry Development Division. The Secretariat asked Members to provide some feasible sites for site visit. As the approval rate of R&D fund is low, the Secretariat would visit the sites with professors/researchers to enhance their understanding of the pain points. Members suggested mandatory application of robotics on some sites to improve the feasibility. Also, the site environment shall be well managed due to limitation of robots. (b) **Progress update on TCQ Report (ID-1, ID-2 & ID-3)** The Secretariat updated Members with the recent status of TCQ report items conducted by ID Division under three main strategies: Development of Digital Library to Facilitate MiC and MiMEP (ID-1), Support and Promote MiC and MiMEP (ID-2), and Build up Industry's Capability on MiC and MiMEP (ID-3). Regarding "Development of Digital Library to Facilitate MiC and MiMEP", the Secretariat proposed a two-stage plan for creating the library which is based on the discussion in last meeting regarding the case study on real projects for extracting lesson learned and connection details for MiMEP.

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		The Secretariat suggested issuing EOI to those on the Lists of Pre-accepted MiC Systems / Components and notable MiMEP suppliers to collect project information and BIM models as the first stage.
		The Secretariat suggested the second stage is to interview professionals and relative construction stakeholders to prepare a guidebook for MiC and MiMEP.
		Members had no adverse comments on this approach. But they suggested that the term "Object Library" should be discussed and clarified in future meetings to determine if it is appropriate.
3.5	-	**Progress Update on the Consultancy Services on Digitalising Construction for Enhancing Project Delivery**
		Ir Dr. Llewellyn TANG from Llewellyn & Partners Co. Ltd. reported the progress of their consultancy services.
		At phase two, the team carried out interviews and surveys for seven selected local projects and that for other three projects will be carried out in the coming months. The initial result of phase two indicated that the interviewed local projects had similar level of adoption in Common Data Environment (CDE) and Building Information Modelling (BIM) technologies and lower adoption level of Design for Manufacturing and Assembly (DfMA), Virtual Reality (VR) or Augmented Reality (AR) technologies and mobile applications when compared with projects worldwide.
		The team will initiate the consultation with stakeholders in October 2023 which is expected to be completed by mid November. Simultaneously, the team will start to draft the Best Practice Guidebook as the final deliverables.
		Members were concerned about the practical use of the guidebook and how it could assist the local industry stakeholders to position their digital maturity level and type. Ir Dr. TANG explained that there

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		was a self-assessment tool kit which will be included in the guidebook to assist the project holders to identify their digital maturity type and provide guideline if they would like to shift their digital maturity type. The Secretariat would further liaise with the project team to monitor the progress of the consultancy services and update Members the progress on a regular basis.
3.6	CIC/PRO/P/006/23 (for approval)	**Applications for the CIC Research and Development (R&D) Fund** **(a) AI-based weld defect identification system with applications on high-strength steel structures** Prof. LAM Heung-fai from the City University of Hong Kong presented the proposed research. The aim of the proposed research was to develop an AI-based weld defect identification system with an application in high-strength steel structures. It was expected that the research outcome could speed up the weld inspection. Members suggested to explore the use of ultrasonic camera for data capturing as well, since the use of X-ray camera would incur radiation risk. And the application could be extended to other inspection to enhance the construction productivity. Members endorsed the proposed research under the Explorative Project Scheme, with a duration of 24 months and at a funding support of HK$1,065,742. The Secretariat would liaise with the research team and prepare the research agreement accordingly.

