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Editorial

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Editorial

1 Zhen Chen BEng, MEng, PhD, MASCE, FHEA
Lecturer in Construction Management, University of Strathclyde,
Glasgow, UK

2 Andrew Agapiou BEng (Hons), LLM, PhD, MCI Arb
Senior Lecturer, University of Strathclyde, Glasgow, UK

3 Simon Smith BEng, PhD, CEng, FICE
Chair and Honorary Editor, Editorial Advisory Panel; Senior Lecturer,
School of Engineering, University of Edinburgh, Edinburgh, UK

A major project is typically a large-scale investment project costing more than £100m. A megaproject on the other hand, often considered as a subset of major projects, is typically above US\$1 billion. Such projects are not just significant for their cost but often also provide substantial impacts on social, technical, economic, environmental and political (STEEP) dimensions in the short and longer term. They have the ability to transform public services and deliver a robust infrastructure system that can serve generations. Lessons learnt from past projects across the world have identified a need to develop leadership and management capability with regard to management, procurement and law through the life cycle of such large-scale engineering and construction projects.

This themed issue on major project management aims to promote and support innovation and progress in project management through multidisciplinary and interdisciplinary work in practice and research. The following topics in relation to management, procurement and law were proposed in the call for papers

- best practice study on management, procurement and law
- design and construction management
- facilities management
- independence and interdependence study
- infrastructure investment justification
- project change management
- project engineering and informatics
- project strategy and implementation
- risk assessment
- stakeholders and supply network integration.

The call attracted a great number of potential submissions, reflecting the breadth and interest in research and study of major and megaprojects internationally. This has allowed the journal to publish some articles on this theme in normal issues and readers may be interested in the works by Baharuddin *et al.* (2017), Ghazali *et al.* (2017), Lopez *et al.* (2017) and Jobling and Smith (2018), all published in the last 7 months. In this issue we focus on three further articles that consist of both experience sharing and rigorous independent research that translate knowledge gained from practice and research to inform

both decision-making and activities undertaken by stakeholders in major project management.

This themed issue consists of three full-length papers, and a book review, which present professional insights on and research into a range of topics, including ‘Understanding the critical success factors for delivery of megaprojects’ (Cepeda *et al.*, 2018), ‘Risk-based tender evaluation using multicriteria decision analysis’ (Samuel, 2018), ‘Comparison of dispute boards and statutory adjudication in construction’ (Lopez and Amara, 2018) and *NEC4 Practical Solutions* (Patterson, 2018). A brief introduction about these papers is given below with regard to their contributions to the body of professional knowledge in related areas.

Cepeda *et al.* (2018) focus on an examination of the critical success factors for megaprojects with the background of project delivery from definition to handover in Colombia. Their research applied a mixed approach of quantitative and qualitative data collection and analysis to rank 34 critical factors which were identified for the success of megaprojects and collected together in nine categories, including project characteristics (5), scope of work (3), planning and scheduling (3), cost management (3), stakeholder relationship and communication (4), procurement (3), project management (5), construction process (4) and labour (4). Through a questionnaire survey to experienced professionals working in megaprojects in Colombia, the authors found that the top factors identified across these nine categories are: number of stakeholders involved, design changes during construction, realistic work schedule, realistic estimates, competence to manage contractor, availability of materials, management strategy, site management and supervision, and labour productivity, respectively; in addition, the top three categories of critical success factors identified were scope of work, cost management, and procurement and project management; and the top five critical success factors include design changes during construction (scope of work), availability of materials (procurement), management strategy and competence and experience (project management) and adequacy of tender information (scope of work). It has also been found that inadequate information at the tender stage, design changes during the construction phase and limited availability and the supply of materials had a major negative influence, while

adverse weather conditions and the lack of prior experience with similar projects had the least impact on the delivery of megaprojects (oil and gas, transportation, and industrial processes) in Colombia. This paper further provides technical insights on approaches to mitigate risks associated with the top critical factors investigated for theoretical research and improved practice in megaproject delivery.

Samuel (2018) describes a research into risk-based tender evaluation using multicriteria decision analysis. The paper presents the use of the technique for order of preference by similarity to ideal solution (TOPSIS) (Hwang and Yoon, 1981) to evaluate bidders against five major risks relating to cost, time, quality, health, safety and welfare, and logistics. It also presents a tender evaluation tool through a case study to demonstrate the effectiveness of the method for tender evaluation. Although the case study was within a small-scale project, the methodology has potential for risk-based tender evaluation in major and megaprojects, and it is also important to consider the interactions among all identified project risks in the evaluation process. As mentioned by the author, the main objective of this paper was to design a rapid and user-friendly tender evaluation tool in order to estimate the risks, final price and final duration prior to the award of contract, and the achievement of this objective would permit a client to plan, budget and mitigate their risk prior to the award of contract.

Lopez and Amara (2018) present a comparison of dispute boards (DBs) and statutory adjudication (SA) in construction. It examines DBs and SA by comparing how these two methods have been used within three major projects, including the design, construction and demolition work at an existing correctional facility, the design and construction of a healthcare facility and the development of an energy infrastructure (a liquefied natural gas (LNG) plant and subsea fields). The comparison focuses on differences and similarities between project participants, factors influencing alternative dispute resolution method selection, and similarities between DB and SA. The paper also provides discussions on the need for alternate methods of dispute resolution, barriers in DB implementation, and SA experiences and effectiveness. As highlighted by the authors, this research is significant due to the often adversarial working environment in major and megaprojects, as well as substantial adverse consequences resulting from disputes that have not been adequately resolved between two or more project stakeholders.

Patterson (2018) provides a review of *NEC4 Practical Solutions* by Gerrard and Kings (2017). The book review shares the technical

insight of an experienced NEC specialist working on contracts and procurement, as well as providing support and training in all sectors and across their organisation's global activities, and makes a recommendation on the use of this book in practice, especially on major and megaprojects.

The editorial team hopes you find these papers informative and stimulating, and would be pleased to receive comments on this issue. Thank you.

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