

This issue of *Construction Innovation* consists of six papers and a guest editorial. In the guest editorial, Atkin and Bildsten outline the future directions of facility management. The guest editorial begins by highlighting how innovative technologies like building information modelling and artificial intelligence; regulation, standards and codes; and human resources can have an impact on facility management. The guest editors then argue that for whatever plans being laid to deal with the challenges of innovative technologies, it is necessary to ensure they align with the facility management strategy and facility/asset business owner's business objectives.

Tezel and Aziz examine the benefits of adopting a lean construction technique called visual management in transportation construction projects. Based on an action research of two transportation projects in England, the authors observed that visual management can lead to a better understanding of the bottlenecks and clashes, a reduction in work wastes and non-value-adding activities, an improvement in inter-team communication and engagement, a reduction in the average team meeting time, etc., by establishing a visual project control board, traffic management coordination board and team performance visual board, as well as adopting the 5S, i.e. sort, set-in-order, shine, standardise and sustain, concept.

To minimise the total logistic costs of road construction projects, Choudhari and Tindwani develop a model to optimise the sourcing, processing and distribution of raw materials. Linear programming was used to map the three stages of the supply chain, viz., raw material sources, intermediate raw material processing facilities and final demand consumption points. Data related to the aggregate used for road construction were fed into the linear programming formulation to decide the optimal movement of materials. By implementing the optimisation model in Excel Solver, decision-makers can make more informed decisions for logistics of road construction projects.

A transaction formalism protocol was developed by Zeb and Froese to formalise the transaction of infrastructure management. The proposed transaction formalism protocol consists of both the specification and tool which should provide a step-by-step procedure for transaction development personnel to define the necessary information in a structured, consistent and simple manner. Through the development of standardised message templates, computer-to-computer exchange of information can be achieved in an effective and efficient manner. The proposed tool should, therefore, help address the shortcomings of the current transaction formalisation standards and methodologies.

Osei-Kyei and Chan compare the risk factors of public-private partnership projects in developing and developed countries. Through a questionnaire survey, the authors alluded that the risk factors being more relevant to developing countries like Ghana are associated with the political, legal and economic conditions which affect public-private partnership project delivery. As for mature economies like Hong Kong, the risk factors evolve around the design, construction, operation, relationship and organisation of public-private partnership projects. The findings of this paper should help inform international investors formulating appropriate risk mitigation measures when entering into a public-private partnership arrangement in different parts of the world.

Gledson and Phoenix explore the organisational attributes that determine innovation of construction companies in the UK. The results show that the innovations were mainly evolved around technical products and process changes. Small and medium



construction enterprises will be more prepared to adopt innovation if their profit and company profile can be improved. Lack of client interest was considered as the major barrier for innovation. Despite a general perception that larger companies tend to be more prepared to innovate, there is no positive relationship between organisational maturity and the likeliness to innovate, as younger organisations surveyed had greater propensity to adopt innovation.

In the last paper of the issue, Hemström *et al.* strive to unveil the innovativeness of the Swedish construction industry from the architects' perspective. According to the research findings, architects in Sweden perceive a low level of innovativeness in their construction industry. The major barriers for innovation in the Swedish construction industry as perceived by the architects there include the initial costs and economic risks associated with innovation. The use of conventional design models, adherence to conventional construction methods and ability of contractors to adapt to innovations also hinder the innovation of the Swedish construction industry. The paper suggests that clients and contractors are the most influential to *Construction Innovation* in Sweden.

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