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		(b) Site trial of an Artificial Intelligence Rock Type Classification and Fracture State Characterization APP for Engineering Applications Prof. Louis WONG from the University of Hong Kong presented the proposed research. The aim of the research was to test the product on site for productivity gains, error reduction and exploration on ways to utilize the APP to benefit the geology field. Members raised their concern on the future maintenance of the APP after project completion. The Secretariat would liaise with the research team on the long-term operation plan. Members approved the proposed research under the Site Trial Scheme with a duration of 9 months and at a funding support of HK$590,675. The Secretariat would liaise with the research team and prepare the research agreement accordingly.
3.7	-	**Request for Extension of Time (EOT) on the Funded Research Project – Development of an Artificial Intelligence Rock Type Classification and Fracture State Characterization APP for Engineering Applications** Prof. Louis WONG from the University of Hong Kong presented on the EOT request of the funded research project – Development of an Artificial Intelligence Rock Type Classification and Fracture State Characterization APP for Engineering Applications. The project would complete in September 2023 and Prof. WONG proposed to Members to extend the project for 6 months for enhancement of data security, analysis of usage pattern of users, database development and app compatibility to new mobile devices, i.e. the completion date will be extended to March 2024, by utilizing the remaining fund of this project and with no extra cost implication. Members approved the EOT request with no adverse comments.

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3.8	CIC/PRO/P/007/23 (for approval) CIC/PRO/P/008/23 (for information)	**High Productivity Construction (HPC) – Modular Integrated Construction (MiC) & Multi-trade Integrated Mechanical, Electrical and Plumbing (MiMEP)** **(a) Report on MiC KPI Status** (i) The Secretariat reported that there were more than 80 no. of attendees for MiC for Project Managers Signature Course as of August 2023 and the coming class would commence in September 2023, hitting the target number of attendees of 2023, i.e. 100. (ii) There were 220,000 clicks on MiC website as of September 2023. **(b) Update on 2024 Business Plan and Budget Plan for MiC** The Secretariat reported that item 4 was amended to avoid misunderstanding: from "4. Addressing and Tackling Technical and Policy Issue" to "4. Address and Tackling Technical Issue"; and, from "4.1 Consultancy for HPC Research and Development" to, "4.1 Consultancy for HPC Case Study, Guidebook and Associated Reference Material". Members approved the business plan and budget plan for MiC with no further comments. **(c) Reference Materials on Statutory Requirements for MiC Projects** The Secretariat reported that the Reference Materials on Statutory Requirements for MiC Projects was a third edition which incorporated updates from Government Departments since 2020. The Reference Materials had been reviewed by the Government Departments and would be circulated to Members for comment and approval before publication. The Secretariat is seeking comments from Members of Committee on Productivity.

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		(d) Updates on Technical Report on the Deconstruction, Relocation and Reinstallation of MiC Units in Nam Cheong 220 The Secretariat updated that the draft final report on the Deconstruction, Relocation and Reinstallation of MiC units of Nam Cheong 220 was received and is now under CIC's review. A webinar will be launched to publish the report findings at the end of 2023. **(e) Digital Resources Centre with Object Library to Facilitate MiC and MiMEP Adoption** As reported in Item 3.4. **(f) Improvement Works for MiC Resources Centre** The Secretariat proposed that the revamp design would include introducing the history and development of MiC, displaying the project videos through virtual reality, explaining the design considerations through interactive exercise, demonstrating the use of digitalisation tools and real practice, offering hands on experience, and showcasing MiC mock up of Tonkin Street Project. Members suggested the Secretariat to define the target group of visitors and visiting route for public visitors. The Secretariat took note of the comments and would further revise the proposal. Members had no further comments on Item (a)-(f).
3.9	-	**Any Other Business** **(a) 2023 Research and Development (RnD) Forum – Experience Sharing Session on Use of Maturity Method for Concrete Strength Estimation** The Secretariat reported that a 2023 RnD forum – Experience Sharing Session on Use of Maturity Method for Concrete Strength Estimation will be held on 13 October 2023 (Friday), at Zero Carbon Park.

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3.10	-	**Next Meeting No. 004/23** The next meeting would be held on 13 December 2023 tentatively. The Secretariat would inform Members upon confirmation of the meeting details. The meeting was adjourned at 5:15pm.

Remarks: *The mentioned papers discussed at the Committee on Productivity Meeting No. 003/23 and the full minutes can be made available to Council Members by the CIC Secretariat upon request.*